WIND BASED POWER GENERATION BY PANAMA WIND ENERGY PRIVATE LIMITED IN MAHARASHTRA, INDIA

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

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Summary:

M/s VKU Certification Pvt. Ltd. (here after referred as VKU) was commissioned by M/s EKI Energy Services Limited and has verified the greenhouse gas emission reduction reported for the project activity "Wind Based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India." (VCS ID 16711), covering monitoring period from 01-November-2021 to 04-December-2022 (Inclusive of both days) under fixed crediting period from 05-December-2012 to 04-December-2022 (Inclusive of both dates) with regard to the relevant requirements for VCS activities. The project activity entails the installation of wind energy projects in Maharashtra, India. The project involves generation of electricity from WTGs with installation capacity of 70.4 MW (442 WTGs in Number) which employs wind energy to generate electricity and then distributes the electricity to the state grid. The power produced is exported to the regional grid system, which is under the purview of the Unified National Grid of India.

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 (clean energy) energy for fossil fuels-based electricity.

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 4.2/5/, VCS standard Version 4.3/6/, VCS validation and verification manual version 3.2/21/, CDM M&P, the latest version of the CDM Validation and Verification Standard 3.0/22/, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques. The verification consisted of desk review, on-site assessment and the resolution of outstanding issues and the issuance of the final verification report and certification.

The verification shall ensure that 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 12.3.0/8/ and the monitoring plan included in the registered CDM PDD /4/ version 02 dated 14-August-2015.

During this verification, 05 Corrective Action Request (CAR), 04 Clarification Requests (CLs) and 01 Forward Action Request (FAR) were identified related to operation, monitoring and GHG emission

[1] https://registry.verra.org/app/projectDetail/VCS/1671

[2] WTG Location no.49 has been decommissioned in the year 2014 due to technical reasons. Hence, it is non-operational during the current monitoring period. A total of 44 WTGs are operational during the current monitoring period.

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. One (01) FAR was raised during this verification. The same has been discussed in Appendix B of this verification report.

In conclusion, it is VKU's opinion that the project activity "Wind Based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India." (VCS ID 1671), 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 12.3.0/8/. The monitoring system is in place and the emission reductions are calculated without material misstatement. Hence, VKU is able to certify that the emission reductions from the project during the seventh monitoring period from 01-November-2021 to 04-December-2022 (Inclusive of both days) under fixed crediting period from 05-December-2012 to 04-December-2022 (Inclusive of both dates) amounts to 94,949 tCO2e.

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1 INTRODUCTION

1.1 Objective

M/s EKI Energy Services Limited has commissioned M/s VKU Certification Pvt Ltd (hereafter as VKU) to carry out the seventh periodic verification of the project "Wind Based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India" (VCS ID 1671) for the monitoring period from 01-November-2021 to 04-December-2022 (Inclusive of both start and end dates) under fixed crediting period from 05-December-2012 to 04-December-2022 (Inclusive of both start and end dates)

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.

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 4.2/5/, VCS standard version 4.3/6/ and GHG program applied, on the basis of the registered project design document.

The verification is for the seventh monitoring period from 01-November-2021 to 04-December-2022(399 days) (Inclusive of both start and end dates) that falls under the fixed crediting period[3] from 05-December-2012 to 04-December-2022 (Inclusive of both start and end dates). The objectives of this verification exercise are, by review of objective evidence, to establish that:

- All structural characteristics (technology, project equipment, monitoring and metering equipment) of the project are in place, and the project activity has been carried out and operated in accordance with the registered CDM PDD/4/;
- The monitoring report/1/ and other supporting documents are complete; the data is collected and preserved in accordance with the monitoring methodology 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, 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.

[3] The fixed crediting period for the project activity is from 05-December-2012 to 04-December-2022. (As per registered VCS PD version 03 dated 05-April-2017-).

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 4.3 /6/, VCS Program Guide 4.2 /5/, validation and verification manual version 3.2 /21/, 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 dependability of project monitoring, based on the recommendations in the most recent versions of the VCS Validation and Verification Manual Version 3.2/21/.

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.

Role/Qualification	Last Name	First Name
VCS Team Leader, VCS Verifier	Ahirwar	Vivek Kumar
Technical Expert (TA 1.2, wind)	Ahirwar	Vivek Kumar
Validator/Verifier- Trainee	Sharma	Deepali
Project Trainee	Chauhan	Nisha

Technical Reviewer & Technical Expert (TA 1.2, wind)	Kumar	Sanjay

1.4 Summary Description of the Project

The project activity involves electricity generation by wind electric convertors (renewable source) and supplying the generated electricity to the state grid system which is under the purview of the Unified 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 63 numbers of wind turbines of 1.6 MW capacity each (aggregating to 100.8 MW) in the state of Maharashtra. However, till now only 72 MW (45 WTGs) have been implemented in different phases and 18 WTGs are yet to be implemented. The same has been taken as a Project Description Deviation in the current MR/1/ and as well as in previous verification which can be further confirmed from documents uploaded on *VERRA*. Year 2014 saw the decommissioning of WTG Site No. 49 for technical reasons. As a result, it is not in use throughout the time that is being monitored. In the current monitoring period, 44 WTGs are active and operational.GE XLE 1.6 MW manufactured by M/s GE India Industrial Private Limited. **The project was commissioned on 22-February-2013 which is the earliest date of commissioning of the windmill of the project activity** and run satisfactorily since then and these dates are verified against Registered VCS PD/3/ and CDM PDD/4/ and commissioning certificate/13/.

Project Participant	Project Type	Project Capacity in AC	Date of commissioning	Project location	State
Panama wind energy private limited	Wind	72 MW	22-February-2013	Satara district	Maharashtra

Start date of this project activity is 22-February-2013.

As per MR/1/, the electricity generated from the project is supplied to the Unified National Grid which is confirmed from registered CDM PDD/4/, Credit notes issued by state electricity board/10/, previous verification report /18/ and interview with PP/25/. Out of the proposed 63 WTGs only 45 WTGs have been commissioned and further 18 WTGs referring to the project are still under the implementation stage. Furthermore, the deviation has been approved in previous verifications which can also be confirmed from the documents uploaded on VERRA and the same

has been mentioned in the current MR/1/ as well. WTGs are verified against the registered CDM PDD /4/ and commissioning certificates/13/.

This information was verified during on site assessment and found to be in line with the details provided in the registered CDM PDD /4/. The total emission reductions from the project activity during the current monitoring period (7th monitoring period) from 01-November-2021 to 04-December-2022 (including both days) amount to 94,949 tonnes of CO2e. The net electricity generated by the project during current monitoring period from 01-November- 2021 to 04-December-2022 (including both days) is 100,093.18 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 4.2/5/, VCS standard version 4.3/6/. 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 12.3.0/8/.**

Scope: 01 Energy Industries (renewable- and non-renewable sources) Title: "Grid Connected Renewable Electricity Generation" (version 12.3.0) /8/. During onsite visit/19/ verification team **reviewed 100% data for all the WTGs** involved in this project at site **and hence no sampling is involved.**

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 03-November-2022, version 2 dated 17-January-2023, version 03 dated 25-January-2023 and Version 04 of 02-February-2023, version 05 of 15-February-2023 the emission reduction calculations spreadsheet version 01 of 04-December-2022, version 02 of 17-January-2023, Version 3.0 of 25-January-2023 and Version 04 of 02-February-2023 were assessed as part of the verification. In addition, the registered CDM PDD /4/ 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.

/1/	EKI: VCS monitoring report for "Wind Based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India." Version 1.0 of 03-November- 2022 Version 2.0 of 17-January- 2023 Version 3.0 of 25-January-2023 Version 04 of 02-February-2023 Version 05 of 15-February-2023
/2/	EKI: Emission Reduction Calculation Spreadsheet Version 1.0 of 03- November- 2022 Version 2.0 of 17-January- 2023 Version 3.0 of 25-January-2023 Version 04 of 02-February-2023
/3/	Registered VCS PD "Wind based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India" version 03 dated 05-April-2017
/4/	Registered CDM PDD for the project "Wind based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India" version 2.0 of 14-August-2015
/5/	VCS: VCS Program Guide, version 4.2 of 22-June-2022
/6/	VCS: VCS Standard, version 4.3 of 22-June-2022
/7/	VCS: Monitoring report Template VCS Version 4.1
/8/	CDM Executive Board: Baseline and Monitoring Methodology ACM0002 "Grid Connected Renewable Electricity Generation from renewable sources" Version 12.3.0
/9/	UNFCCC: Project search: https://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1354531234.95/view
/10/	Credit Notes issued state utility Maharashtra State Electricity Distribution CO. LTD. (MSEDCL) to PP for the current verification period.
/11/	Certificates of Calibration for all the meters belongs to project activity
/12/	Invoice issued by PP to state utility- Maharashtra State Electricity Distribution CO. LTD. (MSEDCL).
/13/	Commissioning certificate of all the WTGs of the project activity issued by state electricity authority
/14/	Power Purchase Agreements signed between Project Proponent and state electricity authority: - Panama wind Energy Private Limited & Maharashtra state electricity distribution company limited for 5 WTGs- 14-March-2012, 5 WTGs- 12-March-2013, 5 WTGs- 17-October- 2013, 3 WTGs- 29- March- 2014, 9 WTGs- 29-March- 2014, 1

	WTGs- 19-July-2014, 5 WTGs- 19-July-2014, 3 WTGs- 01-August- 2014, 3 WTGs- 29-March-2014
/15/	Letter of declaration dated 19-October-2022 from PP regarding not having created or sought any other form of environmental credit for the same period
/16/	Monthly generation reports issued by O&M contractor
/17/	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
/18/	LGAI Technological Center, S.A. (Applus+ Certification): Final Verification report "Wind Based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India." version 2.0 dated 10-August-2022 covering monitoring period of 01- January-2021 to 31-October-2021
/19/	Site Visit Photographs videos and attendance sheet dated 07-December-2022
/20/	VERRA: https://registry.verra.org/app/projectDetail/VCS/1671
/21/	VCS Validation and verification manual version 3.2 dated 19-October-2016
/22/	CDM Validation and Verification Standard version 3.0 dated 09-September-2021
/23/	Technical Specifications of WTGs
/24/	Grievance Register present on site
/25/	On site personnel interview dated 07-December-2022
/26/	GPS Google software used for location during onsite visit
/27/	Breakdown details for current verification period
/28/	REC website Renewable Energy Certificate Registry of INDIA https://www.recregistryindia.nic.in/index.php/publics/faqs
/29/	Gold Standard Foundation: https://registry.goldstandard.org/projects?q=&page=1
/30/	EIA NOTIFICATION dated 14-September-2006; https://moef.gov.in/wp-content/uploads/2018/03/so1533.pdf
/31/	Letter describing breakdown due to ROW issue from November-2021 to February-2022
/32/	VCS Validation Report version 02 dated 05-April-2017
/33/	VERRA mail stating no mention of Lifetime Contributions in case of no previous SDG Reporting

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 **07-December-2022 in Maharashtra** 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.

The topics covered during interview ranges from general features and implementation of project

SNo.	Name	Designation	Topic
1.	Patil Jitendra	Panama -Manager	Responsibility for Maintaining the data records, ensures completeness of data, and reliability of data (calibration of equipment's), QA/QC.
2.	Bolake Saudagar	PWEPL- HR & Admin	Training Details, Employment records
3.	Borge Vijay	Panama (O&M)	Data management and Management Practices, QA/QC
4.	Rajendra Kadam	PWEPL(Executive)	Site management practices, QA/QC
5.	Kantilal Kumbhar	Omni Ele	Site management practices
6.	Rajesh Kumar Gupta	GE/O & M Provider	O&M discussion of WTGs, SCADA System, Management Practices
7.	Sharn Dhar	GE/O & M	O&M discussion of WTGs, SCADA System, Management Practices

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.

For local stakeholders:

S No.	Name	Category	Topic of Discussion
1.	Lakshman Babar	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.	Arun Kadam	Local Stakeholder	
3.	Tanaji Kambre	Local Stakeholder	

4.	Rupesh Pawar	Local Stakeholder	The ongoing communication procedure and the address of their grievance by the project proponent The employment generation due to project activity implementation.

2.4 Site Inspections

An On-site visit was undertaken by the verification team to the project location identified in the MR at Satara District in Maharashtra state India on 07-December-2022 to carry out the following;

a. A review of the operation and implementation of the registered project activity in accordance with the VCS PD/3/ and VCS MR/1/approved documents;
b. An analysis of the information flows used to generate, aggregating and reporting the monitoring parameters;
c. Interviews/25/ with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the registered VCS PD/3/
d. 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;
e. 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;
f. A review of calculations and assumptions made in determining the GHG data and emission reductions;
g. 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 04 CARs** were raised during this verification which were closed successfully and **01 FAR** was raised during this verification. Details are given under Appendix B of this report.

2.5.1 Forward Action Requests

This is 7th periodic VCS verification of the project activity and one FAR open from 2nd CDM verification & previous VCS verifications. Please refer Appendix 2 of this report for details. However, same is open for subsequent verification.

2.6 Eligibility for Validation Activities

VKU has not undertaken any validation activities as a part of the verification and it 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

3.1 Participation under Other GHG Programs

The project is registered under VCS ID 1671 as well as CDM with registration ID 8524[4]. However, Project Proponent has submitted undertaking /15/ that they will not claim same GHG emission reductions of the project from CDM thus ensuring emission reduction generated from the project activity will not be double counted. This was verified further by checking the project webpage of CDM/9/ and hence assessment team accepted that the project is not claiming emission reduction from CDM for the current monitoring period 01-November-2021 to 04-December-2022 (Inclusive of both days). Assessment team independently has also checked other GHG Program registry websites and searched for similar projects but could not find any similar project registered on other registry websites hence accepted by the assessment team. Based on both independent assessment and declaration submitted by PP/15/, the assessment team accepted the claim that there will not be double counting from this project activity for this monitoring period. Assessment team also checked the REC Mechanism database /28/ of India and found that the project activity is not accredited/registered under REC mechanism which was also verified from the REC website (Renewable Energy Certificate Registry of India) (Renewable Energy Certificate Registry of INDIA - Registered RE Generator List (recregistryindia.nic.in). .It was also verified for the International Emissions trading Programs as well. The project is not availing any

[4] https://cdm.unfccc.int/Projects/DB/LRQA%20Ltd1354531234.95/view

IREC benefits. Further, ensured through a declaration letter /15/ from PP that they will not be using the energy generation from this project activity during the current monitoring period. Also, assessment team checked the following registries to confirm the same. 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/15/ 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/

Moreover, a declaration/15/ for the same is checked and found correct by the assessment team.

3.2 Methodology Deviations

During the current monitoring period, no methodology deviation was observed and even during the previous verification /18/ no methodology deviations were observed.

3.3 Project Description Deviations

The project activity entails the installation of 63 GE-made Wind Turbine Generators (WTGs) with a combined generation capacity of 100.8 MW. But just 45 WTGs, or 72 MW, have been put into service till date. The PP has received all necessary approvals, along with the forest clearances for setting up remaining WTGs. There is no impact on project due to non-commissioning of 18 WTGs of project activity and emissions reductions are calculated based on commissioned & operational WTGs.

It is also noted that one WTG (i.e., WTG 49) is not operational since year 2014 due to technical issues. The WTG will be recommissioned once the lucrative tariff will be offered by MSEDCL. PP is not taking deviation for Location no.49 as this is the last verification of the fixed crediting period. The monitoring period end date and crediting period end date coincide with each other. i.e. 04-December-2022. Despite 1 WTG is removed, the project still remains large scale and does not need to be assessed for its baseline and additionality. Hence, even after taking a deviation, deviation cannot be implemented in the subsequent verifications. Hence, acceptable to the VVB Assessment team.

The remaining 18 WTGs (or 28.8 MW) and the non-operational WTG ID 49 will be commissioned once a lucrative tariff rate is introduced by state utility Maharashtra State Electricity Distribution Company Limited (MSEDCL).

Hence, non-implementation of the 18 WTGs deviation is acceptable to the verification team. The same has been approved in the previous verification as well which can be further confirmed from project documents uploaded on VERRA.

3.4 Grouped Project

As per VCS PD version 02 dated 05-April-2017, the project is not a grouped project. This can further be confirmed as per para 3.5.8 of VCS Standard V4.3. Therefore, this section is not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the onsite audit with PP representative, it was concluded that the implemented project is as per the requirement of the registered VCS PD /3/ & CDM PDD/4/ and approved monitoring plan. The total capacity of the project initially aimed to install 100.8 MW by March 2012, But, till now only 72 MW (45 WTGs × 1.6 MW) GE XLE 1.6 MW manufactured by M/s. GE India Industrial private limited has been implemented. During the current monitoring period, it was observed **through breakdown log sheet records/27/** also mentioned in Section 03 and Appendix 2 of

monitoring report/1/ present on site where it was verified that the WTG Location number 49 is not operating due to technical reasons since 2014 & discontinued due to major operating expenses. As a result, it is not in use throughout the time that is being monitored. In the current monitoring period, 44 WTGs are active. From 01-November-2021 to 28-February-2022 generation values for the project activity are zero due to ROW Issue at the plant site. Out of total 9576 hours, the plant was going through a shutdown of 2800 hrs due to the ROW issue which is responsible for 30.07% time lost during the current monitoring period. The breakdown was beyond the control of PP/31/. The plant went through a total breakdown of **3347 hours 48 minutes** during the current monitoring period with a **34.72% decrease** in **emission reductions**. Other than that, the project underwent continuous operation and only scheduled maintenance took place as per the manufacturer's specification/23/ which is acceptable to the assessment team as verified during the interview with PP personnel/25/ Senior engineers/Junior engineer/Assistant manager present at site during onsite visit. This can be further confirmed from the BREAKDOWN DETAILS mentioned in Appendix 2 of MR /1/. Moreover, there is no unforeseen incident which can affect the applicability of the methodology and thus the same is acceptable to the assessment team.

S.No.	Plant Site	Total Hours	Net Operational Hours	Breakdown hours	% Emission reduction decrease
1.	Panama wind energy private limited	9576 hours	6228 hours 12 Minutes	3347 hours 48 Minutes	34.72%

During the current monitoring period, all the WTGs went through a downtime from 01-November-2021 to 28-February-2022 and WTG ID no. 49 is not operational since 2014 due to technical reasons and the project activity has supplied **100,093.18 MWh of electricity**, and thus contributing to **94,949 tCO_2e** GHG reductions. It was confirmed through interviews/25/ with the onsite personnel that the wind power plant was under force majeure. ROW issue refers to the rerouting the transmission lines in the project's nearby area. As per PPA, non-availability of transmission lines is categorized as a force majeure event, therefore no generation is accounted. ROW issue due to which the plant was shutdown from 01-November-2021 to 28-February-2022. The ROW issue was beyond the control of PP which was further confirmed through the declaration letter submitted by the PP which is acceptable to the assessment team. It was further confirmed from credit notes/8/ and invoices/12/ from 01-November-2021 to 28-February-2022 wherein there was no export to the Unified National grid.

Project location is confirmed by the assessment team through the GPS Google software/26/. Moreover, assessment team confirm that the latitudes and longitudes as mentioned in the registered VCS PD /3/ & CDM PDD/4/ are correct.

The WTG wise latitudes and longitudes are confirmed below:

Sr. No	Location No	Coordinate in Lat/Long	
		Latitude	Longitude
1	Location No 1	N17 17 42.4	E73 46 33.3
2	Location No 2	N17 17 51.2	E73 46 32.5
3	Location No 3	N17 17 59.8	E73 46 32.3
4	Location No 21	N17 18 19.7	E73 47 02.1
5	Location No 24	N17 18 36.8	E73 46 59.5
6	Location No 29	N17 19 08.7	E73 47 31.3
7	Location No 30	N17 19 09.1	E73 47 48.7
8	Location No 33	N17 19 18.1	E73 47 27.0
9	Location No 35	N17 18 59.5	E73 47 54.8
1	Location No 36	N17 19 06.7	E73 48 09.0
1	Location No 44	N17 19 00.2	E73 48 37.4
1	Location No 53	N17 18 40.9	E73 48 53.1
1	Location No 54	N17 18 48.5	E73 48 57.0
1	Location No 59	N17 18 32.6	E73 49 17.6
1	Location No 60	N17 18 40.6	E73 49 20.4
1	Location No 39	N17 19 50.4	E73 48 40.3
1	Location No 57	N17 19 12.7	E73 49 08.7
1	Location No 58	N17 19 22.7	E73 49 15.5
1	Location No 4	N17 18 18.2	E73 47 19.8
2	Location No 5	N17 19 52.2	E73 48 58.8
2	Location No 6	N17 19 37.4	E73 48 50.2
2	Location No 7	N17 18 56.2	E73 49 19.9
2	Location No 8	N17 18 43.3	E73 46 48.0
2	Location No 9	N17 18 49.6	E73 46 37.0
2	Location No 10	N17 18 56.3	E73 46 42.8
2	Location No 11	N17 19 02.3	E73 46 49.5
2	Location No 12	N17 19 09.8	E73 46 53.0
2	Location No 13	N17 19 16.1	E73 46 59.4
2	Location No 14	N17 19 22.5	E73 47 05.5
3	Location No 15	N17 19 28.6	E73 47 12.8
3	Location No 16	N17 19 34.8	E73 47 19.5

3	Location No 17	N17 19 39.8	E73 47 28.0
3	Location No 18	N17 19 00.7	E73 49 33.5
3	Location No 19	N17 19 30.8	E73 47 35.6
3	Location No 20	N17 19 36.6	E73 47 45.0
3	Location No 22	N17 18 26.1	E73 47 14.7
3	Location No 23	N17 18 27.7	E73 47 27.0
3	Location No 25	N17 18 45.3	E73 47 00.6
3	Location No 26	N17 18 53.0	E73 47 04.7
4	Location No 27	N17 18 59.8	E73 47 10.7
4	Location No 28	N17 19 06.7	E73 47 18.1
4	Location No 31	N17 18 56.4	E73 50 01.9
4	Location No 32	N17 18 33.6	E73 48 31.8
4	Location No 34	N17 18 10.1	E73 47 24.3
4	Location No 37	N17 18 41.0	E73 48 37.3
4	Location No 38	N17 19 44.8	E73 47 37.7
4	Location No 40	N17 19 39.7	E73 48 33.6
4	Location No 41	N17 19 44.9	E73 48 56.0
4	Location No 42	N17 19 31.8	E73 49 09.3
5	Location No 43	N17 18 54.7	E73 47 25.7
5	Location No 45	N17 19 08.6	E73 48 40.5
5	Location No 46	N17 19 16.4	E73 48 43.0
5	Location No 47	N17 19 19.9	E73 48 52.8
5	Location No 48	N17 19 27.6	E73 48 59.3
5	Location No 49	N17 18 50.6	E73 47 56.6
5	Location No 50	N17 18 20.0	E73 48 54.6
5	Location No 51	N17 18 25.2	E73 48 47.2
5	Location No 52	N17 18 31.6	E73 48 53.1
5	Location No 55	N17 18 57.1	E73 49 02.3
6	Location No 56	N17 19 04.4	E73 49 07.2
6	Location No 61	N17 18 48.5	E73 49 22.2
6	Location No 62	N17 18 49.0	E73 49 40.0
6	Location No 63	N17 18 52.9	E73 49 51.8

Starting date of the operation of the project activity is 22-February-2013 which is the date of commissioning/ commercial operation of the 1st WTG. Assessment team checked the commissioning certificate and confirmed that the Dates of Commission for the WTGs are correct. Assessment team also confirm during the onsite audit/19/ that there is no change in project design and the project is implemented as per the description provided in the registered VCS PD/3/ & CDM PDD/4/. This has been further verified from the previous verification report /18/. Commissioning dates for project activity are given below:

Sr. No	Location No	Date of Commissioning
1	Location No 1	Yet to Commission
2	Location No 2	
3	Location No 3	
4	Location No 21	
5	Location No 24	
6	Location No 29	
7	Location No 30	
8	Location No 33	
9	Location No 35	
10	Location No 36	
11	Location No 44	
12	Location No 53	
13	Location No 54	
14	Location No 59	
15	Location No 60	
16	Location No 39	
17	Location No 57	
18	Location No 58	
19	Location No 4	01-January-2014
20	Location No 5	02-July-2013
21	Location No 6	02-July-2013
22	Location No 7	02-July-2013
23	Location No 8	22-April-2013
24	Location No 9	22-February-2013
25	Location No 10	22-February-2013

26	Location No 11	22-February-2013
27	Location No 12	22-February-2013
28	Location No 13	22-February-2013
29	Location No 14	10-May-2013
30	Location No 15	06-March-2013
31	Location No 16	22-April-2013
32	Location No 17	10-May-2013
33	Location No 18	28-May-2013
34	Location No 19	06-March-2013
35	Location No 20	22-April-2013
36	Location No 22	28-May-2013
37	Location No 23	28-May-2013
38	Location No 25	06-March-2013
39	Location No 26	10-May-2013
40	Location No 27	06-March-2013
41	Location No 28	06-March-2013
42	Location No 31	13-June-2013
43	Location No 32	26-October-2013
44	Location No 34	28-May-2013
45	Location No 37	28-May-2013
46	Location No 38	22-April-2013
47	Location No 40	13-February-2014
48	Location No 41	28-May-2013
49	Location No 42	07-July-2013
50	Location No 43	22-April-2013
51	Location No 45	13-June-2013
52	Location No 46	28-May-2013
53	Location No 47	13-June-2013
54	Location No 48	13-June-2013
55	Location No 49	01-January-2014
56	Location No 50	13-February-2014
57	Location No 51	13-February-2014

58	Location No 52	01-January-2014
59	Location No 55	28-May-2013
60	Location No 56	01-January-2014
61	Location No 61	07-July-2013
62	Location No 62	01-January-2014
63	Location No 63	28-May-2013

The technical parameters have been verified with the name plates as well as with the technical specifications/23/ of WTGs and also cross checked from the technical manual of the Manufacturer. Assessment team confirms that the technical parameters are consistent with the registered CDM PDD/4/ and previous verification report/18/. The major technical specifications of the WTG are as follows:

The project activity comprises WTGs by GE India Industrial private limited GE XLE.

The technical details of the WTG are as follows:

Rotor:	
Diameters	82.5 m
Number of Blades	3
Swept area	5346m^2
Rotor speed range	9-18 rpm
Rotational direction	Clockwise looking downwind
Maximum tip speed	77.2 m/s
Orientation	Upwind
Speed regulation	Pitch control
Aerodynamic brakes	Full feathering
Pitch System:	
Principle	Independent blade pitch control
Actuation	Individual electric drive
Yaw System:	
Yaw rate	0.5 degree/s

The assessment team confirmed through onsite visit/19/ It was observed that the monitoring plan was implemented as per the registered VCS PD /3/ & CDM PDD /4/ and applied methodology ACM0002, Version 12.3.0/8/. The organizational role and responsibility as mentioned in the registered CDM PDD /4/ is followed onsite. Meters are calibrated as per calibration frequency in registered CDM PDD/4/.

Assessment team concludes the following:

a) There are no material discrepancies between project implementation and the project description provided in the registered VCS PD /3/ & CDM PDD/4/.
b) The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters) is appropriate.
c) There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/8/.
d) The GHG emission reductions or removals generated by the project have not been included in any emissions trading program or any other mechanism that includes GHG allowance trading/15/.
e) The project has not received or sought any other form of environmental credit, or has become eligible to do so since validation/32/ or previous verification/18/
f) The project is registered under VCS & CDM; however, PP has submitted the declaration stating/15/, they will not claim 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))/28/
g) 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)** Overall 100,093.18[5] MWh renewable electricity has been supplied to National grid that helps to increase the renewable energy share in the energy mix. As no SDG reporting has been done previously, therefore current and overall project contributions are same/33/.
    - **13.0 i.e. (Tonnes of greenhouse gas emissions avoided or removed)** Due to installation of this project activity PP has prevented the release 94,949 tCO_{2e} into the atmosphere during the current monitoring period. Thus, proving that the project generates eco-friendly, GHG free power which contributes to sustainable

[5] The current and overall project contributions are same because there has never been any prior SDG reporting.

development of the region. As no SDG reporting has been done previously, therefore current and overall project contributions are same/33/.

- **4.4 i.e. (4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill)**- Overall, 10 trainings have been provided by PP along with the technology supplier on soft and technical skills. Since the SDG 4 indicator introduced is in the current MR, the current project contributions and over project contributions are same.

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 and onsite personnel interviews /19/. Moreover, it was confirmed through interviews/25/ with the onsite personnel that the wind power plant was under force majeure, ROW issue due to which the plant was shut down from 01-November-2021 to 28-February-2022. The ROW issue was beyond the control of PP which was further confirmed through the declaration letter /31/submitted by the PP and is acceptable to the assessment team.

4.2 Safeguards

4.2.1 No Net Harm

Being renewable wind power generation project there are no negative impacts on air, water, soil quality and ambience are envisaged due to the implementation of project activity and no potential negative environmental and socio-economic impacts in current monitoring period, in fact project activity contributes positively by providing environment friendly power generation leading to sustainable development of the region. Also, the generation of employment supports upliftment of socio-economic status of region.

The environmental evaluation is not required for wind power projects, as stated in an EIA notification dated 14-September-2006. So, for this project activity, an environmental impact assessment is not necessary. Hence, verification team confirms that there are no any significant impacts due to implementation of project activity on air, water, soil quality and ambience are envisaged due to the project activity.

Additionally, PP highlighted in MR/1/ that there was no influence on the area's air, water, or ecology during the project's constructional, operational and maintenance phases. The project activity helps to strengthen the region's skilled and unskilled labour force, and created jobs for them as PP also emphasised in MR /1/. This was confirmed during on-site interviews /25/ and has improved socio-economic impacts in the project region. The project activity increases the employment rate and standard of living for local residents nearby. As a result, the project activity has not caused any net harm. The project activity does not have any major adverse impacts on environment during its c onstruction or operational phase. VVB has assessed the project activity on site and confirms th

at 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 s ite visit /25/.

4.2.2 Local Stakeholder Consultation

The Project is already registered with CDM and VCS and registered CDM PDD/4/ section E.1 of PDD describe the Local Stakeholder Consultation Process as in-line with CDM & VCS requirement. Meeting with local stakeholder and continuous grievance is a part of stakeholder engagement. In case of grievances/24/, the nature of probable resolution is discussed with the plant head office and implemented by the site in-charge. 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 participation and feedbacks are logged in an attendance register and feedback registers respectively. The overall responsibility lies with Site Incharge 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/24/. For the global stakeholders, the suggestion and the grievance can be submitted to djagdale@panamagroup.com. 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.

The verification team has interacted with local stakeholders during on-site assessment/25/ 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 CDM PDD /4/ and the monitoring report/1/. The monitoring plan laid in the registered CDM PDD /4/ is being followed at the site/19/ and involves just one parameter to be monitored EGfacility,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 PD/3/. The parameter value is sourced from Credit Notes/10/ and Invoices/12/. Proper calibrated meters of 0.2s accuracy class installed at site regularly monitor the import and export value which is monthly aggregated in credit notes. ER sheet/2/ prepared by PP has been reviewed by assessment team thoroughly by cross checking the values of credit notes and

Invoices submitted by PP and found correct including all the formulae and conversions and aggregations.

The expected emission reduction from the project activity(100.8MW) are 1,86,270 tCO2e for the annually but, till now only 72 MW (45 WTGs in number) is implemented and for the current monitoring period 44WTGs in number- 70.4 MW is operational. The estimated emission reduction is 1,45,443 tCO2e for current monitoring period i.e., 01-November-2021 to 04-December-2022 whereas the actual emission reductions achieved were 94,949 tCO2e which is -34.72% lower than what was anticipated. This is due to the overall time of breakdowns which is quite high therefore there is a large impact on the emission reductions generated during the monitoring period/31/. The lower generation of emission reduction is due to force majeure, ROW issue the WTGs were not operational from the month of 01-November-2021 to 28-February-2022. This was further confirmed from credit notes/8/ and invoices/10/ from 01-November-2021 to 28-February-2022 wherein there was no export to the grid and declaration letter/15/ was also verified for the same and the explanation is also provided in section 4.5 of this verification report.

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. 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 Credit Notes issued to PP by State utility /10/& invoices issued by PP to state electricity authority /12/ 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/8/. The calculation method and formulae used in calculating baseline emission is in compliance to the methodology used i.e., ACM0002 Version 12.3.0 /8/. Since project activity is a wind 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 CDM project activity in year y, **$EG_{Facility,y}$** (MWh**)**. This parameter is monitored through controller reading of each WTG and the reading of bulk energy meters installed at substation.

S.No.	Plant Site	Evacuation at Plant Site	Installed at	Evacuation at Substation
1.	Panama wind energy private limited	33kV	Substation	220kV

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:-

Parameter	**Quantity of net electricity supplied by the project (wind) plant/unit to the grid during the monitoring period, $EG_{facility,y}$(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 Nerale Village). Net electricity generated and supplied by the project (wind) plant/unit to the grid = Electricity

			Export to the grid – Electricity Import from the grid. 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 CDM PDD/4/ and monitoring methodology/8/. This was verified by assessment team during desk review and by Team Leader during onsite visit and interviews with site personnel. /19/.	
		Monitoring equipment	Tri vector meter Make- Elster & Schneider Data type: Measured Type of meter: Static type meter (Main & Check). Both are Bidirectional meters. Accuracy Class of meter: 0.2s	
		Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Yes. The accuracy of monitoring equipment is 0.2 valid for the entire range which is as per the registered CDM PDD/4/ and it is consistent as per the PPA/14/.	

		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 CDM PDD/4/. This was assessed by checking the calibration certificate of the energy meters /11/. Thus, the assessment team based on the calibration certificates/11/ states that the accuracy is valid for the entire measuring range. The calibration was carried out by MAHAVITRAN/MSEDCL which is a government agency. The calibration is carried out as per the PPA norms/12/, moreover it is beyond the control of PP. The government agency itself acts as a 3rd party for the PP. Hence, assessment team accepted the calibration certificates/9/ submitted by the PP issued by MAHAVITRAN/MSEDCL which mentioned the accuracy is within the entire measuring range.	
		Calibration frequency /interval:	Calibration frequency of the energy meters is once in 3 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 selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Yes. The calibration frequency is once in 3 years as outlined in the registered CDM PDD/4/ is in accordance with the national standards/17/ i.e Clause 18 of Central Electricity Authority (Installation and Operation of	

			Meters [6]). This was also confirmed during interview with onsite personnel /25/, which is in line with VCS Standard version 4.3/6/ 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-MAHAVITRAN/MSEDCL which is a government agency itself acting as a 3rd party for the PP.And it was verified during onsite personnel interviews/25/.
		Is(are) calibration(s) valid for the whole reporting period?	Yes. Calibration of energy meters/11/ is valid for the current monitoring period for the project activity.
		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 4.3/6/. The calibration is carried out appropriately by MAHAVITRAN/MSEDCL which is a government agency.
		How were the values in the monitoring report verified?	Cumulative value of $EG_{facility,y}$ for entire monitoring period is reported in the monitoring report/1/, and monthly values in

[6] 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 ER calculation sheet/2/. The monthly values were verified from the credit notes/10/ issued by state utility and found to be consistent. Value of this parameter for the current monitoring period was verified as 100,093.18 MWh.
		If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of $EG_{facility,y}$ were further cross checked with the monthly invoices raised by the PP /12/ to state utility and 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/25/ 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 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 and CL#04 were raised and resolved.		

Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the WTGs. Since 100% data was verified, the team can ascertain that the values taken for emission reduction calculation are free from material errors.

Parameters fixed ex ante:

Parameter	Unit	Description	Value
EFgrid,OM,y	tCO2/MWh	Operating Margin CO2 Emission Factor in year y	0.9941 tCO_2/MWh is consistent with the registered CDM PDD/4/.
EFgrid,BM,y;	tCO2/MWh	Build Margin CO2 Emission Factor in year y	0.8123 tCO_2/MWh is consistent with the registered CDM PDD /4/.
EFgrid,CM,y	tCO2/MWh	Combined Margin CO2 Emission Factor in year y	0.9486 tCO_2/MWh is consistent with the registered CDM PDD/4/.

Calibration of meters /11/: During the verification assessment of the project activity, accuracy of all the metering have been checked and found appropriate. The installation and working conditions of the meters were checked during the site inspection and were found to be satisfactory. Details of meters are provided in below table:

Meter and Calibration details for Panama wind energy private limited are as follows-

Location	Feeder No. 1 - 7304	
WTG Connected	8 WTGs (Location no: 4, 8-13, 49)	
Accuracy class	0.2 s	
Type of meter	**Main Meter**	**Check Meter**
Meter Make	Elster	Elster
Model / Type	Alpha A1800	Alpha A1800
Meter Sr. No.	16595568	13813597

Date of calibration	31-March-2021	02-July-2021
Due date of Calibration	30-March-2024	01-July-2024
Meter Change Date	Not Applicable	28-April-2022
New Meter Make	Not Applicable	Schneider
New Model / Type	Not Applicable	ER300P
New Meter Sr. No.	Not Applicable	22001171
New Date of calibration	02-July-2021	25-March-2022
New Due date of Calibration	01-July-2024	24-March-2025

Location	**Feeder No. 2 - 7305**	
WTG Connected	15 WTGs (Location no: 14-17, 19-20, 22-23, 25-28, 34,38,43)	
Accuracy class	0.2 s	
Type of meter	**Main Meter**	**Check Meter**
Meter Make	Elster	Elster
Model / Type	Alpha A1800	Alpha A1800
Meter Sr. No.	16595569	13813601
Date of calibration	31-March-2021	31-March-2021
Due date of Calibration	30-March-2024	30-March-2024

Location	**Feeder No. 3 – 7308**
WTG Connected	10 WTGs (Location no: 5-6, 32, 40-42, 45-48)
Accuracy class	0.2 s

Type of meter	Main Meter	Check Meter
Meter Make	Elster	Elster
Model / Type	Alpha A1800	Alpha A1800
Meter Sr. No.	13813599	13132610
Date of calibration	02-July-2021	02-July-2021
Due date of Calibration	01-July-2024	01-July-2024

Location	Feeder No. 4 – 7309	
WTG Connected	12 WTGs (Location no: 7,18,31,37,50-52,55-56,61-63)	
Accuracy class	0.2 s	
Type of meter	Main Meter	Check Meter
Meter Make	Elster	Elster
Model / Type	Alpha A1800	Alpha A1800
Meter Sr. No.	13132640	13813602
Date of calibration	02-July-2021	02-July-2021
Due date of Calibration	01-July-2024	01-July-2024
Meter Change Date	28-April-2022	Not Applicable
New Meter Make	Schneider	Not Applicable
New Model / Type	ER300P	Not Applicable
New Meter Sr. No.	22001172	Not Applicable
New Date of calibration	25-March-2022	Not Applicable
New Due date of Calibration	24-March-2025	Not Applicable

The energy meter calibration certificates/11/ are checked and found that the calibration details provided in the MR 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-November-2021 to 04-December-2022(inclusive of both start and end 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 MAHAVITRAN/MSEDCL and PP has no control over the same as confirmed through interviews of onsite personnel and PPA signed by the PP/14/ with state utility.

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

The assessment team has verified the monthly credit notes issued by the state utility and confirmed that only the data recorded through main meters is used to calculate net electricity supplied to the grid consequently for ER calculations.

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

GHG Calculations:

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

Baseline Emissions:

The baseline Emissions for a given year is calculated by multiplying the energy baseline with the grid emission factor. The grid in this case would be the 'National Grid'

Formula Used: -

BEy = EFCO2, grid, y x EG BL, y

Where,

EGBL, y = Net electricity supplied to the National grid

EFCO2, grid, y = Baseline emission factor= 0.9486

Ex-ante Parameter:

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

$EF_{grid,CM,y}$: Combined margin CO_2emission 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" (tCO_2e/MWh)

Parameter	Unit	Value
$EG_{facility, y}$	MWh	100,093.18 MWh

$EF_{grid,CM,y}$	tCO2e	0.9486
BEy	=	100,093.18 x 0.9486
	=	94,949 tCO_2e (Round down value)

The verification team attests to the correctness of the formulas and methodologies used to compute baseline emissions. The applied default values, emission factors, and assumptions in the calculations are justified.

The actual emission reductions achieved during the current monitoring period are 34.72% lower than the estimated value because during current monitoring period generation values were zero due to force majeure-ROW issue for four months from 01-November-2021 to 28-February-2022.ROW issue refers to the rerouting the transmission lines in the project's nearby area. As per PPA, non-availability of transmission lines is categorized as a force majeure event, therefore no generation is accounted. The ROW issue (it is the strip of land immediately below and adjacent to a transmission line) was beyond the control of PP and supporting documents are provided by PP which were verified by Assessment Team. It was further confirmed from credit notes/10/ and invoices/12/ from 01-November-2021 to 28-February-2022 wherein there was no export to the grid. It is because there is a major impact on the emission reductions produced over the monitoring period due to the overall time of breakdowns, which is quite high. All of the data were made available and have been checked as required. The means for verifying the parameters' values, which were used to calculate baseline emissions, are mentioned above and are thus accepted by VVB. This comparison is included in the ER sheet along with a justification declaring that the reduced power generation was the result of an unforeseeable situation, a ROW issue, and a factor outside of PP's direct control. There is no need for further justification because the emission reduction is less than the estimated emission reduction. Hence, the VVB accepts it.

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 CONCLUSION

M/s VKU Certification Pvt. Ltd. has performed the seventh verification of the fixed crediting period (05-December-2012 to 04-December-2022 which is inclusive of both dates) reported for the project activity "Wind Based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India". VCS Registry Project ID 1671, for the period 01-November-2021 to 04-December-2022 (Inclusive of both start and end 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 4.3/6/. The project participants of the "Wind Based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India" project is responsible for:

- The preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered CDM PDD version 2.0 of 14-August-2015.
- The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project.

It is the responsibility of VKU to express an independent verification opinion about the project's conformity with the requirements of VCS Standard version 4.3/6/ and GHG program applied, on the reported greenhouse gas emission reductions from the project.

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

- The project has been implemented and operated as per the registered CDM PDD /4/
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 4.3/6/ requirements;
- The monitoring is in place as per the applied baseline and monitoring methodology
- The monitoring plan in the registered CDM PDD/4/ 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 4.0 of 02-February-2023 for the "Wind Based Power Generation by Panama Wind Energy Private Limited in Maharashtra, India" for the period 01-November-2021 to 04-December-2022 (Inclusive of both start and end dates) are fairly stated. The GHG emission reductions are calculated on the basis of approved methodology ACM0002 version 12.3.0/8/ and the monitoring plan included in the registered CDM PDD, version 2.0 of 14-August-2015/4/.

- Hence VKU is able to certify that the emission reduction from the project during the current monitoring period from 01-November -2021 to 04-December-2022 (Inclusive of both start and end dates) amounts to 94,949 tCO_2e.
- The following table shows the Net Emission Reduction from 01-November-2021 to 04-December-2022 (Inclusive of both start and end dates) of fixed crediting period.
- Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
01-November-2021 to 31-December 2021	-646	0	0	-646
01-January 2022 to 04-December-2022	95,595	0	0	95,595
Total	**94,949**	**0**	**0**	**94,949**

The values for the year 2021 are negative due to no generation from 01-November-2021 to 28-February-2022.The plant was shut down hence there was no export from the plant and only import to the plant. It was further confirmed from the credit notes/10/. Hence, 2021 values are negative.

APPENDIX A: <ABBREVIATIONS>

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH4	Methane
CL	Clarification Request
CO2	Carbon dioxide
CO2e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EF	Emission Factor
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MoV	Means of Verification
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
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	15/12/2022
CL#01			Reference	Section of Ver protocol:1.7, 1.11, 3.1 of MR
Description of the Non-Conformance				
1. **Section 1.7 of MR:** PP is requested to elaborate about implementation status of the WTGs which are yet to be commissioned. 2. **Section 1.7 of MR:** PP is requested to justify why WTG Location no.49 was not found onsite? 3. **Section 1.11 of MR:** PP is requested to update, clarify and explain about sustainable development contributions w.r.t. the project. It is referring to wind technology as solar technology. 4. **Section 1.11 of MR:** PP is requested to support training on soft and technical skill by providing documents verifying the same to the VVB. 5. **Section 1.11 of MR:** PP is requested to provide the contribution over project lifetime demonstrating the breakdown over each verification as per the VCS standard version 4.3 & VCS MR Template version 4.1 6. **Section 3.1 of MR:** PP is requested to provide supporting document to help verify technical specifications of WTGs. 7. **Section 3.1 of MR:** PP is requested to send PPA of the mentioned WTGs (31, 45, 47, 48) to VVB.				
1st Response from PP			**Date**	**17/01/2023**
1. Section 1.7 of MR: Location No 1, Location No 2, Location No 3, Location No 21, Location No 24, Location No 29, Location No 30, Location No 33, Location No 35, Location No 36, Location No 44, Location No 53, Location No 54, Location No 59, Location No 60, Location No 39, Location No 57, and Location No 58 are not commissioned yet, they are in still under the implementation stage. 2. WTG Location no.49 is implemented but not operational as on the date. 3. As the project activity is wind energy-based, the word "solar technology" is misspelled in the sentence. The Mentioned Statement has been now corrected in the revised monitoring report. 4. Training Attendance records are now being submitted along with revised Monitoring report. 5. The current and overall project contributions are the same because there has never been any prior SDG reporting. 6. technical specifications of WTGs (WTGs broacher) is now being submitted to verification team. 7. PPA of the mentioned WTGs (31, 45, 47, 48) is now being submitted to VVB along with revised Monitoring Report.				
1st Assessment by Audit Team	**Status**	Open/Closed	**Date**	**19/01/2023**
1. **Section 1.7 of MR:** PP is requested to share supporting documents verifying WTGs are under implementation.				

2. **Section 1.7 of MR:** PP is requested to elaborate the reason with supporting documents as to the non-operation of WTG Location no.49. 3. **Section 1.11 of MR:** Assessment Team verified; PP has updated statement about sustainable development contributions w.r.t. the project**.** Hence, accepted# CLOSED 4. **Section 1.11 of MR:** Assessment Team verified, PP has provided documents of training on soft and technical skill to the VVB**.** Hence, accepted# CLOSED 5. **Section 1.11 of MR:** Assessment Team verify that PP has updated overall prevented quantity of tCO_2 for the current monitoring period. Hence, accepted# CLOSED 6. **Section 3.1 of MR:** Assessment Team verified; PP has provided supporting documents of technical specification of WTGs to VVB. Hence, accepted# CLOSED 7. **Section 3.1 of MR:** Assessment Team verified, PP has provided PPA of WTGs location no. 31, 45, 48. Hence, accepted# CLOSED

2nd Response from PP	Date	25/01/2023
1. Mentioned location are on hold due to low tariff rate at the location. Once the tariff will be lucrative, PP will commission these pending locations. As of now there is no evidence to prove this statement. A undertaking is being provided to VVB. 2. The WTG ID number 49 is not operating due to technical reasons since 2014 and discontinued due to major operating expenses. Once a lucrative tariff introduces by State then PP is planning to operate WTG 49 and rest of the non-commissioned sites. A undertaking is being provided to VVB		

2nd Assessment by Audit Team	Status	Closed	Date	31/01/2023
1. **Section 1.7 of MR:** PP has submitted a declaration stating the WTGs are on hold due to low tariff rate at the location. WTGs will be commissioned once rates will be lucrative. Hence, accepted by the VVB and remains a FAR for further verifications. # CLOSED 2. **Section 1.7 of MR:** VVB found during onsite visit that WTG no.49 was not present, same when clarified from the client, the response included the non-operation of WTG no.49 due to technical reasons and a declaration of the same has been provided by the client. Hence, accepted by the VVB. # CLOSED **CL#01 Closed.**				

Type	Date	15/12/2022
CL#02	Reference	Section of Val/Ver protocol: APPENDIX 1, 2.2 of MR
Description of the Non-Conformance		
1. **Appendix 1 of MR:** PP is requested to provide updated calibration certificate of both meters (main and check) of feeder no. 2 (7305) to the VVB.		

2. **Appendix 1 of MR:** As per site visit it was found check meter of feeder no. 1 (7304) and main meter of feeder no. 4 (7309) have been replaced. Hence PP is requested to provide evidence of meter replacement. 3. **Appendix 1 of MR:** PP is requested to clarify the due date for calibration date, according to CDM project design document version 02, dated 14 August 2015 "meters are calibrated by MSEB at-least once in three years" 4. **Appendix 1 of MR:** PP is requested to mention model of all the meters. 5. **Appendix 2 of MR:** PP is requested to provide elaborate breakdown details for the current monitoring period. 6. **Section 2.2 of MR:** PP is requested to provide CSR activities in local language as well as English.

1st Response from PP	Date	17/01/2023
1. Updated calibration certificates of both meters (main and check) of feeder no. 2 (7305) are being provided to the VVB. 2. Meter replacement certificates are now being provided to VVB. 3. Calibration date has been updated as per CDM PDD and the latest Calibration are being provided to VVB. 4. Model of all the meters is now mentioned in the Revised MR. 5. Breakdown details for the current monitoring period mentioned in the Revised MR. 6. No CSR Activity has taken place during the current monitoring period.		

1st Assessment by Audit Team	Status	Open/Closed	Date	19/01/2023
1. **Appendix 1 of MR:** PP has not provided updated calibration certificate of both main and check meter of feeder no. 2 (7305) to the VVB. Hence, assessment team could not verify the same# OPEN 2. **Appendix 1 of MR:** Assessment Team verified, PP has submitted supporting document of meter replacement but PP has not incorporated the Sr. No. of feeder no. 1 and 4 in table of MR. #OPEN 3. **Appendix 1 of MR:** Assessment Team verified that PP has updated validity of meter calibration in this table as per CDM project design document version 02, dated 14 August 2015. Hence, accepted# CLOSED 4. **Appendix 1 of MR:** PP has mentioned model type of all meters yet it doesn't match the submitted calibration records. Hence, PP is requested to update accordingly. #OPEN 5. **Appendix 2 of MR:** Assessment Team verified that PP did not update the calculations as per the breakdown details provided to the VVB. # OPEN 6. **Section 2.2 of MR:** Assessment Team could not verify that PP has submitted CSR activity in local language as well as English to the VVB# OPEN				

2nd Response from PP	Date	25/01/2023
1. Appendix 1 of MR: The main and check meter of feeder no. 2 (7305) calibration details are being incorporated. Revised MR and Updated Calibration certificates being provided to VVB. **2. Appendix 1 of MR:** There is no any meter is replaced of Feeder no. 1 and feeder no. 4, Latest meter calibration certificates are provided to VVB and same details are being mentioned in revised MR.		

4. Appendix 1 of MR: Meter details (Serial no., Model, Type, Class) has been updated as per updated calibration reports and same is being provided to VVB. **6. Section 2.2 of MR:** During the current monitoring period no CSR activity has been done.				
2nd Assessment by Audit Team	**Status**	Open/Closed	**Date**	**31/01/2023**
1. Appendix 1 of MR: Assessment Team Verified, PP has not provided updated calibration certificate of both main and check meter of feeder no. 2 (7305) to the VVB. Hence, assessment team could not verify the same# OPEN **2. Appendix 1 of MR:** Assessment Team Verify during Onsite visit there was meter replacement of check meter for feeder no. 1(7304) and main meter of feeder no. 4(7309) so PP is requested to update meter calibration table in MR as per submitted supporting documents to the VVB. #OPEN **4. Appendix 1 of MR:** Assessment Team Verify that PP has updated Meter details (Serial no., Model, Type, Class) in MR. Hence, accepted #CLOSED **5. Appendix 2 of MR:** Assessment Team verified that PP did not update the calculations as per the breakdown details provided to the VVB. # OPEN **6. Section 2.2 of MR:** Assessment Team Verified, PP did not conduct any CSR activities. Hence accepted# CLOSED				
3rd Response from PP			**Date**	**02/02/2023**
1. Appendix 1 of MR: The updated calibration certificate of both the main and check meter of feeder no. 2 (7305) is being provided to the VVB. **2. Appendix 1 of MR:** The meter calibration table has been updated in MR as per the submitted supporting documents. **5. Appendix 2 of MR:** The breakdown details are being updated and revised MR is being provided to the VVB.				
3rd Assessment by Audit Team	**Status**	Closed	**Date**	**03/02/2023**
1. Appendix 1 of MR: Assessment Team verified that PP has updated calibration certificate of both the main and check meter of feeder no. 2 (7305). Hence, accepted #CLOSED **2. Appendix 1 of MR:** Assessment Team verified that PP has updated calibration record table in monitoring report. Hence, accepted #CLOSED **5. Appendix 2 of MR:** Assessment Team verified that PP has updated breakdown details throughout monitoring report. Hence accepted #CLOSED				

CL#02 Closed.

Type			**Date**	**15/12/2022**
CL#03			**Reference**	Section of Val/Ver protocol; ER Sheet
Description of the Non-Conformance				
1. **In ER sheet:** PP is requested to provide credit notes and Invoices of month of October and November 2022 and also provided DGR of four days of December 2022 to the VVB.				
1st Response from PP			**Date**	**17/01/2023**
Credit notes and Invoices of the months of October 2022 and November 2022 are provided and the DGR of four days of December 2022 to mentioned in the revised Emission reduction sheet.				
1st Assessment by Audit Team	**Status**	Open/Closed	**Date**	**19/01/2023**
1. **In ER sheet:** Assessment Team verified, PP has provided credit notes and Invoices of month October and November 2022 but could not verify DGR for four days of December 2022, so PP is requested to provide a Daily generation report for the month of December. #OPEN				
2nd Response from PP			**Date**	**25/01/2023**
1. Daily Generation report for December months is being provided to VVB along with the revised Monitoring report.				
2nd Assessment by Audit Team	**Status**	Closed	**Date**	**31/01/2023**
1. **In ER Sheet:** Assessment Team verify that PP has submitted Daily Generation report for month of December. Hence accepted #CLOSED. **CL#03 Closed.**				

Type	**Date**	**19/01/2023**
CL#04	**Reference**	Section of Val/Ver protocol; ER Sheet

Description of the Non-Conformance				
1. **In ER sheet:** PP is requested to mention invoice values of four days and provide Daily generation report of project activity for the month of December. #OPEN 2. **MR:** PP is requested to clarify throughout MR, whether it should be Indian Grid or Unified national grid. #OPEN 3. **In Section 2.2 of MR:** PP is requested to provide some evidences or supporting documents of positive feedback regarding site operation.				
1st Response from PP			**Date**	**25/01/2023**
1. Due to a mismatch in the meter reading date and end date of Monitoring period, the Export values have been apportioned using the DGR values. As a conservative approach, full-month import values have been considered. 2. Unified national grid is being used throughout the Revised Monitoring Report. 3. There were no comments logged by the local stakeholders for the current monitoring periods.				
1st Assessment by Audit Team	**Status**	Open/Closed	**Date**	**31/01/2023**
1. In ER sheet: Assessment team Verified, PP has mentioned the values for the full month of December PP is requested to either the change the end date or change the invoice value as per the no. of days in monitoring period. #OPEN **2. MR:** Assessment Team verified that PP has updated throughout the MR as Unified national grid. Hence, accepted #CLOSED. **3. In Section 1.11 of MR:** PP is requested to explain if description of SDG 13 is correct or not. #OPEN **4. In Section 2.2 of MR:** Assessment Team verified that PP did not receive any comments by the local stakeholders for the current monitoring period. Hence, accepted #CLOSED				
2nd Response from PP			**Date**	**02/02/2023**
1. In ER sheet: The end date has been changed in the ER sheet and a revised ER sheet is being provided to VVB. **3. In Section 1.11 of MR:** The description of SDG 13 is correct as the SDG target is 13.0 and the indicator name is approved by Verra only, the justification snapshot mail is being forwarded.				
3rd Assessment by Audit Team	**Status**	Closed	**Date**	**03/02/2023**
1. In ER sheet: PP has changed end date in ER Sheet for invoices verified by assessment Team. Hence accepted #CLOSED **3. In Section 1.11 of MR:** Assessment Team verified that PP has added correct description of SDG 13.0 in monitoring report. Hence, accepted #CLOSED				

CL#04 Closed.

Type		**Date**	**15/02/2023**
CL#05		**Reference**	Section of Val/Ver protocol: 1.1, 1.3, 1.5, 2.2, 4.1, 4.3, 5.4 of MR
Description of the Non-Conformance			
1. **Section 2.1 of MR:** How are environmental effects during maintenance activity mitigated or minimised as per section 3.17.2 of the VCS standards 2. **Section 3.1 of MR:** Since approximately only 2 years are left for the crediting period to end, PP is requested to clarify why a project design change deviation is not envisaged? 3. **Section 3.1 of MR:** Since the WTG is not part of the bundle, which effectively reduces the project size, PP is requested to clarify why a deviation is not taken as per section 3.19 of the VCS standards?			
1st Response from PP		**Date**	15/02/2023
1. **Section 2.1 of MR:** No net harm assessment is required during project development and implementation process. Since the project is already implemented and the maintenance of the WTG having almost zero impact on local environment. However, during the current monitoring period, no major maintenance occurred. Details are in Appendix 2 in MR. 2. **Section 3.1 of MR:** 18 WTGs are under the implementation stage and on hold due to low tariff rate at the location. After the announcement of a lucrative tariff by the State Board, PP will commission pending locations for the same reason project design change deviation is not envisaged. The justification is added in response to FAR 01 that government is planning to ban reverse bidding and roll out fixed tariff for wind turbine, when the new tariff regime will roll out, the WTG will be commissioned. Therefore, they are not removed from the project activity. https://www.moneycontrol.com/news/environment/govt-revamps-auction-norms-bans-reverse-bidding-for-wind-energy-projects-9856271.html Also, PP has already taken a Project description deviation which can be further confirmed from the previous verification report uploaded on VERRA. 3. **Section 3.1 of MR:** PP intends to continue using the WTD ID number 49 even after the State Board announced a profitable tariff. PP has not yet deviated from its plan and is waiting for the announcement of a profitable tariff.			
1st Assessment by Audit Team	**Status**	Closed	**Date**	16/02/2023

1. **Section 2.1 of MR:** Assessment Team confirmed that no major maintenance occurred during the current monitoring period. Hence, accepted. 2. **Section 3.1 of MR:** Assessment Team confirmed that PP has justified regarding WTG implementation. Also, PP has taken a Project description deviation regarding the same as confirmed from the previous verification report uploaded on VERRA. Moreover, a FAR has been raised regarding the same. Hence, accepted. 3. **Section 3.1 of MR:** Assessment Team confirmed that the PP is awaiting for a profitable tariff for WTG ID number 49. Hence, accepted. **CL#05 Closed.**

Type	**Date**	**15/12/2022**
CAR#01	**Reference**	Section of Val/Ver protocol: 1.1, 1.3, 1.5, 2.2, 4.1, 4.3, 5.4 of MR
Description of the Non-Conformance		
1. **Section 1.1 of MR:** PP is requested to update the font size as per the VCS MR template V4.1. 2. **Section 1.3 of MR:** PP is requested to remove the instruction as per MR template version 4.1. 3. **Section 1.3 of MR:** PP is requested to remove the instruction as per MR template version 4.1. 4. **Section 1.5 of MR:** PP is requested to update the reference as section 1.5 of MR does not explain about commissioning details of WTGs. 5. **Section 2.2 of MR:** As per the MR Template version 4.1, PP is requested to mention the date of local stakeholder consultation along with date of announcement of the same. PP is also requested to mention procedures used for documenting the outcome of local stakeholder consultation. 6. **Section 4.1 of MR:** PP is requested to update footnote in section 4.1 of MR. 7. **Section4.3 of MR:** PP is requested to elaborate and mention on the emergency preparedness on the project site. 8. **Section 5.4 of MR:** PP is requested to update the value of baseline emission as per section 5.1 of MR.		
1st Response from PP	**Date**	**17/01/2023**
1. **Section 1.1 of MR:** The font size has been updated in the revised MR as per the VCS MR template V4.1. 2. **Section 1.3 of MR:** The instruction has been removed as per MR template version 4.1. 3. **Section 1.3 of MR:** The instruction has been removed as per MR template version. 4. **Section 1.5 of MR:** The Section has been updated and the typo error has been corrected in revised MR. 5. **Section 2.2 of MR:** Procedures used for Stakeholder meeting is now being updated in revised MR. 6. **Section 4.1 of MR:** Footnote in section 4.1has been corrected in revised MR.		

7. **Section 4.3 of MR:** Emergency preparedness on the project site has been updated in revised Monitoring report. 8. **Section 5.4 of MR:** The baseline emission values has been updated in Monitoring report as per Emission reduction sheet.

1st Assessment by Audit Team	Status	Closed	Date	19/01/2023

1. **Section 1.1 of MR:** Assessment Team Verified, PP has updated font size as per MR template version 4.1. Hence, accepted# CLOSED
2. **Section 1.3 of MR:** Assessment Team verified; PP has removed the instruction as per MR template version 4.1. Hence, accepted# CLOSED
3. **Section 1.3 of MR:** Assessment Team verified; PP has removed the instruction as per MR template version 4.1. Hence, accepted# CLOSED
4. **Section 1.5 of MR:** PP has updated section 1.5 in MR verified by VVB.
5. **Section 2.2 of MR:** Assessment Team verified; PP has mentioned information as per MR template version 4.1. Hence, accepted# CLOSED
6. **Section 4.1 of MR:** Assessment Team verified; PP has mention updated footnote of CEA database. Hence, accepted# CLOSED
7. **Section 4.3 of MR:** Assessment Team verified that PP has mention emergency preparedness of project activity. Hence, accepted# CLOSED
8. **Section 5.4 of MR:** Assessment Team Verified, PP has updated the value of baseline emission as per section 5.1 of MR. Hence, accepted# CLOSED

CAR#01 Closed.

Type	Date	19/01/2023
CAR#02	**Reference**	Section of Val/Ver protocol; Section 1.5, 1.11 of MR

Description of the Non-Conformance

1. **Section 1.5 of MR:** PP is requested to clarify the statement "PP is availing VCU benefits under current monitoring period i.e., 01-January-2021 to 31-October-2021".
2. **Section 1.10 of MR:** As per instructions to fill VCS MR v4.1 PP is requested "provide a list of all and any other programs under which the project is eligible to create another form of GHG-related environment credit". PP is requested to clarify how this section is in line with the requirement of the guidance.
3. **Section 1.11 of MR:** PP is requested to update table no. according to mentioned information of sustainable development contributions.
4. **Section 3.1 of MR:** PP is requested to provide any information that may impact the GHG emission reductions or removals.
5. **Section 5.4 of MR:** PP is requested to expand ROW throughout the MR. PP is requested to clarify. As per registered PD the PLF mentioned is 22.238%, while the PLF achieved during this MP is 14.567%, which is 34.72% lower than the registered PD. PP is requested to clarify the reasons for the reduction in PLF.

1st Response from PP	Date	25/01/2023

1. **Section 1.5 of MR:** PP is availing VCU benefits under current monitoring period i.e. 01-November-2021 to 04-December-2022. Typo Error has been corrected,
2. **Section 1.10 of MR:** The project has not included in National or International Emission Trading Programs and Other Binding Limits. The project activity is not availing any REC benefits and PP does not avail other forms of environmental credit for the same crediting period under consideration. The project is now only eligible to create National Renewable Energy Certificate in which PP has not applied. Same section also has been updated in Revised MR.
3. **Section 1.11 of MR:** Table no. according to mentioned information of sustainable development contributions has been updated in Revised MR.
4. **Section 3.1 of MR: D**uring the current monitoring period which impact the GHG emission reductions or removals has been added in revised MR.
5. **Section 5.4 of MR:** The ROW issue is explained in Revised MR and PLF during the current monitoring is 14.52 %.

1st Assessment by Audit Team	Status	Open/Closed	Date	31/01/2023

1. **Section 1.5 of MR:** Assessment Team verified that PP has updated the statement "PP is availing VCU benefits under current monitoring period i.e., 01-January-2021 to 31-October-2021" in MR. Hence, accepted #CLOSED.
2. **Section 1.10 of MR:** PP has updated as per instructions of VCS MR v4.1 in section 1.10 of MR verified by VVB. Hence, accepted #CLOSED.
3. **Section 1.11 of MR:** Assessment team verified that PP has Updated table no. according to mentioned information of sustainable development contributions. Hence, accepted# CLOSED.
4. **Section 3.1 of MR:** PP has added 'impact the GHG emission reductions or removals' in the monitoring report and it is verified by VVB. Hence, accepted #CLOSED.
5. **Section 5.4 of MR:** Assessment Team verified that PP has expanded about ROW issue and PLF during the current monitoring period. Still further explanation is required on the same. #OPEN

2nd Response from PP	Date	02/02/2023

Section 5.4 of MR: ROW issues refer to "Rerouting the transmission lines in the project's nearby area. As per PPA non-availability of transmission lines is categorized as a force majeure event, therefore no generation is accounted." The same statement is now being explained in the revised MR. PLF during the current monitoring is 14.52 % same is incorporated in the revised ER and MR.

3rd Assessment by Audit Team	Status	Closed	Date	03/02/2023

5. Section 5.4 of MR: Assessment Team verified that PP has expanded about ROW issue and PLF during the current monitoring. Hence, accepted #CLOSED

CAR#02 Closed.

Type			Date	31/01/2023
CAR#03			Reference	Section of Val/Ver protocol; MR and ER Sheet
Description of the Non-Conformance				
1. MR: PP is requested to update font colour as per VCS MR template version 4.1. **2. Section 1.10 in MR:** PP is requested to add the information under the relevant section as per VCS MR template v4.1. **3.Section 5.4 of MR:** PP is requested to correct the emissions reductions calculations throughout the MR. **4. ER Sheet**: PP is requested to update the Net Generation value as per credit note submitted to the VVB.				
1st Response from PP			**Date**	02/02/2023
1. MR: The font color has been corrected as per VCS MR template version 4.1. **2. Section 1.10 in MR:** The information under relevant section as per VCS MR template v4.1 has been added in the revised MR. **3. Section 5.4 of MR:** The emissions reduction calculations have been updated throughout the MR and ER sheet. **4. ER Sheet**: The Net Generation value as per credit note is being updated and Revised MR is being submitted to the VVB.				
1st Assessment by Audit Team	**Status**	Closed	**Date**	03/02/2023
1. MR: Assessment Team verified that PP has updated font color as per VCS MR template version 4.1. Hence, accepted # CLOSED **2. Section 1.10 in MR:** Assessment Team verified that PP has added information under relevant section 1.11 of MR. Hence, accepted #CLOSED **3. Section 5.4 of MR:** PP has updated emission reduction calculation throughout the MR and ER sheet. Hence, accepted #CLOSED **4. ER Sheet**: Assessment Team verified that PP has corrected net generation value as per credit note in ER Sheet. Hence, accepted #CLOSED **CAR#03 Closed.**				

Type	Date	15/02/2023

CAR#04	Reference	Section of Val/Ver protocol: 1.1, 1.6, 1.10, 1.11, 2.2, 3.1,5.4 of MR

Description of the Non-Conformance

1. **Section 1.1 of MR:** PP is requested to mention the type of crediting period, the monitoring period number.
2. **Section 1.6 of MR:** Please provide references to the same.
3. **Section 1.10 of MR:** Reference to IREC is not provided under this section
4. **Section 1.11 of MR:** This statement directly contradicts the requirement under the guidance document, which states that irrespective of reporting, the cumulative contribution should be mentioned.
5. **Section 2.2 of MR:** Sentence repeated twice
6. **Section 3.1 of MR:** Please express it as the percentage of total operating hours of operation of the project to provide context.
7. **Section 5.4 of MR:** Please compare this with the stated PLF in the registered PD
8. **Appendix 1 of MR:** Please total the WTGs against this row

1st Response from PP	Date	15/02/2023

1. **Section 1.1 of MR:** The crediting period and monitoring period number has been mentioned in the revised MR.
2. **Section 1.6 of MR:** References have been added in the revised MR.
3. **Section 1.10 of MR:** References have been added in the revised MR
4. **Section 1.11 of MR:** As no SDG reporting has been done previously, therefore current and overall project contributions are the same and supporting documents have been submitted with revised MR.
5. **Section 2.2 of MR:** The repeat sentence has been deleted.
6. **Section 3.1 of MR:** Percentage of total operating hours of operation of the project has been added in the revised MR.
7. **Section 5.4 of MR:** The observed PLF during the current monitoring period generating month (including the prior imports) is 14.52 % which is 7.721 % less than PLF considered in registered PD, Same is incorporated in the revised MR.
8. **Appendix 1 of MR:** Total WTGs number has been written in the calibration table.

1st Assessment by Audit Team	Status	Closed	Date	16/02/2023

1. **Section 1.1 of MR:** Assessment Team confirmed that the crediting period and monitoring period number have been mentioned in the revised MR. Hence, accepted.
2. **Section 1.6 of MR:** Assessment Team confirmed that the references have been added in the revised MR. Hence, accepted.
3. **Section 1.10 of MR:** Assessment Team confirmed that the references have been added in the revised MR. Hence, accepted.
4. **Section 1.11 of MR:** Assessment Team confirmed that as no SDG reporting has been done previously, therefore current and overall project contributions are the same and supporting documents have been submitted with revised MR. Hence, accepted.
5. **Section 2.2 of MR:** Assessment Team confirmed that the repeat sentence has been deleted. Hence, accepted.

6. **Section 3.1 of MR:** Assessment Team confirmed that the percentage of total operating hours of operation of the project has been added in the revised MR. Hence, accepted. 7. **Section 5.4 of MR:** Assessment Team confirmed that the observed PLF during the current monitoring period generating month (including the prior imports) is 14.52 % which is 7.72 % less than PLF considered in registered PD, Same has been incorporated in the revised MR. Hence, accepted. 8. **Appendix 1 of MR:** Assessment Team confirmed that the total WTGs number have been added in the calibration table. Hence, accepted. **CAR#04 Closed.**

Type			**Date**	**31/01/2023**
FAR#01			**Reference**	Section of Val/Ver protocol; MR
Description of the Non-Conformance				
1. During the verification it was observed that out of the proposed 63 WTGs only 45 WTGs have been commissioned and further 18 WTGs referring to the project are still under the implementation stage and also observed that the WTG ID number 49 is not operating due to technical reasons since 2014, FAR is open. PP to justify if downsizing of the project activity due to any specific reason has any significant impact on the additionality of the project ?				
1st Response from PP			**Date**	**02/02/2023**
As the WTG ID number 49 is not operating due to technical reasons since 2014 and was discontinued due to major operating expenses. There is no impact on the additionality of the project activity due to the non-commissioning of WTGs as non-commissioning of WTGs doesn't add up to the electricity generation while the expenses to maintain site, transmission lines are still in place. The leftover 18 WTGs and WTG 49 will be commissioned after the formalization of a better tariff rate by the electricity regulatory body. Initially, a tariff rate was fixed before the commissioning of the project, but after the introduction of the tariff reverse bidding lowers the final tariff, resulting in the financial stability of the project. The Indian government is in moving toward scrapping reverse bidding[7] and once the new regulation finalised, the leftover WTGs will be commissioned.				
1st Assessment by Audit Team	**Status**	Open	**Date**	**03/02/2023**

[7] https://www.moneycontrol.com/news/environment/govt-revamps-auction-norms-bans-reverse-bidding-for-wind-energy-projects-9856271.html

The assessment team confirms that the reason mentioned is applicable. Moreover, the FAR is approved as a project description deviation in the previous verification which can be further confirmed from the documents uploaded on VERRA. The deviation is still open and thus carried further in this monitoring period. However, the FAR is still open for subsequent verifications to evaluate the implementation of the remaining WTGs.

APPENDIX C: COMPETENCE STATEMENT

Team Leader-

Certification Pvt. Ltd. VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Vivek Kumar Ahirwar
Nationality	Indian
Countries of Experience	India, Madagascar, Thailand, Indonesia, Bangladesh, Nepal, Ghana, Uganda, Kenya etc
Education Qualification	B.E. (Mechanical Engineering) M. Tech (Energy Management)
Year of Experience	10 Years +
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	TA 1.1 - Thermal energy generation and Renewables TA 2.1 - Process GHG Emission Expert TA 6.1 - Solid waste and wastewater TA 6.2 - Manure

Roles

Team Leader	YES
Validator	YES
Verifier	YES
Financial Expert	YES
Technical Reviewer	YES
TA Expert (1.1, 2.1, 6.1, 6.2)	YES

Validator/Verifier-Trainee

Certification Pvt. Ltd. VKU.F50W. Competence Statement

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
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	NA

Roles

Team Leader	NO
Validator	NO
Verifier - Trainee	YES
Financial Expert	NO
Technical Reviewer	NO
TA Expert	NO

Project Trainee-

COMPETENCE STATEMENT

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

Roles

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

Technical Reviewer-

Certification Pvt. Ltd. VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Sanjay Kumar
Nationality	Indian
Countries of Experience	India
Education Qualification	B.E. (Civil Engineering) M. Tech (Environmental Engineering)
Year of Experience	20 Years +
Area of Expertise	Climate Change & Environment Sustainable Development GHG Footprints
Eligible Sectoral Scope	TA 1.1 - Thermal energy generation and Renewables TA 1.2 - Renewables TA 3.1 - Energy Demand TA 6.1 - Construction TA 13.1 - Solid waste and wastewater TA 13.2 - Manure

Roles

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