



86 MW HYDRO PROJECT IN HIMACHAL PRADESH

Document Prepared By



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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 (hereafter referred as EKI), has verified the greenhouse gas emission reductions reported for the project activity “86 MW Hydro Project in Himachal Pradesh” (VCS ID 93) in India, covering monitoring period from **01-November-2021 to 31-October-2022** (Inclusive of both start and end dates) under third crediting period¹ from **05-July-2021 to 04-July-2031** (Inclusive of both dates) with regard to the relevant requirements for VCS activities.

The purpose of the verification is to have an independent review of ex-post determination of the monitored reductions in GHG emission reductions and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data used to confirm the reductions in anthropogenic emissions by sources is sufficient, definitive and presented in a concise and transparent manner.

The verification scope of the project is:

- To verify that the project is implemented as described in the registered VCS Joint PD&MR/3/.

¹ This is the third renewable crediting period as per the registered VCS Joint PD&MR Version 06 dated 19-July-2022

- To assess the project's compliance with other relevant rules including the host country legislation.
- To confirm that the monitoring system is implemented and fully functional to generate voluntary carbon units without any double counting.
- 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.
- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan of registered VCS Joint PD&MR/3/.
- 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 evidences.

Verification was conducted using VKU's procedures in line with the requirements specified in the VCS Program Guide version 4.2/4/, VCS Standard Version 4.3/5/, 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.

VKU followed the rule-based approach to perform this verification. During the course of verification, related to operation, monitoring and GHG emission reduction calculation of the VCS project activity in relation to all relevant VCS requirements for the project activity and the applied baseline and monitoring methodology and a total of **10 findings** were raised, which includes: **07 Corrective Action Request (CARs); 03 Clarification Requests (CLs); 00 FAR was raised**. All the raised findings were raised and successfully resolved by the PP. The same has been discussed in Appendix B of this verification report.

The verification team ensured that the reported emission reductions are complete and accurate in accordance with applicable VCS requirements in order to be certified therefore the verification team has detected no further uncertainties.

The GHG emission reductions were calculated on the basis of the approved methodology (ACM0002)"Grid Connected Electricity Generation from Renewable Sources"-Version 20.0/7/ and Tool to calculate the emission factor for an electricity system; Version 7.0 /29/ and the monitoring plan included in the registered VCS Joint PD&MR/3/ version 06 dated 19-July-2022.

In conclusion, it is VKU's opinion that the project activity "86 MW Hydro Project in Himachal Pradesh" (VCS ID 93) in India, meets all relevant requirements for VCS standard and guidelines and correctly applies the baseline and monitoring methodology (ACM0002)"Grid Connected Electricity Generation from Renewable Sources"-Version 20.0/7/. The monitoring system is in place and the emission reductions are calculated without any material misstatement.

Hence, VKU is able to certify that the emission reductions from the project during the monitoring period from **01-November-2021 to 31-October-2022** (Inclusive of both start and end dates) under

third crediting period from **05-July-2021 to 04-July-2031** (Including both dates) amount to **251,283 tCO₂e**.

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1 INTRODUCTION

1.1 Objective

M/s EKI Energy Services Limited (hereafter referred as EKI) Commissioned M/s VKU Certification Pvt Ltd (here after referred as VKU) to carry out the second verification of the project “86 MW Hydro Project In Himachal Pradesh” (VCS ID 93) in India for the period from **01-November-2021 to 31-October-2022** (Inclusive of both start and end dates) under third crediting period from 05-July-2021 to 04-July-2031 (Including both 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 4.2/4/, VCS Standard Version 4.3/5/ and GHG program applied, on the basis of the registered VCS Joint Project Description and Monitoring Report version 06 /3/.

This is the second verification under third crediting period for a period of twelve months i.e., from **01-November-2021 to 31-October-2022** (Inclusive of both start and end dates).

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the registered VCS Joint project description and monitoring report (VCS Joint PD&MR) version 06 /3/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place.
- Monitoring report and other supporting documents are complete.
- The data is recorded and stored as per the monitoring methodology/7/ and registered monitoring plan.
- To confirm that the monitoring system is implemented and fully functional to generate Verified Carbon units (VCUs) without any double counting.
- To establish that the data reported are accurate, complete, consistent, transparent and free of any material error or omission by checking the monitoring records and the emissions reduction calculation.

1.2 Scope and Criteria

The verification scope is:

- To verify that the project is implemented as described in the registered VCS Joint PD&MR/3/
- To assess the project's compliance with other relevant rules including the host country legislation.
- To confirm that the monitoring system is implemented and fully functional to generate voluntary carbon units without any double counting.
- 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.
- 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 verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

The project is assessed against the requirements of VCS Standard version 4.3/5/, VCS Program Guide version 4.2/4/, VCS Validation and Verification Manual version 3.2/21/ and related rules and guidance. VKU has, based on the recommendations in the latest version of CDM Validation and Verification Standard/22/, VCS Validation and Verification Manual 3.2/21/ employed a rule-based approach (as criteria) in the verification, focusing on the identification of significant reporting rules and the reliability of project monitoring.

The method and criteria used for verification consisted of the following phases:

- Completeness check and desk review;
- Site visit and Onsite interviews with stakeholders;
- Resolution of outstanding issues and issuance of final verification report

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 report.

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 verification report is based on the Monitoring report /01/, registered VCS Joint PD&MR /3/ and supporting documents /10//11//12//13//14//15//16/made available to the assessment team and further information is also collected through performing interviews.

The technical review was performed by a technical reviewer qualified in accordance with VKU's qualification procedure.

The verification team and the technical reviewer team consist of the following personnel:

Role/Qualification	Last Name	First Name
VCS Team Leader & Technical Expert 1.2	Chouhan	Rakesh
Technical Reviewer & Technical Expert 1.2	Kumar	Sanjay
Validator/Verifier-Trainee	Chauhan	Shivani
Project Trainee	Tripathi	Apoorva

1.4 Summary Description of the Project

The project activity is a green field activity with the objective to generate clean electricity by using potential energy of water which is a renewable source of energy. This Run-of-the river project is located at Jari village in Malana town of Kullu district, Himachal Pradesh, India and sell the power generated to the power trading company, which is confirmed from registered VCS Joint PD&MR/3/, registered Joint validation and verification report /18/, JMRs issued by the HPSEBL/8/, Invoices issued by MPCL /12/, PPAs/14/ and interview with PP/24/. The project activity generates electricity using hydro power and converts it into kinetic energy using turbines, which drives the alternators to generate energy. The project has been developed by M/s Malana Power Company Limited having registered office at Noida, India (herein after referred as MPCL). MPCL is a private organisation, established with an objective of developing new hydro projects across the country.

The implementation of project activity ensures energy security, diversification of the grid generation mix a sustainable growth of the electricity generation sector in India. The project being a renewable energy generation activity, it leads to removal of fossil fuel dominated electricity generation. The project activity results in reductions of greenhouse gas (GHG) emissions that are real, measurable, and verifiable and also plays beneficial role in the mitigation of climate change.

The total installed capacity of the project is $(2 \times 43) = 86$ MW and the power produced displaces an equivalent amount of power from the grid, which is fed mainly by fossil fuel fired power plants. The project plant has 2 units (2×43) and Unit-1 was commissioned on 09-July-2001 & Unit-2 was commissioned on 05-July-2001 and run satisfactorily since then and the date is verified against the registered VCS Joint PD&MR/3/ and this was further cross verified with the help of commissioning and synchronization certificates submitted by PP/13/.

All this information was verified during on site assessment and found to be in line with the details provided in the registered VCS Joint PD&MR/3/ and other supporting documents submitted by PP. The emission reductions from the project activity during the current verification period from **01-November-2021 to 31-October-2022** (including both start and end dates) amount to **251,283** tonnes of CO_{2e}.

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 4.2/4/, VCS Standard Version 4.3/5/. The GHG emission reductions are based on the basis of the approved Baseline and monitoring methodology (ACM0002) "Grid Connected Electricity Generation from Renewable Sources"-Version 20.0/7/.

Scope: 01 Energy Industries (renewable- and non-renewable sources)

Title: "Grid Connected Electricity Generation from Renewable Sources" version 20.0/7/.

During onsite visit/24/ verification team has reviewed 100% data for both the two units involved in this project at site and hence no sampling was involved.

The verification consisted of the following three phases

- Document review;
- On-site assessment including Interviews and verifying the 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 monitoring report (MR) Version 01 dated 13-December-2022, Version 02 dated 18-January-2023, Version 03 dated 23-January-2023, Version 04 dated 24-January-2023, Version 05 dated 01-February-2023, Version 06 dated 23-February-2023, Version 07 dated 09-May-2023, Version 08 dated 08-June-2023, Version 09 dated 27-June-2023 and final Version 10 dated 03-July-2023 were assessed as part of the verification.

The emission reduction calculations spreadsheet version 01 dated 13-December-2022 and version 02 dated 18-January-2023 and final version 03 dated 01-February-2023 /2/, were also assessed as part of the verification. In addition, the registered VCS Joint PD&MR/3/ in particular for 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 “86 MW Hydro Project In Himachal Pradesh”., - Version 01 dated 13-December-2022 - Version 02 dated 18-January-2023 - Version 03 dated 23-January-2023 - Version 04 dated 24-January-2023 - Version 05 dated 01-February-2023 - Version 06 dated 23-February-2023 - Version 07 dated 09-May-2023 - Version 08 dated 08-June-2023 - Version 09 dated 27-June-2023 - Final Version 10 dated 03-July-2023
/2/	EKI: Emission Reduction Calculation Spreadsheet - Version 01 dated 13-December-2022 - Version 02 dated 18-January-2022 - Final version 03 dated 01-February-2023
/3/	EKI: Registered VCS Joint PD&MR for the project “86 MW Hydro Project in Himachal Pradesh.” version 06 dated 19-July-2022
/4/	VCS: VCS Program Guide, version 4.2 of 22-June-2022
/5/	VCS: VCS Standard, version 4.3 dated 22-June-2022
/6/	VCS: Monitoring report Template VCS Version 4.1
/7/	CDM Executive Board: Baseline and Monitoring Methodology (ACM0002)"Grid Connected Electricity Generation from Renewable Sources"-Version 20.0
/8/	UNFCCC: Project search: https://cdm.unfccc.int/Projects/projsearch.html
/9/	Gold Standard Foundation: https://registry.goldstandard.org/projects?q=&page=1
/10/	Monthly JMRs issued by state utility i.e., Himachal Pradesh State Electricity Board Limited (HPSEBL) for the current monitoring period from 01-November-2021 to 31-October-2022 (Inclusive of both start and end dates)

/11/	Certificates of Calibration for main meters and check meters belonging to the project activity
/12/	Invoice issued by MPCL to Statkraft for the current monitoring period from 01-November-2021 to 31-October-2022 (Inclusive of both start and end dates)
/13/	Commissioning certificates of the project activity issued by state electricity authority
/14/	Power Purchase Agreements signed between Project Proponent and PTC
/15/	Letter of declaration dated 19-January-2023 from PP regarding not having created or sought any other form of environmental credit for the current monitoring period from 01-November-2021 to 31-October-2022 (Inclusive of both start and end dates)
/16/	Monthly generation reports issued by inhouse O&M team
/17/	Central Electricity Authority (Installation and Operation of Meters) Regulations Notified on 17-04-2006 <u>No. 502/70/CEA/DP&D</u> Amendments Notified on 26-June-2010 <u>No. 502/6/2009/DP&D/D-I</u>
/18/	LGAI Technological Center, S.A. (Applus+ Certification): <u>Joint Validation & Verification report "86 MW Hydro Project In Himachal Pradesh." version 1.1 of 19-July-2022 for the period from 01-November-2020 to 31-October-2021 (Inclusive of both start and end dates)</u>
/19/	Site Visit photographs, videos and attendance sheet dated 07-January-2023
/20/	VERRA Webpage: https://registry.terra.org/app/projectDetail/VCS/93
/21/	VCS Validation and Verification manual version 3.2 dated 19-October-2016
/22/	CDM Validation and Verification Standard version 3.0 dated 23-October-2021
/23/	Grievance Register present on site and its Photographs for desk review
/24/	On site personnel interviews of PP and other personnel taken on 07-January-2023
/25/	GPS map camera used for confirming location during onsite visit and Google earth for desk review of the MPCL plant.
/26/	REC website Renewable Energy Certificate Registry of INDIA https://www.recregistryindia.nic.in/index.php/publics/faqs And International -renewable Energy certificates (I-REC) website for the period from 01-January-2016 to 31-May-2020- https://register.evident.global/device-register/MALANAHY
/27/	EIA NOTIFICATION dated 14-September-2006; https://moef.gov.in/wp-content/uploads/2018/03/so1533.pdf
/28/	DGR and Breakdown details for the current monitoring period from 01-November-2021 to 31-October-2022 (Inclusive of both start and end dates)
/29/	Tool to calculate the emission factor for an electricity system - Version 07.0

2.3 Interviews

An on-site inspection/24/has been performed by the assessment team at project site located in Jari village in Malana town of Kullu district in Himachal Pradesh state of India. The representatives of the PP were interviewed personally by assessment team on 07-January-2023, 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.

S.No.	Name	Designation	Topic of Discussion
1	Pawan Kumar	H.P.S.E.B (Toss)	Discuss about the Implementation of the project and Baseline emission reduction calculation and Data storage and QA/QC procedure
2	Rajesh Kumar	H.P.S.E.B (Bajaura)	
3	Dr, Ashok Kumar	Manager (MPCL)	Discuss about the JMR & invoicing procedure, Calibration procedure and frequency
4	Er Pankaj Upadhyay	A.M	
5	Er. Chandan Singh	A.M	Discuss about the Technical description of the project and Monitoring process of the project.
6	Er. T.K Treham	MPCL. V.P (O&M)	Discuss about the Grievance addressal mechanism and management practices and process of the project
7	Ankit Bakshi	Sr. Engineer	
8	Er.M.A. Rafiq	Sr. Manager	

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

S. No.	Name	Category	Topic
1	Lotan Ram (Chaukhi)	Local Stakeholder	- Project activity implementation and its impact on social, economic and environmental condition of the local people. - The ongoing communication procedure and the address of their grievances by the project proponent-MPCL - The employment generation due to implementation of the project activity.
2	Mahindra Singh (Chaukhi)		
3	Rajendra Kumar		
4	Narayan Singh (Bajaura)		

There were no negative comments received during the stakeholder consultation interview conducted on site and more details are enlisted in the section 4.2.2 below

2.4 Site Inspections

An On-site visit was undertaken by the verification team to the project site located at Jari village in Malana town of Kullu district in Himachal Pradesh state of India on 07-January-2023 to carry out the following.

- An assessment of the implementation of the registered project activity in accordance with the VCS Joint PD&MR/3/ and MR/1/.
- An analysis of the information flows for generating, aggregating and reporting the monitoring parameter;
- Onsite Interviews/24/ with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in VCS Joint PD&MR/3/.
- A cross check between information provided in the monitoring report and data from other sources such as plant logbooks, DGR reports and Invoices or similar data sources.
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the VCS Joint PD&MR/3/, the applied methodology including applicable tool/29/, and, where applicable, the applied standardized baseline methodology /7/.

- A review of calculations and assumptions made in determining the GHG data and emission reductions;
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

The objective of this phase of the verification is to resolve any outstanding issues which need to be clarified for VKU's positive conclusion on the project description. To guarantee transparency a verification protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of verification and the results from verifying the identified criteria. The verification protocol consists of three situations described below: -

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, **03 CLs**, **07 CARs** and **00FARs** were raised during this verification which were closed successfully and details are given under Appendix B of this report.

2.5.1 Forward Action Requests

This is the second periodic verification of the project activity under third crediting period and no FAR was raised during current verification and there was no FAR found from previous Joint validation and verification report which needs to be closed in current verification/18/.

2.6 Eligibility for Validation Activities

VKU has performed only the second periodic verification under third crediting period of the project activity and has not undertaken any validation activities as a part of the verification and 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. Please refer the link for same- <https://verra.org/validation-verification/vku-certification-pvt-ltd/#vcs>

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project has not applied under any other GHG program except VCS. The project is registered under VCS only with project ID VCS 93. Assessment Team has independently checked the various registries for the similar project such as CDM /GS/GCC/UCR/CR-I and other similar registries with similar project title/capacity and Project Proponents but assessment team was not able to trace any such project registered under any of the above stated registries or under any other similar mechanisms except VCS. This was further confirmed through a declaration/15/ submitted by the PP in which they have mentioned that they will not claim GHG emission reductions of the project from any other GHG program thus ensuring emission reduction generated from the project activity for current monitoring period from 01-November-2021 to 31-October-2022 (Inclusive of both dates) will not be double counted hence accepted by the assessment team.

Audit team has also checked the REC Mechanism database of India and found that the project activity is not accredited / registered under REC mechanism of India 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) /26/ Further, declaration/15/ for the same is submitted by the PP which was examined by the assessment team and found correct. However, project is found to be registered under I-REC mechanism /26/ where PP have claimed emission reductions from 01-January-2016 to 31-October-2020 and now they are not claiming emissions reductions for the current verification period and same was found to be correct when checked from I-REC project webpage and declaration is also submitted by PP/15/ which confirms that project is not claiming emission reductions for current monitoring period from any other GHG mechanism and any other form of GHG credits.

The details of the registries and mechanisms checked are as follows:

- <https://www.recregistryindia.nic.in/>
- <https://register.evident.global/device-register/MALANAHY>
- <http://cdm.unfccc.int/>
- <http://www.goldstandard.org/>
- <https://verra.org/verra-standards-and-programs/>
- <https://projects.globalcarboncouncil.com/>
- <https://www.ucarbonregistry.io/>
- <https://nccf.in/carbon-registry/>

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 and mechanisms checked are as follows:

- <https://www.recregistryindia.nic.in/>
- <https://register.evident.global/device-register/MALANAHY>
- <http://cdm.unfccc.int/>
- <http://www.goldstandard.org/>
- <https://verra.org/verra-standards-and-programs/>
- <https://projects.globalcarboncouncil.com/>
- <https://www.ucarbonregistry.io/>
- <https://nccf.in/carbon-registry/>

3.2 Methodology Deviations

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

3.3 Project Description Deviations

Deviation-1

PP has requested one deviation related to calibration frequency of the meters installed. At the time of registration all the energy meters calibration frequency was set as once in a year except the meters used to record the **EG_{Gen,Malana}** values whose calibration frequency was set as once in a three year. Now, at the time of project verification, it is observed that this meter is calibrated annually as per actual site practices which is also a conservative approach. Hence PP have corrected the calibration frequency for **EG_{Gen,Malana}** parameter in section 4.2 & 4.3 of revised monitoring report version 7 dated 09-May-2023/1/. This change has been verified by assessment team with the help of calibration certificates/11/ and it was also confirmed during site visit/19/. This deviation is of permanent nature and does not have any impact on the project applicability, scale, baseline scenario and additionality.

3.4 Grouped Project

As per VCS Joint PD&MR version 06 dated 19-July-2022, the project is not a grouped project. This can further be confirmed as per para 3.5.8 of VCS Standard Version 4.3/5/. 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 project is implemented as per the requirement of the registered VCS Joint PD&MR/3/ and approved monitoring plan. The total capacity of the project activity is 86 MW. (2 x 43 MW) and Unit-1 was commissioned on 09-July-2001 & Unit-2 was commissioned on 05-July-2001. During the current monitoring period, it was observed through breakdown log sheet/records/28/ onsite that no unforeseen incident/event evolved which has impacted the operation of the project activity. The project underwent continuous operation and only scheduled maintenance and shutdown of 46 hours and 31 mins happened due to the plant maintenance and low water availability season which can be verified through breakdown and DGR report/28/ submitted by PP and also mentioned in Appendix 3 of MR version 6.0/1/ happened on site during current monitoring period from 01-November-2021 to 31-October-2022 (Inclusive of both dates). The breakdown due to scheduled maintenance is as per the manufactures specification which is acceptable to the assessment team as verified during the interview with PP personnel/24/ Senior engineers/Assistant manager present at site during onsite visit. Moreover, there is no unforeseen incident which can affect the applicability of the methodology and thus the same is acceptable to the assessment team.

During the current monitoring period, the Hydro power plants was operational for the entire monitoring period except some scheduled breakdown of 46 hours and 31 mins and the project activity has supplied 292,871 MWh of electricity, and thus contributing to 251,283 tCO_{2e} GHG reductions.

The estimated emission reductions for the current motoring period were 284,269 tCO_{2e} whereas the achieved emission reductions for the project activity are 251,283 tCO_{2e}, which is 13.13% less than the estimated emission reductions for the current verification period. Further explanation is provided section 4.5 of this report.

Plant Site	Breakdown hours
Jari village in Malana town of Kullu district in Himachal Pradesh state of India	46 hours 31 minutes

The project location was verified by the assessment team through Google earth during desk review and GPS map camera software during onsite visit /25/. Moreover, assessment team confirmed the the latitude and longitude with the registered VCS Joint PD&MR/3/ and VCS Joint Validation and Verification Report/18/ and found to be consistent with the registered documents and hence accepted by VKU.

The hydro project located in Jari village in Malana town of Kullu district in Himachal Pradesh has the following latitudes and longitudes stated below:

Coordinates of the Barrage:

Latitude: 32°02'15.0" N; Longitude - 77°15'23.0" E

Coordinates of Power House:

Latitude - 32°00'15.0" N; Longitude - 77°14'55.0" E

Starting date of the operation of the project activity is 05-July-2001 which is the date of commissioning/commercial operation of the Hydro power plant. Assessment team checked the commissioning certificate/13/ and confirmed that the date of commissioning for the Hydro power plant is correct. Assessment team also confirmed during the onsite audit/24/ that there is no change in project design viz., capacity of both the units remained the same and the project is implemented as per the project description provided in the registered VCS Joint PD&MR/3/. This has been further verified from the previous Joint Validation and Verification report/18/.

Commissioning dates for project activity are given below;

Unit	Capacity	Date of Commissioning
Unit 1	43 MW	09-July-2001
Unit 2	43 MW	05-July-2001

The technical parameters have been verified with the name plates details of Hydro power plant and was also cross checked from the technical manual of the manufactures. The same could be verified from the VCS Joint Validation & Verification Report/18/. Assessment team confirms that the technical parameters are consistent with the registered VCS Joint PD&MR/3/.

The technical specifications of the major components of the Hydro power plant are as follows.

The Component list of 86 MW Hydro Project In Himachal Pradesh is provided below: -

Bharat Heavy Electricals Limited Power Sector – Northern Region Malana HEP	
Turbine Generators	1. Pelton Turbine 2. 2×43 MW TG SETS
1. Head Regulator	
Width of Head Regulator	14.25 m
No. of bays	4
Width of each bay	2.50 m
Thickness of piers	0.85 m
Orientation with respect to Barrage axis	117°
Regulation gates	2.50 m × 1.90 m vertical lift
Design discharge	26.25 cum/sec
2. De-Silting Arrangement	
No. and Size of desilting chamber	4 nos, each of 102 m × 8.5 m
Particle size to be excluded	all particles down to 0.20 mm size
Flow through velocity	0.19 sec
Flushing velocity	6.0 m/sec
Storage Reservoir Gross Storage	249,000 cm
Full supply reservoir level	1893.60 m
Minimum reservoir level	1879.00 m
Type and height of boundary wall	Concrete gravity dam with height of 23.8 m

The assessment team confirmed through onsite visit/19/ with PP representative that there is no proposed or actual change to the project design during this monitoring period. It was observed that the monitoring plan was implemented as per the registered VCS Joint PD&MR/3/and applied methodology, (ACM0002), Version 20.0/7/. The organizational role and responsibility as mentioned in the registered VCS Joint PD&MR/3/is followed onsite and no discrepancies were found regarding the same.

Assessment team concludes the following:

- There are no material discrepancies between project implementation and the project description except one deviation in calibration frequency of energy meters used to record values for **EGGen Malana** as explained in section 3.3 above of this verification report provided in the registered VCS Joint PD&MR/3/.
- The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling and analyzing the monitored data and parameters) is appropriate.
- There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology /7/.
- The GHG emission reductions or removals generated by the project have not been included in any other emissions trading program or any other mechanism that includes GHG allowance trading except I-REC. When the project was registered under I-REC there was no situation that VCU and I-RECs got issued for same time period, hence no double counting /15/. It is clear from the table below that no I-RECs are claimed in current monitoring period from 01-November-2021 to 31-October-2022 (Inclusive of both dates). The Project got registered under I-REC mechanism on **01-March-2015** and PP has claimed I-RECs from the project for the periods specified in the table below. The breakup for the RECs claimed are provided in table below are verified from the I-REC website² and the issuance record submitted by PP of the particular project and found to be consistent.
- The verification team has verified the I-REC issuance records submitted by PP and from I-RECs issuance record available on [website](#) along with revised MR/1/. The verification team has also done independent review and cross verified the claims with the 10th verification report version 02 dated 19-November-2019 which confirms that there is no overlapping in issuance of I-REC and VCUs for the 10th monitoring period (from 01-March-2015 to 31-December-2018 ; Inclusive of both dates). Period for which I-RECs were claimed that was not included in calculation of VCUs and the VCUs were issued only for these particular periods from (01-March-2015 to 31-December-2015), (01-July-2017 to 30-September-2017), (01-December-2017 to 31-December-2017) and (01-June-2018 to 31-December-2018). The issuance record of the project is also verified by assessment team on the VCUs issuance project webpage³. Hence, there was no overlapping of I-RECs and VCUs issuance period identified by the verification team.

Duration	Volume of IRECs claimed /issued
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01-January-2016 to 18-January-2016	3,100	315,567
19-January-2016 to 10-June-2016	80,000	
11-June-2016 to 07-July-2016	48,385	
08-July-2016 to 31-December-2016	184,082	
01-January-2017 to 30-June-2017	119,496	152,113
01-October-2017 to 31-October-2017	21,092	
01-November-2017 to 30-November-2017	11,525	
01-January-2018 to 28-February-2018	11,068	49,287
01-March-2018 to 31-May-2018	38,219	
01-January-2019 to 24-June-2019	116,601	355,869
01-July-2019 to 30-August-2019	148,465	
01-September-2019 to 30-November-2019	81,716	
01-December-2019 to 31-December-2019	9,087	
01-January-2020 to 28-February-2020	14,514	322,049
01-March-2020 to 31-May-2020	51,215	
01-June-2020 to 31-October-2020	256,320	

² <https://evident.app/IREC/device-register/MALANAHY>

³ <https://registry.verra.org/app/search/VCS?programType=ISSUANCE&exactResId=93>

- The project has not received or sought any other form of environmental credit, or has become eligible to do so since previous Joint validation and verification /18/.
- The project is registered under VCS only. PP has submitted the declaration/15/ stating, they will not claim same GHG emission reductions of the project from any other registries for the current monitoring period when project is seeking to get GHG emission reduction from VCS. The same was verified by checking in other GHG programs including GS Registry, CDM, GCC, UCR and CR-I.
- The project activity complies with four indicators for sustainable development i.e., social wellbeing, economic wellbeing, environmental wellbeing and technological wellbeing, in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under section 1.11 of MR /1/. Assessment team has verified the same during on site visit and found all the indicators to be effective and applicable for the project activity.

The Project activity has implemented activities that results in 2 SDG Contributions; **7.2, and 13**

- ✓ **7.2.1: Renewable energy share in the total final energy consumption;** 292,871 MWh of renewable electricity has been supplied to Indian grid during the current monitoring period that helped to increase the renewable energy share in the energy mix. The total energy supplied to Indian Grid by the project activity during its project lifetime (From 05-July-2001 to 31-October-2022) is 5,538,535.28 MWh
- ✓ **13: Tonnes of greenhouse gas emissions avoided or removed;** By supplying 292,871 MWh of clean electricity to Indian grid, the project avoided release of 251,283 tCO_{2e} in to the atmosphere during the current monitoring period. The greenhouse gas emissions avoided by the project activity during its project lifetime (From 05-July-2001 to 31-October-2022) are 4,760,794 tCO_{2e}

S.No.	Energy Supplied by the project activity to grid during its lifetime (MWh)	GHG emissions avoided by the project activity during its lifetime (tCO ₂ e)	Monitoring Period dates
First Crediting Period from 05-July-2001 to 04-July-2011 (Inclusive of both dates)			
1	1,793,216.29	1,344,912	05-July-2001 to 31-March-2007 (Inclusive of both dates)
2	336,092	252,069	01-April-2007 to 31-March-2008 (Inclusive of both dates)
3	355,865	266,898	01-April-2008 to 31-March-2009 (Inclusive of both dates)
4	241,634	181,223	01-April-2009 to 30-September-2009 (Inclusive of both dates)
5	60,988	45,737	01-October-2009 to 31-March-2010 (Inclusive of both dates)
6	264,437.490.54	198,328	01-April-2010 to 30-September-2010 (Inclusive of both dates)
7	182,349.214.64	136,762	01-October-2010 to 30-June-2011 (Inclusive of both dates)
Total	3,234,582.0	2,425,929	
Second Crediting Period from 05-July-2011 to 04-July-2021 (Inclusive of both dates)			
1	464,733.54	398,735	05-July-2011 to 31-August-201204-July-2021 (Inclusive of both dates)

2	733,049.16	628,938	01-September-2012 to 28-February-2015 (Inclusive of both dates)
3	776,771.30	666,460	01-March-2015 to 31-December-2018 ⁴ (Inclusive of both dates)
4	31,060.78	92,863	01-November-2020 to 04-July-2021 (Inclusive of both dates)
Total	2,005,614.78	1,786,996	
Third Crediting Period from 05-July-2021 to 04-July-2031 (Inclusive of both dates)			
1	200,831.61	178,137	From 05-July-2021 to 31-October-2021 (Inclusive of both dates)
2	292,871	251,283	From 01-November-2021 to 31-October-2022 (Inclusive of both dates) (Current Monitoring period)
Total over project lifetime	5,733,899.38	4,642,345	

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 registered VCS Joint PD&MR /3/ and MR /1/.

All the above stated information was verified by VKU Certification assessment team during onsite visit and site personnel interviews /24/

4.2 Safeguards

4.2.1 No Net Harm

The guidelines on Environmental Impact Assessment have been published by Ministry of Environment/27/ Forests and Climate Change (MoEF&CC), Government of India (GOI) under Environmental Impact Assessment notification 14-September-2006. Further amendments to the notification have been done on 14-August-2018.

According to the notification for hydroelectric power generation, this project comes under category A, as the capacity is 86 MW. The Public Hearing was successfully completed and as per the recommendation of the Government of Himachal Pradesh, the Ministry of Environment & Forests (MoEF), Government of India, has approved the EIA on 21-June-2005, vide letter no: J - 12011/21/2005-IA-I. For a hydroelectric power project, the major concern is at the point of project implementation in regard to social, economic and environmental issues. Under the regulatory frame work, Environment Impact Assessment (EIA) study is mandatory for the project activity as clarified by the Host party namely Ministry of Environment and Forests, Government of India. In this regard MPCL has addressed and resolve the key issues which are necessary part of Environment Impact Assessment. The environmental impacts associated with the project activity are as follows:

Impact on Flora and Fauna

Project activity does not involve storage of large amount of river water hence there is no issue related to the submergence of the forests, fertile land or of the inhabited areas. The structure of project (including reservoir, barrage and other facilities) is not very big in size which cause any significant disturbance to the eco-system. No significant deforestation is required at the weir side location. Implementation of the scheme would help in conservation of forest by replacing the firewood for cooking and heating purposes with electricity.

Socio-Economic Impact

There is no rehabilitation and resettlement taken place by the implementation of the project activity. No relocation of the human population occurred around the project activity. Project activity acquires small pieces of land for which adequate compensation was paid to the local villages; this compensation helped the local population to start new business in the nearby area. 15% of the generated electricity is being delivered to the state grid as royalty which will improve the power scene in the nearby area.

Environment Pollution

Since it is hydro project so there is no issue regarding air pollution. On the other hand, power generation from the project results in air quality improvement and emission reductions caused by burning of fossil fuels and firewood.

Impact of Noise Quality

Equipment's which are being used in project activity has the ability to keep the noise level below 90 dB for an exposure time of 8 hours as enforced by OSHA (Occupational Safety and Health Administration). During the construction phase, the personnel operating and stationed near the

Heavy Earth Moving Vehicles and Concrete Mixing Machines provided with adequate Personal Protective Equipment (PPEs) to avoid damage to the health. The noise generated in the construction process did not have any significant impact on the ambient noise levels.

Hence there is no significant noise impact has been observed. The project activity does not have any significant negative impact on the surrounding. On the contrary, the project activity helps in reducing the greenhouse gas emissions and environmental pollution caused by methane release.

4.2.2 Local Stakeholder Consultation

The Project is already registered with VCS and registered VCS Joint PD&MR/3/; sections 2.2 describe the Local Stakeholder Consultation Process as in-line with VCS requirement. The Local Stakeholder Meetings were organized for local stakeholder consultation and informed local stakeholder regarding the meeting. The followings are the local stakeholders for the project activity:

- Local community
- Local village administration
- Technology suppliers
- Local vendors

All the stakeholders have been invited through public notice to attend the stakeholders meeting. The details of the Stakeholder Meetings are as follows:

The HP State Environmental Protection & Pollution Control Board near the dam site in Ochin area in village Malana, District Kullu, in the state of Himachal Pradesh (H.P.) on 18-May-2004. Besides the common people of the project area, the public hearing has been attended by experts and officials from Department of Science & Technology, Government of India, District Collector, Fisheries Department of Himachal Pradesh State Government, Himachal Pradesh State Electricity Board, Himachal Pradesh State Pollution Control Board, Group of Senior Citizen, Gram Panchayat (village administration).

The stakeholders were also requested to share their experiences and grievances on continuous basis. Registers is used to records the grievances and feedback. During the current monitoring period, grievances has been received regarding site operation, which has been resolved on priority basis. As a part of continual improvement process, feedback from the associated stakeholders is vital, therefore a dedicated Visitor register cum grievance register has been placed at the project site which is accessible to stakeholders to provide their feedback on the project. It is appropriate publicly accessible location at which local stakeholders can provide their feedback on the project. This location is also conducive to continuous and regular checks for stakeholder comments.

For the global stakeholders, the suggestion and the grievance can be submitted to info@malanapower.com

Following grievances has been raised and resolved in the current monitoring period by the field staff of MPCL:

S.No.	Name of Stakeholder	Date	Grievance raised	Action Taken by PP
1	Bala Ram	05-September-2022	Construction of Drain	Construction of Drain has been completed
2	Shadu Ram	20-September-2022	There were pit holes formed in the backside of the road of the power house	Road concreting was done
3	Deep Chand	24-October-2022	There is a problem of travelling due to darkness in village Road during night time, hence please provide lightning system	Solar lights have been installed in Chowki village for the walking of local resident.

4.3 AFOLU-Specific Safeguards

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

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The project monitoring has been carried in accordance with the registered VCS Joint PD&MR/3/ and the monitoring report/1/. It involves 12 parameters to be monitored according to the monitoring plan and monitoring report/1/;

S.No.	Parameter Name	Unit	Description
1	EG _{PJ,y}	MWh	Net Electricity supplied to the Unified Indian Grid by the project activity during the year y
2	EG _{Gen, Malana}	MWh	Energy generated by 86 MW Hydro Project in Himachal Pradesh at the Generation point
3	EG _{Malana}	MWh	Energy supplied by the 86 MW Hydro Project in Himachal Pradesh to the Malana transmission line at Malana Yard
4	EG _{Toss}	MWh	The units/ Energy supplied by the Toss Hydro Power Project to the Malana transmission line at Malana Yard
5	EG _{M&T}	MWh	Total Energy sent out both Malana and Toss hydro power project to the Malana transmission line at Malana yard
6	EG _{Aux, Malana}	MWh	Auxiliary consumption by 86 MW Hydro Project in Himachal Pradesh
7	EG _{Bajoura,M&T}	MWh	Energy injected at Bajoura substation by both Malana and Toss hydro power project
8	L _{Transmission}	MWh	Total transmission losses between Malana yard and Bajoura substation
9	L _{Malana}	MWh	Share of losses of 86 MW Hydro Project in Himachal Pradesh)
10	L _{Toss}	MWh	Share of losses of Toss hydro power project
11	APJ	M ²	Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full
12	C _{apPJ}	W (Watt)	Installed capacity of the hydro power plant after the implementation of the project activity

Some parameters value is sourced from JMRs /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 JMR. ER sheet/2/ prepared by PP has been reviewed by assessment team thoroughly by cross checking the values of JMRs and Invoices submitted by PP and found to be correct including all the formulae and conversions and aggregations.

The estimated emission reduction for the current monitoring period are 284,269 tCO₂e, however the achieved emission reductions are 251,283 tCO₂e which is 13.13% less than the estimated emission reductions which is due to the low PLF achieved by the project activity during the current monitoring period which is completely governed by the availability of water which is natural phenomenon and same is beyond the control of PP, In section 4.5, of this report and section 5 of MR/1/ calculations has been stated which can be further be compiled in ER sheet/2/ verified by the assessment team from monthly JMRs issued to PP by HPSEBL/14/& invoices issued by MPCL /12/ submitted to VVB by PP.

Hence VKU states that the calculation method and formulae used in calculating baseline emission is in compliance with the methodology used i.e. (ACM0002) "Grid Connected Electricity Generation from Renewable Sources" Version 20.0/7/

Since project activity is a run of the river hydroelectric power project, leakage emissions and project emissions has been considered as zero as per the applied methodology and further calculations are provided in section 4.5 below and section 5.2 and 5.3 of MR/1/.

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 monitoring parameters in the project activity are “**EG_{PJ,y}** (Net Electricity supplied to the Unified Indian Grid by the project activity during the year y), **EG_{Gen, Malana}** (Energy generated by 86 MW Hydro Project in Himachal Pradesh at the Generation point), **EG_{Malana}** (Energy supplied by the 86 MW Hydro Project in Himachal Pradesh to the Malana transmission line at Malana Yard), **EG_{Toss}** (The units/ Energy supplied by the Toss Hydro Power Project to the Malana transmission line at Malana Yard) **EG_{M&T}** (Total Energy sent out both Malana and Toss hydro power project to the Malana transmission line at Malana yard), **EG_{Aux, Malana}** (Auxiliary consumption by 86 MW Hydro Project in Himachal Pradesh), **EG_{Bajoura, M&T}** (Energy injected at Bajoura substation by both Malana and Toss hydro power project), **L_{Transmission}** (Total transmission losses between Malana yard and Bajoura substation), **L_{Malana}** (Share of losses of 86 MW Hydro Project in Himachal Pradesh), **L_{Toss}** (Share of losses of Toss hydro power project), **A_{PJ}** (Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full), **C_{appPJ}** (Installed capacity of the hydro power plant after the implementation of the project activity).

These parameters are monitored through controller reading of Hydro turbines generator and the reading of bulk energy meters installed at substation.

The below tables describe how the parameters $EG_{PJ,y}$, $EG_{Gen, Malana}$, EG_{Malana} , EG_{Toss} , $EG_{M\&T}$, $EG_{Aux, Malana}$, $EG_{Bajoura, M\&T}$, $L_{Transmission}$, L_{Malana} , L_{Toss} , A_{PJ} , and C_{appPJ} is to be measured according to the monitoring plan, VVB has 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	Net Electricity supplied to the Unified Indian Grid by the project activity during the year y, $EG_{PJ,y}$ (MWh)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated and recorded on monthly basis. The value of net electricity generation supplied to the grid is as per Joint Meter Reading Report which is calculated as per the joint meter readings taken at all three substations. This is a calculated value and formula is, $EG_{PJ,y} = [EG_{Malana} - EG_{Aux, Malana} - L_{Malana}]$
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on monthly basis as outlined in MR /1/ and registered VCS Joint PD&MR/3/.
	Monitoring equipment	Not Applicable as it is a calculated parameter
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Not Applicable as no monitoring equipment is used

	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable as no monitoring equipment is used.
	Calibration frequency /interval:	Not Applicable
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not Applicable
	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable
	How were the values in the monitoring report verified?	Cumulative value of EG_{PJ,y} for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. Value of this parameter for the current monitoring period was verified as 292,871 MWh

	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of $EG_{PJ,y}$ is calculated using formula $EG_{PJ,y} = [EG_{Malana} - EG_{Aux, Malana} - L_{Malana}]$ where Meters installed at all three locations, at generation point, plant sent out point and at Bajaura Substation, accurately monitors electricity supplied to the grid. Joint Meter readings are taken at all three stations which have been used to achieve the value of parameters $EG_{PJ,y}$.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On site personnel interview/24/ 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. During onsite visit it was confirmed that the meters used to record the net electricity supplied are maintained and calibrated by state electricity board (HPSEBL). The desk review of registered 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?	Not Applicable.
Findings	CL#01, CL#02, CAR#02 and CAR#03 were raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

	The emission reduction calculation for the project activity is estimated based on the electricity supplied by the hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.
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Parameter	Energy generated by 86 MW Hydro Project in Himachal Pradesh at the Generation point, EG_{Gen, Malana} (MWh)																					
Means of verification	Criteria/Requirements	Assessment/Observation																				
	Measuring /Reading /Recording frequency	The parameter is continuously monitored but calculated and recorded on monthly basis. The value of net electricity generation supplied to the grid is as per Joint Meter Reading Report. (Meter installed at the generation point will be used to record this parameter)																				
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on monthly basis in line with the monitoring plan as outlined in the registered Joint VCS PD&MR /3/ and monitoring methodology/7/.																				
	Monitoring equipment	The monitoring equipment is electricity meter with the following specifications; Type: Electricity Meter Accuracy Class of meters: 0.2 s <table border="1"> <thead> <tr> <th>Meter No.</th><th>Sr</th><th>Meter Make</th><th>Location of the Meter</th></tr> </thead> <tbody> <tr> <td>18168106</td><td></td><td>L&T</td><td>Malana G-1 Main Meter</td></tr> <tr> <td>HPU06253</td><td></td><td>Secure</td><td>Malana G-1 Check Meter</td></tr> <tr> <td>Q0333358</td><td></td><td>Secure</td><td>Malana G-1 Check Meter</td></tr> <tr> <td>18168111</td><td></td><td>L&T</td><td>Malana G-2 Main Meter</td></tr> </tbody> </table>		Meter No.	Sr	Meter Make	Location of the Meter	18168106		L&T	Malana G-1 Main Meter	HPU06253		Secure	Malana G-1 Check Meter	Q0333358		Secure	Malana G-1 Check Meter	18168111		L&T
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		HPU06254	Secure	Malana G-2 Check Meter	
		Q0333416	Secure	Malana G-2 Check Meter	
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The accuracy of the monitoring equipment used to measure the input values such as import and export to calculate net electricity generation value is 0.2s, which is as per the registered VCS Joint PD&MR /3/ which is as per the norm defined in 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.			
	Calibration frequency /interval:	Once in a year			
	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 a year as per the calibration certificates/11/ submitted and actual site practice which is in accordance with the national standards of CEA -Electricity Act, 2003. /17/.			
	Is the calibration of measuring equipment carried out by an	Calibration of the measuring equipment's is carried out by Electrical Research and development Association which is accredited with NABL (CC2162)			

	accredited person or institution?	and it is under purview of state electricity board.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, Calibration of meters is valid for the current monitoring period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately and the calibration is valid for the entire monitoring period
	How were the values in the monitoring report verified?	Cumulative value of EG_{Gen}, Malana for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. The monthly values were verified from the JMR issued by state utility and found to be consistent. Value of this parameter for the current monitoring period was verified as 324,451 MWh
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG_{Gen}, Malana were further cross checked with the monthly invoices raised by the PP /12/ 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/24/ 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. During onsite visit it was confirmed that the meters used to record the net electricity supplied are maintained and calibrated by state electricity board (HPSEBL). The desk review of registered 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#01, CL#02, CAR#02, CAR#03 and CAR#07 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 hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.		

Parameter	Energy supplied by the 86 MW Hydro Project in Himachal Pradesh to the Malana transmission line at Malana Yard, EG_{Malana} (MWh)		
Means of verification			
	Criteria/Requirements	Assessment/Observation	
	Measuring /Reading /Recording frequency	The parameter is calculated and recorded on monthly basis. This is calculated value and formula $EG_{Malana} = (EG_{Gen, Malana} - EG_{Aux, Malana})$	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on monthly basis as outlined in MR /1/ and registered VCS Joint PD&MR/3/.	
	Monitoring equipment	Not Applicable as it is a calculated parameter	

	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Not Applicable as no monitoring equipment is used	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable	
	Calibration frequency /interval:	Not Applicable	
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable	
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not Applicable	

	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable
	How were the values in the monitoring report verified?	Cumulative value of EG_{Malana} for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. Value of this parameter for the current monitoring period was verified as 323,921 MWh
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG_{Malana} are calculated using formula EG_{Malana} = (EG_{Gen, Malana} - EG_{Aux, Malana}) where values of Energy supplied by the 86 MW Hydro Project in Himachal Pradesh to the Malana transmission line at Malana Yard are presented in JMR /11/. Hence it is accepted
	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/24/ with the project stakeholder of the project activity confirms that the no QA/QC procedures are applicable for this parameter.
	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	No such issues.

	to the CDM Project Standard?	
Findings	CL#01, CL#02, CAR#02 and CAR#03 were raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.	

Parameter	(The units/ Energy supplied by the Toss Hydro Power Project to the Malana transmission line at Malana Yard) EG_{Toss} (MWh)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is continuously monitored but calculated and recorded on monthly basis. Energy supplied by the Toss Hydro Power Project to the Malana transmission line at Malana Yard. (Meter installed at the Malana yard will be used to record this parameter)
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on monthly basis in line with the monitoring plan as outlined in the registered VCS Joint PD&MR /3/ and monitoring methodology/7/.
	Monitoring equipment	The monitoring equipment with the following specifications; Type: Electricity Meter Accuracy Class of meters: 0.2 s

		Meter No.	Sr	Meter Make	Location of the Meter
		KAU99437		L&T	Toss Incomer Main Meter
		Q0333437		Secure	Toss Incomer Main Meter
		KAU99438		L&T	Toss Incomer Check Meter
		Q0333467		Secure	Toss Incomer Check Meter
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The accuracy of the monitoring equipment used to measure the input values such as import and export to calculate net electricity generation value is 0.2s, which is as per the registered VCS Joint PD&MR /3/ which in turn is as per the agreed terms defined in 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.			
	Calibration frequency /interval:	Annually Calibrated			
	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	Yes. The calibration frequency is annual as outlined in the registered VCS Joint PD&MR /03/			

	manufacturer's specifications?	
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Calibration of the measuring equipment's is carried out by Electrical Research and development Association which is accredited with NABL (CC2162) and it is under purview of state electricity board.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, Calibration of meters is valid for the current monitoring period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately and it is valid for the entire monitoring period
	How were the values in the monitoring report verified?	Cumulative value of EG_{Toss} for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. The monthly values were verified from the JMRs issued by state utility and found to be consistent. Value of this parameter for the current monitoring period was verified as 132,599 MWh
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG_{Toss} were further cross checked with the monthly invoices raised by the PP /12/ 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/24/ 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. During onsite visit it was confirmed that the meter used to record the energy supplied by the Toss Hydro Power Project to the Malana transmission line

		at Malana Yard is maintained and calibrated by (HPSLDC: Himachal Pradesh State Load Despatch Centre, Totu, Shimla, HP). The desk review of registered monitoring plan and its implementation in the current monitoring period is done to satisfactorily verify that the system is in place to measure this parameter.	
	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#01, CL#02, CAR#02, CAR#03 and CAR#07 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 hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.		

Parameter	Total Energy sent out both Malana and Toss hydro power project to the Malana transmission line at Malana yard EG_{M&T} (MWh)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is continuously monitored but calculated and recorded on monthly basis. Net energy sent out to both Toss and Malana to the Malana transmission line at Malana yard.

		(Meter installed at the Malana yard will be used to record this parameter)																				
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on monthly basis and is in line with the monitoring plan as outlined in the registered VCS Joint PD&MR /3/ and monitoring methodology/7/.																				
	Monitoring equipment	The monitoring equipment is electricity meter with Specification: Type: Electricity Meter Accuracy Class of meters: 0.2 s <table> <tr> <th>Meter No.</th> <th>Sr</th> <th>Meter Make</th> <th>Location of the Meter</th> </tr> <tr> <td>HPU05987</td> <td></td> <td>Secure</td> <td>Malana Line-1 Main Meter</td> </tr> <tr> <td>HPU06607</td> <td></td> <td>Secure</td> <td>Malana Line-1 Check Meter</td> </tr> <tr> <td>HPU05988</td> <td></td> <td>Secure</td> <td>Malana Line-2 Main Meter</td> </tr> <tr> <td>HPU06608</td> <td></td> <td>Secure</td> <td>Malana Line-2 Check Meter</td> </tr> </table>	Meter No.	Sr	Meter Make	Location of the Meter	HPU05987		Secure	Malana Line-1 Main Meter	HPU06607		Secure	Malana Line-1 Check Meter	HPU05988		Secure	Malana Line-2 Main Meter	HPU06608		Secure	Malana Line-2 Check Meter
	Meter No.	Sr	Meter Make	Location of the Meter																		
	HPU05987		Secure	Malana Line-1 Main Meter																		
HPU06607		Secure	Malana Line-1 Check Meter																			
HPU05988		Secure	Malana Line-2 Main Meter																			
HPU06608		Secure	Malana Line-2 Check Meter																			
Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The accuracy of the monitoring equipment used to measure the input values such as import and export to calculate net electricity generation value is 0.2s, which is as per the registered VCS Joint PD&MR /3/ which is as per the norm defined in the PPA/14/.																					
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to	Yes. The accuracy of monitoring equipment's is valid for the entire range.																					

	different measuring ranges?	
	Calibration frequency /interval:	Annually Calibrated
	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 annual as outlined in the registered VCS Joint PD&MR /03/.
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Calibration of the measuring equipment's is carried out by Electrical Research and development Association which is accredited with NABL (CC2162) and it is under purview of state electricity board.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, Calibration of meters is valid for the current monitoring period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.

	How were the values in the monitoring report verified?	Cumulative value of EG_{M&T} for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. The monthly values were verified from the JMRs issued by state utility and found to be consistent. Value of this parameter for the current monitoring period was verified as 456,520 MWh.	
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG_{M&T} were further cross checked with the monthly invoices raised by the PP /12/ 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/24/ 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. During onsite visit it was confirmed that the meter used to record the energy supplied to both Malana and Toss hydro power project to the Malana transmission line at Malana yard is maintained and calibrated by (ERDA: Electrical Research and development Association). The desk review of registered monitoring plan and its implementation in the current monitoring period is conducted satisfactorily which confirms 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	No such issues.	

	to the CDM Project Standard?		
Findings	CL#01, CL#02, CAR#02, CAR#03 and CAR#07 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 hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.		

Parameter	Auxiliary consumption by 86 MW Hydro Project in Himachal Pradesh), EG_{Aux} , Malana (MWh)		
Means of verification			
	Criteria/Requirements	Assessment/Observation	
	Measuring /Reading /Recording frequency	The parameter is calculated and recorded on monthly basis. This is calculated value and formula used to calculate is, Auxiliary consumption, $EG_{Aux, Malana} = [EG_{Gen, Malana} + EG_{Toss} - EG_{M\&T}]$	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on monthly basis as outlined in MR /1/ and registered VCS Joint PD&MR/3/.	
	Monitoring equipment	Not Applicable as it is a calculated parameter	

	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Not Applicable as no monitoring equipment is used
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable
	Calibration frequency /interval:	Not Applicable
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not Applicable

	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable
	How were the values in the monitoring report verified?	Cumulative value of EG_{Aux, Malana} for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. Value of this parameter for the current monitoring period was verified as 531 MWh
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG_{Aux, Malana} were further cross checked by assessment team in the ER sheet/2/ by checking the formula applied and calculations for the entire monitoring period and it is 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/24/ with the project stakeholder of the project activity confirms that no necessary QA/QC procedures are applicable for this parameter.
	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#01, CL#02, CAR#02, CAR#03 and CAR#07 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 hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.

Parameter	Energy injected at Bajoura substation by both Malana and Toss hydro power project EG Bajoura, M&T (MWh)									
Means of verification	Criteria/Requirements	Assessment/Observation								
	Measuring /Reading /Recording frequency	The parameter is continuously monitored but calculated and recorded on monthly basis. The value of electricity generation supplied to the Bajoura substation by both Malana and Toss hydro power project is as per Joint Meter Reading Report. (Meter installed at the Bajaura Substation will be used)								
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on monthly basis and is in line with the monitoring plan as outlined in the registered VCS Joint PD&MR /3/ and monitoring methodology/7/.								
	Monitoring equipment	The monitoring equipment is electricity meter with Specification: Type: Electricity Meter Accuracy Class of meter: 0.2 s <table><tr><td>Meter No.</td><td>Sr</td><td>Meter Make</td><td>Location of the Meter</td></tr><tr><td>KRB09865</td><td></td><td>Secure</td><td>Bajaura Line-</td></tr></table>		Meter No.	Sr	Meter Make	Location of the Meter	KRB09865		Secure
Meter No.	Sr	Meter Make	Location of the Meter							
KRB09865		Secure	Bajaura Line-							

				1 Main Meter	
		HPU06609	Secure	Bajaura Line-1 Check Meter	
		HPU05989	Secure	Bajaura Line-2 Main Meter	
		HPU06610	Secure	Bajaura Line-2 Check Meter	
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	The accuracy of the monitoring equipment used to measure the input values such as import and export to calculate electricity generation supplied to Bajoura substation value is 0.2s, which is as per the registered VCS Joint PD&MR /3/ which is as per the norm defined in 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 monitoring period.			
	Calibration frequency /interval:	Annually Calibrated			
	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 annual as outlined in the registered VCS Joint PD&MR /03/.			

	Is the calibration of measuring equipment carried out by an accredited person or institution?	Calibration of the measuring equipment's is carried out by Electrical Research and development Association which is accredited with NABL (CC2162) and it is under purview of state electricity board.
	Is(are) calibration(s) valid for the whole reporting period?	Yes, Calibration of meters is valid for the current monitoring period.
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Yes. The calibration is carried out appropriately.
	How were the values in the monitoring report verified?	Cumulative value of EG Bajoura, M&T for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. The monthly values were verified from the JMRs issued by state utility and found to be consistent. Value of this parameter for the current monitoring period was verified as 454,624 MWh.
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of EG Bajoura, M&T were further cross checked with the monthly invoices raised by the PP /12/ 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/24/ 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. During onsite visit it was confirmed that the meter used to record the energy supplied to both Malana and Toss hydro power project to Bajoura substation by both Malana and Toss hydro power project is maintained and calibrated by (ERDA: Electrical Research and development Association).

		The desk review of registered monitoring plan and its implementation in the current monitoring period is conducted satisfactorily which confirms 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#01, CL#02, CAR#02, CAR#03 and CAR#07 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 hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.		

Parameter	Total transmission losses between Malana yard and Bajoura substation, $L_{\text{Transmission}}$ (MWh)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated and recorded on monthly basis. This is calculated value and formula used is $L_{\text{Transmission}} = (EG_{\text{M\&T}} - EG_{\text{Bajaura M\&T}})$
	Is measuring and reporting frequency in accordance with the monitoring plan and	Yes. The reporting frequency is on monthly basis as outlined in MR /1/ and registered VCS Joint PD&MR/3/.

	monitoring methodology? (Yes / No)	
	Monitoring equipment	Not Applicable as it is a calculated parameter
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Not Applicable as no monitoring equipment is used
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable
	Calibration frequency /interval:	Not Applicable
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable
	Is the calibration of measuring equipment	Not Applicable

	carried out by an accredited person or institution?	
	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable
	How were the values in the monitoring report verified?	Cumulative value of L_{Transmission} for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/. Value of this parameter for the current monitoring period was verified as 1,896 MWh
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of L_{Transmission} are calculated using formula L_{Transmission} = (EG_{M&T} – EG_{Bajaura M&T}) where values of transmission losses between Malana yard and Bajoura substation are subtracted and this is cross verified from the letter submitted by PP which is issued by state electricity board (HPSEBL: Himachal Pradesh State Electricity Board) dated 18-December-2009 and letter number-HPSEB/PR&CERC/PC-52(Vol-II)/2009 and properly calculated in ER sheet/2/. Hence it is accepted
	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/24/ with the project stakeholder of the project activity confirms that no necessary QA/QC procedures are applicable for this monitoring parameter.

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

Parameter	Share of losses of 86 MW Hydro Project in Himachal Pradesh, L_{Malana} (MWh)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated and recorded on monthly basis. This is a calculated value and the formula used is as follows_ $L_{Malana} = \frac{L_{Transmission} \times EG_{Malana}}{EG_{Bajaura,M\&T}}$
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on monthly basis as outlined in MR /1/ and registered VCS Joint PD&MR/3/.
	Monitoring equipment	Not Applicable as it is a calculated parameter

	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Not Applicable as no monitoring equipment is used
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable
	Calibration frequency /interval:	Not Applicable
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not Applicable

	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable
	How were the values in the monitoring report verified?	Cumulative value of L_{Malana} for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/ are recorded. Value of this parameter for the current monitoring period was verified as 1,443 MWh
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of L_{Malana} are calculated using formula - $L_{Malana} = \frac{L_{Transmission} \times EG_{Malana}}{EG_{Bajaura, M\&T}}$ where Share of losses of 86 MW Hydro Project in Himachal Pradesh is calculated using the formula listed in the letter and it is verified by assessment team in the ER sheet/2/. Hence it is accepted
	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/24/ with the project stakeholder of the project activity confirms that the necessary QA/QC procedures are not applicable for this parameter.
	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	No such issues.

	to the CDM Project Standard?	
Findings	CL#01, CL#02, CAR#02 and CAR#03 were raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.	

Parameter	Share of losses of Toss hydro power project, L_{Toss} (MWh)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated and recorded on monthly basis. This is calculated value and formula. $L_{Toss} = \frac{L_{Transmission} \times EG_{Toss}}{EG_{Bajaura,M\&T}}$
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on monthly basis as outlined in MR /1/ and registered VCS Joint PD&MR/3/.
	Monitoring equipment	Not Applicable as it is a calculated parameter
	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	Not Applicable as no monitoring equipment is used

	local/national standards, or as per the manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable
	Calibration frequency /interval:	Not Applicable
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not Applicable
	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable

	How were the values in the monitoring report verified?	Cumulative value of L_{Toss} for entire monitoring period is reported in the monitoring report/1/, and monthly values in the ER calculation sheet/2/ are presented. Value of this parameter for the current monitoring period was verified as 462.65 MWh
	If applicable, has the reported data been cross-checked with other available data?	The monthly reported values of L_{Toss} are calculated using formula $L_{Toss} = \frac{L_{Transmission} \times EG_{Toss}}{EG_{Bajaura, M\&T}}$ where Share of Share of losses of Toss hydro power project is calculated using the formula listed in the letter and it is verified by assessment team in the ER sheet/2/. /. Hence it is accepted
	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/24/ with the project stakeholder of the project activity confirms that the necessary QA/QC procedures are not applicable for this project activity.
	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#01, CL#02, CAR#02 and CAR#03 were raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.	

Parameter	(Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full) A_P (m²)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated yearly basis.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on yearly basis as per registered VCS Joint PD &MR /3/.
	Monitoring equipment	Not Applicable as it is a calculated parameter
	Is accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	Not Applicable as no monitoring equipment is used
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable
	Calibration frequency /interval:	Not Applicable
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does	Not Applicable

	not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not Applicable
	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable
	How were the values in the monitoring report verified?	Value of this parameter for the current monitoring period was verified as 18,250 m ²
	If applicable, has the reported data been cross-checked with other available data?	Not Applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Not Applicable
	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	No such issues.

	been estimated as stipulated by Appendix 1 to the CDM Project Standard?	
Findings	CL#01, CL#02, CAR#02 and CAR#03 were raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.	

Parameter	Installed capacity of the hydro power plant after the implementation of the project activity C_{appJ} W (Watt)	
Means of verification	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	The parameter is calculated on yearly basis.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is on yearly basis as per registered VCS Joint PD &MR /3/.
	Monitoring equipment	Not Applicable as it is a calculated parameter
	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	Not Applicable as no monitoring equipment is used

	local/national standards, or as per the manufacturer's specification?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	Not Applicable
	Calibration frequency /interval:	Not Applicable
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	Not Applicable
	Is the calibration of measuring equipment carried out by an accredited person or institution?	Not Applicable
	Is(are) calibration(s) valid for the whole reporting period?	Not Applicable
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	Not Applicable

	How were the values in the monitoring report verified?	Value of this parameter for the current monitoring period was verified as 86,000,000 Watt
	If applicable, has the reported data been cross-checked with other available data?	Not Applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Not Applicable
	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#01, CL#02, CAR#02 and CAR#03 were raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan. The emission reduction calculation for the project activity is estimated based on the electricity supplied by the hydro power plant. Since 100% data was verified, the team can ascertain that the values taken for emission calculation are free from material errors.	

Parameters fixed ex ante:

S. No	Parameter	Unit	Description	Value
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1	EF _{BM, grid, y}	tCO ₂ /MWh	Build Margin CO ₂ Emission Factor in year y	0.8120 tCO ₂ /MWh is consistent with the registered VCS Joint PD& MR/3/.
2	EF _{OM, grid, y}	tCO ₂ /MWh	Operating Margin CO ₂ Emission Factor in year y	0.9940 tCO ₂ /MWh is consistent with the registered VCS Joint PD& MR/3/.
3	EF _{CM, grid, y}	tCO ₂ /MWh	Combined Margin CO ₂ Emission Factor in year y	0.8580 tCO ₂ /MWh is consistent with the registered VCS Joint PD& MR/3/.

Calibration of meters:

During the verification assessment of the project activity, accuracy of the installed meters has 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:

Details of meters are provided in below table:

S.No.	Meter No	Make	Accuracy	Check /Main	Location	Purpose	Date of Calibration	Due date of Calibration	Delay in Calibration
1	Q0333358	Secure	0.2s	Check	Generating Point (Malana G-1 Check Meter)	To Measure EG _{Gen, Malana}	28-April-2022	27-April-2023	No Delay: Meter was installed on 21-December-2021 hence valid till 20-December-2022 and next calibration happened on 28-April-2022

2	Q0333416	Secure	0.2s	Check	Generating Point (Malana G-2 Check Meter)	To Measure EG _{Gen, Malana}	28-April-2022	27-April-2023	No Delay: Meter was installed on 21-December-2021 hence valid till 20-December-2022 and next calibration happened on 28-April-2022
3	18168106	L&T	0.2s	Main	Generating Point (Malana G-1 Main Meter)	To Measure EG _{Gen, Malana}	28-April-2022	27-April-2023	No Delay: Previous calibration conducted on 04-August-2021 which is valid till 03-August-2022 and next calibration happened on 28-April-2022

4	HPU06253	Secure	0.2s	Check	Generating Point (Malana G-1 Check Meter)	To Measure EG _{Gen, Malana}	04-August-2021	03-August-2022	No Delay: This meter was removed on 21-December-2021 and new meter with serial number Q0333358 was installed on 21-December-2021 hence valid till 20-December-2022
5	18168111	L&T	0.2s	Main	Generating Point (Malana G-2 Main Meter)	To Measure EG _{Gen, Malana}	28-April-2022	27-April-2023	No Delay: Previous calibration conducted on 04-August-2021 which is valid till 03-August-2022 and next calibration happened on 28-

									April-2022
6	HPU06254	Secure	0.2s	Check	Generating Point (Malana G-2 Check Meter)	To Measure EG _{Gen, Malana}	04-August-2021	03-August-2022	No Delay as this meter was removed on 21-December-2021 and new meter with serial number Q033334 16 was installed on 21-December-2021 hence valid till 20-December-2022
7	HPU05987	Secure	0.2s	Main	Sarabai Transmission Line at Jari (Malana Line-1 Main Meter)	To Measure EG _{M&T}	28-April-2022	27-April-2023	No Delay: Previous calibration conducted on 04-August-2021 which is valid till 03-August-2022 and next calibration happened

									on 28-April-2022
8	HPU06607	Secure	0.2s	Check	Sarabai Transmission Line at Jari (Malana Line-1 Check Meter)	To Measure EG _{M&T}	28-April-2022	27-April-2023	No Delay: Previous calibration conducted on 04-August-2021 which is valid till 03-August-2022 and next calibration happened on 28-April-2022
9	HPU05988	Secure	0.2s	Main	Sarabai Transmission Line at Jari (Malana Line-2 Main Meter)	To Measure EG _{M&T}	28-April-2022	27-April-2023	No Delay: Previous calibration conducted on 04-August-2021 which is valid till 03-August-2022 and next calibration happened on 28-April-2022

10	HPU06608	Secure	0.2s	Check	Sarabai Transmission Line at Jari (Malana Line-2 Check Meter)	To Measure EG _{M&T}	28-April-2022	27-April-2023	No Delay: Previous calibration conducted on 04-August-2021 which is valid till 03-August-2022 and next calibration happened on 28-April-2022
11	HPU06609	Secure	0.2s	Check	Sarabai Transmission Line at Sarabai (Bajaura Line-1 Check Meter)	To Measure (EG Bajoura, _{M&T})	04-August-2021	03-August-2022	No Delay: Previous calibration conducted on 04-August-2021 which is valid till 03-August-2022
12	KRB09865	Secure	0.2s	Main	Sarabai Transmission Line at Sarabai (Bajaura Line-1 Main Meter)	To Measure (EG _{Bajaura, M&T})	04-August-2021	03-August-2022	No Delay: Previous calibration was conducted on 04-August-2021 which is

									valid till 03- August- 2022
13	HPU05989	Secure	0.2s	Main	Sarabai Transmission Line at Sarabai (Bajaura Line-2 Main Meter)	To Measure (EG _{Bajaura, M& T})	04-August- 2021	03-August- 2022	No Delay: Previous calibratio n was conducte d on 04- August- 2021 which is valid till 03- August- 2022
14	HPU06610	Secure	0.2s	Check	Sarabai Transmission Line at Sarabai (Bajaura Line-2 Check Meter)	To Measure (EG _{Bajaura, M& T})	04-August- 2021	03-August- 2022	No Delay: Previous calibratio n was conducte d on 04- August- 2021 which is valid till 03- August- 2022
15	Q0333437	Secure	0.2s	Main	Toss	To Measure EG _{Toss}	21- December- 2021	20- December- 2022	No Delay as meter installed has validity till 20- Decembe r-2022 which is within the monitorin

									g period dates.
16	Q0333467	Secure	0.2s	Check	Toss	To Measure EG _{Toss}	21-December-2021	20-December-2022	No Delay as meter installed has validity till 20-December-2022 which is within the monitoring period dates.
17	KAU99437	L&T	0.2s	Main	Toss	To Measure EG _{Toss}	15-January-2021	14-January-2022	No Delay as this meter was removed on 21-December-2021 and new meter with serial number Q0333437 was installed on 21-December-2021 hence valid till 20-December-2022

18	KAU99438	L&T	0.2s	Check	Toss	To Measure EG _{Toss}	15-January-2021	14-January-2022	No Delay as this meter was removed on 21-December-2021 and new meter with serial number Q0333467 was installed on 21-December-2021 hence valid till 20-December-2022
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Meters Replaced;

Removed				Installed				
Make	Meter Serial Number	Accuracy Class	Date of removal	Make	Meter Serial Number	Accuracy Class	Date of installation	Location
Secure	HPU06253	0.2s	21-December-2021	Secure	Q0333358	0.2s	21-December-2021	Generating Point Malana G-1 Check Meter
Secure	HPU06254	0.2s	21-December-2021	Secure	Q03333416	0.2s	21-December-2021	Generating Point Malana G-

								2 Check Meter
L&T	KAU99437	0.2s	21-December-2021	Secure	Q0333437	0.2s	21-December-2021	Toss Incomer Main Meter
L&T	KAU99438	0.2s	21-December-2021	Secure	Q0333467	0.2s	21-December-2021	Toss Incomer Check Meter

Assessment on calibration:

The energy meter calibration certificates/11/ and MOMs are checked and found that the calibration details provided in the MR/1/ are correct. From the verification of above tables, verification team also confirms that the energy meter calibrations are valid for the complete monitoring period i.e., from 01-November-2021 to 31-October-2022 (inclusive of both start and end date).

The verification team has checked all the meters and confirmed that the meters were working satisfactorily. Also, the calibration certificates /11/ of meters are completely under purview of state utility and PP has no control over the same as confirmed through interviews of site personnel and PPA signed by the PP with state utility/14/.

Hence it can be concluded that the approach followed by the PP is conservative and in line with the guidelines provided under paragraph 3.4.2 of Validation and Verification Manual version 4.2/21/. The registered VCS Joint PD&MR/3/ & MR /1/ and site audit observations confirm that the metering equipment are sealed and maintained by the state utility.

The assessment team has verified the monthly JMRs issued by the state utility-HPSEBL 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). The formula provided for the calculation of baseline emissions is:

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

Where:

BE_y = Baseline emissions in year y (tCO₂/yr)

$EG_{PJ,y}$ = Net Electricity supplied to the Unified Indian Grid by the project activity during the year y (MWh/yr)

$EF_{grid, CM, y}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the version 07.0 of the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh).

The baseline emissions for the project activity for the current monitoring period are as follows.

Baseline Emission factor = 0.858 tCO₂/MWh

Parameter	Unit	Value
EG _{PJ, y}	MWh	292,871
EF _{grid,CM,y}	tCO ₂ e	0.858
BE _y	=	292,871 MWh x 0.858
	=	251,283 tCO₂e (Round down value)

Project emissions

The project emissions as per the applied methodology para 38 of ACM0002, Version 20.0 /7/ for the project activity are considered zero.

The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation-

$$\left(PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}} \right), \text{ is greater than } 4 \text{ W/m}^2$$

$$\frac{86000000 \text{ W}}{18250 \text{ m}^2}$$

$$= 4712.32 \text{ W/m}^2$$

The calculated value from the above equation is 4712.32W/m² which is greater than 10m², so as per applied methodology for the project activity, there would not be any project emissions.

Leakage emissions

According to the applied methodology no leakage emissions are considered since no energy generating equipment is transferred from another activity and/or the existing equipment is transferred to another activity thus leakage emissions are zero.

The verification team confirms that appropriate methods and formulae for calculating baseline emissions, project emissions and leakage emissions have been followed and total baseline emissions achieved in the current monitoring period are 251,283 tCO₂e.

The assumptions, emission factors and default values that were applied in the calculations are justified. The actual emission reduction achieved are 13.13% less than the estimated figure to match the monitoring period as per registered VCS Joint PD&MR/3/, which is due to the low PLF achieved by the project activity during the current monitoring period which is completely governed by the availability of water and melting of snow which is a natural phenomenon and same is beyond the control of PP.

This comparison is submitted in the ER sheet along with a justification confirming that this event of lower power generation was an unforeseen situation and also not under the direct control of

PP. Since the emission reduction is less than the estimated emission reduction, no further justification is required.

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 and project 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 rating determined by the project proponent for the project activity hence not applicable.

5 VERIFICATION CONCLUSION

M/s VKU Certification Pvt. Ltd. (here after referred as VKU) has performed second verification under third crediting period for the project activity “86 MW Hydro Project in Himachal Pradesh” in India, VCS Registry Project ID 93, for the period from 01-November-2021 to 31-October-2022 (Inclusive of both start and end date), 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 as set out in the VCS Standard Version 4.3/5/.

The project participant (MPCL) of the project “86 MW Hydro Project in Himachal Pradesh” is responsible for:

- The preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered VCS Joint PD&MR/3/ version 3.0 dated 19-July-2022.
- 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 /5/and GHG program applied, on the reported greenhouse gas emission reductions from the project.

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

- The project has been implemented and operated as per the registered VCS Joint PD&MR/3/;

- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard Version 4.3/5/ requirements;
- The monitoring is in place as per the applied baseline and monitoring methodology/7/
- The monitoring plan in the registered VCS Joint PD&MR/3/is as per the applied baseline and monitoring methodology /7/ and tool applicable/29/.

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 has planned and performed the verification by obtaining evidence and other information and explanations that VKU considered necessary to give reasonable level of assurance and that reported GHG emission reductions are fairly stated.

It is VKU's opinion that the GHG emission reduction stated in the final monitoring report version 7.0 dated 09-May-2023/1/ for the "86 MW Hydro Project in Himachal Pradesh" in India for the period from 01-November-2021 to 31-October-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 20.0/7/ and the monitoring plan included in the registered VCS Joint PD&MR, version 3.0 dated 19-July-2022/3/.

Hence VKU is able to certify that the emission reduction for the project during the monitoring period from 01-November-2021 to 31-October-2022 (Inclusive of both start and end dates) amounts to 251,283 tCO₂e.

The following table shows the Net Emission Reduction from 01-November-2021 to 31-October-2022 (Inclusive of both start and end dates) under third crediting period from 05-July-2021 to 04-July-2031 (Inclusive of both dates).

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
Year 2021 (01-November-2021 to 31-December-2021)	15,038	0	0	15,038
Year 2022 (01-January-2022 to	236,245	0	0	236,245

31- October- 2022)				
Total	251,283	0	0	251,283

APPENDIX A: ABBREVIATIONS

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
MPCL	Malana power Company Limited
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	12-January-2023
CL#01	Reference	Section 01/DR Section 02/DR Section 03/DR Section 04/DR
Description of the Non-Conformance		
In section 1.9 of MR; PP is requested to submit the REC certificate and also provide a declaration confirming that they are not participating in any other GHG program and I-REC during the current monitoring period. PP is also requested to update the claimed values mentioned in the table below for the duration between 01-January-2016 to 24-June-2019. Also, Assessment team has checked the I- REC website and found that the credits were claimed for the year 2020 as well, kindly include them as well. In section 1.10 of MR; PP is requested to submit the declaration stating they are not claiming any other form of GHG related environmental credits and other form of emission trading and other binding limits In section 2.2 of MR; PP is requested to submit the photograph of grievance register showing the grievances of stakeholders in current monitoring period. In section 3.1of MR; PP is requested to provide the technical specification for turbine generator. In section 4.3 of MR; PP is requested to submit the authenticated latter given by HPSEBL on October 12, 2009, in order to calculate auxiliary usage and transmission losses. In section 4.3 of MR; PP is requested to submit the O&M contract		
1 st Response from PP	Date	18-January-2023
In section 1.9 of MR; I-REC certificate has been submitted along with declaration that they are not participating in any other GHG program during current monitoring period. Claimed values has been mentioned in the table for the duration between 01-January-2016 to 24-June-2019. Also, Value for the year 2020 has been updated in the table. In section 1.10 of MR: The declaration stating of not claiming credits from any other GHG program has been submitted along with other form of emission trading and other binding limits. In section 2.2 of MR: The Photograph of grievance register showing grievances of stakeholders in current monitoring period has been submitted In section 3.1 of MR: Technical specification of turbine has been added.		

In section 4.3 of MR: The authenticated letter given by HPSEBL on October 12, 2009, in order to calculate auxiliary usage and transmission losses has been submitted In section 4.3 of MR: As the O&M is done by the in-House maintenance team hence no O&M contract is present.				
1stAssessment by Audit Team	Status	Open	Date	20-January-2023
In section 1.9 of MR; PP has not submitted the I-REC certificate and declaration to assessment team as of now (OPEN) In section 1.10 of MR: PP has not submitted the declaration to assessment team as of now. (OPEN) In section 2.2 of MR: Assessment team confirms that PP has submitted the Photograph of grievance register showing grievances of stakeholders in current monitoring period. However, PP is requested to mention the grievances raised by local stakeholders in current monitoring period as per the grievance register photograph submitted to assessment team. Kindly include the details in Local stakeholder section as per the VCS MR template guideline version 4.1. (OPEN) In section 3.1of MR: Assessment team confirms that PP has updated the technical specification of turbine and found to be in line with the registered VCS Joint PD&MR. Hence accepted. In section 4.3 of MR: Assessment team confirms that PP has submitted the authenticated letter given by HPSEBL on October 12, 2009, in order to calculate auxiliary usage and transmission losses and found that all the calculations are in line with the document submitted by PP in MR and ER sheet, hence accepted. In section 4.3 of MR: Assessment team confirms that the operation and maintenance is done by in-House maintenance team hence no O&M contract is present at site, which was also confirmed at site during onsite visit. Hence accepted. However, PP is referring to a project document in the O&M contract and training section in 4.3 section of MR. Please clarify the purpose of the document referred here. (OPEN) CL#01 is OPEN				
2nd Response from PP			Date	23-January-2023
In section 1.9 of MR, as no I-REC trading has been done for current monitoring from 1/11/2021 to 31/10/2022 hence no certificates are present. Also, declaration is also provided that no claiming is done for current monitoring period. In section 1.10 of MR The declaration has been submitted to assessment team. In section 2.2 of MR: Details of grievance has been included in Local Stakeholder section				

In section 4.3 of MR: The referred document is Joint PDMR, the same has been updated in the current MR.				
2 nd Assessment by Audit Team	Status	Open	Date	24-January-2023
In section 1.9 of MR, PP is requested to update this section as per the MR template version 4.1 as this section deals with other GHG Program. Kindly clarify how the I-REC mechanism data is valid in this section. (OPEN) Also, if the project is registered in other registry kindly mention the same in this section. (OPEN) In section 1.10 of MR PP is requested to update this section as per the MR template version 4.1 and Kindly mention about the declaration in the section as well. (OPEN) In section 2.2 of MR: Details of grievance has been included in Local Stakeholder section. (OPEN) In section 4.3 of MR: Assessment team confirms that PP has revised the MR and stated the correct document reference in this section. Hence accepted. CL#01 is Open				
3 rd Response from PP			Date	25-January-2023
In Section 1.9 of MR, the section has been updated according to VCS MR template version 4.1, also the declaration has been mentioned stating no other I-REC accounted is taken into consideration. Also, the declaration has been mentioned that this project is not registered in any other registry. In Section 1.10 of MR, the section has been updated according to VCS MR template 4.1, and declaration has been mentioned In Section 2.2 of MR, the grievance section has been revised and changes has been done.				
3 rd Assessment by Audit Team	Status	Closed	Date	31-January-2023
In Section 1.9 of MR, Assessment team confirms that PP has updated this section according to VCS MR template version 4.1 and found to be in line with the guidelines. Hence accepted. The declaration for not receiving any other kind of GHG credits and claiming any kind of other benefits and REC benefits is also submitted by PP. Hence accepted. In Section 1.10 of MR, Assessment team confirms that PP has updated this section according to VCS MR template version 4.1 and found to be in line with the guidelines. Hence accepted. The declaration for not receiving any other kind of GHG credits and claiming any kind of other benefits and REC benefits is also submitted by PP. Hence accepted.				

In **Section 2.2 of MR**, Assessment team confirms PP has updated this section and included the details of grievances raised during current verification. Hence accepted.

Hence CL#01 is Closed

Type	Date	20-January-2023
CL#02	Reference	Section 01/DR Section 02/DR Section 03/DR Section 04/DR
Description of the Non-Conformance		
In section 1.2 of MR; PP is requested to clarify how methodology can be considered as project category In section 2.1.1 of MR; PP is requested to clarify, if any methodology and project description deviation were raised in previous monitoring periods as per the VCS MR template version 4.1 In section 4.1 of MR; PP is requested to clarify the purpose of the footnote mentioned for all fixed Ex-Ante emission factors mentioned in revised MR version 02. In section 4.2 of MR; PP is requested to clarify the purpose of putting all the net electricity delivered for each month of the monitoring period for all monitored parameters in section 4.2. Also, kindly clarify, why the unit used is KWh instead the unit used to monitor the value is MWh		
1 st Response from PP	Date	23-January-2023
In section 1.2 of MR; Category has been added, the section has been revised and corrected In section 2.1.1 of MR, no methodology and project description deviation were raised in previous monitoring periods as per as the VCS MR template 4.1 and clarification has been sorted In section 4.1 of MR, the purpose of footnote was as the grid emission has been changed from 2nd crediting period to third crediting period, hence the footnote contains the link of CEA database, version 17 as a proof. In section 4.2 of MR, the whole section has been corrected and revised.		
1 st Assessment by Audit Team	Status	Open
	Date	24-January-2023
In section 1.2 of MR; PP has updated the Category in the section and found to be correct. Hence Accepted.		

In section 2.1.1 of MR, PP has updated the section but it is still not as per the VCS MR template version 4.1 guideline. (OPEN)

In section 4.1 of MR, PP has updated the footnotes applicable in section 4.1 and only the CEA database version 17.0 link is available which are in relevance to the section. Hence accepted.

In section 4.2 of MR, PP has updated all the monitoring parameters however, PP is requested to kindly include the sum of total values in the ER Sheet for all the parameters. (OPEN)

CL#02 is Open

2 nd Response from PP		Date	25-January-2023	
In section 2.1.1 of MR, the whole section has been revised according to VCS template 4.1 In section 4.1 of MR, all the values have been summarized and the sum of total values has been included in in the ER sheet				
2 nd Assessment by Audit Team	Status	Closed	Date	31-January-2023

In section 2.1.1 of MR, Assessment team confirms that PP has updated the section in accordance with the VCS MR template version 4.1 guidelines. Hence accepted

In section 4.2 of MR, Assessment team confirms that PP has updated all the monitoring parameters in revised MR version 4.0 and included the sum of total values in the revised ER version 02 for all the parameters and the values are found consistent in both documents. Hence accepted.

Hence CL#02 is Closed.

Type	Date	09-May-2023
CL#03	Reference	Section 01/DR Section 04/DR
Description of the Non-Conformance		
In section 1.11 of MR; PP is requested to mention the ERs monitoring period wise for clear identification in both crediting periods for each CDM and VCS mechanisms. In section 4.2 of MR; Assessment team confirms through desk review that the calibration frequency for this parameter is mentioned as once in 3 years as per the registered VCS PD&MR and previous VCS PDs. PP is requested to clarify how the calibration frequency for this parameter is considered once in a year in the current monitoring period. Provide the annual calibration certificates for the same. In section 4.3 of MR; PP is requested to clarify if this calibration frequency is valid for all the energy meters.		
1st Response from PP	Date	09-May-2023

In section 1.11 of MR; Values of ER has been mentioned monitoring period wise for both crediting periods.

In section 4.2 of MR; Meters are calibrated annually as per actual site practices. And we have also taken deviation for the same in section 3.2.2 of the monitoring report.

In section 4.3 of MR; Meters are calibrated annually for all the energy meters, as per actual site practices. And we have also taken deviation for the same in section 3.2.2 of the monitoring report.

1st Assessment by Audit Team	Status	Closed	Date	11-May-2023
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In section 1.11 of MR; Assessment team confirms that PP have mentioned the values monitoring period wise in MR section 1.11 which have been verified by the MRs of the respective monitoring periods available on project webpage. Hence accepted.

In section 4.2 of MR; Assessment team confirms that all meter's calibration certificates are submitted earlier and it confirms that they were calibrated annually and PP have also taken deviation for the same in section 3.2.2 of the monitoring report which is verified by team and accepted that this is as per current site practice. Hence accepted.

In section 4.3 of MR; Assessment team confirms that PP have taken a deviation as explained in above finding and following the same PP have updated the calibration detail in section 4.3. Hence accepted.

Hence CL#03 is Closed

Type	Date	12-January-2023
CAR#01	Reference	MR Template Section 01/DR Section 04/DR
Description of the Non-Conformance		
On title Page of MR; PP is requested to kindly confirm if they have provided the correct monitoring report to assessment team for verification. On title Page of MR; PP is requested to update the font style as per MR template version 4.1 In section 1.2 of MR; PP is requested to update the font colour In section 1.3 of MR; PP is requested to kindly remove the guidance instructions throughout the MR. In section 1.3 of MR; PP is requested to update font size as per the MR template version 4.1		

In section 1.6 of MR; PP is requested to state the type of crediting period as well in this section as per the VCS standard v 4.3				
In section 1.11 of MR; PP is kindly requested to update the unit in section 4.1.				
In section 4.1 of MR; PP is requested to use the consistent font style throughout the tables.				
1 st Response from PP		Date	18-January-2023	
On title Page of MR: The corrected monitoring report has been provided to the assessment team.				
On title Page of MR: The font style has been updated according to MR template Version 4.1				
In section 1.2 of MR: The font colour has been updated				
In section 1.3 of MR: The font size has been updated as per the MR template version 4.1				
In section 1.6 of MR: The type of crediting period has been stated as per the VCS standard version 4.3				
In section 1.11 of MR: The unit has been updated in section 4.1				
In section 4.1 of MR; The font style has been made consistent throughout the table.				
1 st Assessment by Audit Team	Status	Open	Date	20-January-2023
On title Page of MR: Assessment team confirms that there was an editorial correction in Monitoring period which is now corrected in revised monitoring report version 02 submitted to the assessment team. Hence accepted.				
On title Page of MR: Assessment team confirms that PP has updated the MR title page according to MR template Version 4.1. Hence accepted.				
PP is requested to update the content table as per the VCS MR template version 4.1. (OPEN)				
In section 1.2 of MR: Assessment team confirms that PP has updated the font colour in entire according to MR template Version 4.1. Hence accepted.				
In section 1.3 of MR: Assessment team confirms that PP has updated the font size in section 1.3 of MR according to MR template Version 4.1. Hence accepted				
In section 1.6 of MR: Assessment team confirms that PP has updated the type of crediting period in section 1.6 of MR according to the VCS standard version 4.3. Hence accepted				
In section 1.11 of MR: Assessment team confirms that PP has updated the unit in section 4.1 of revised MR version 02. Hence accepted.				
In section 4.1 of MR; Assessment team confirms that PP has updated the font style throughout the table in section 4.1 of revised MR version 02. Hence accepted.				
CAR#01 is OPEN				

2 nd Response from PP			Date	23-January-2023
The content table has been updated according to VCS MR version 4.1				
2 nd Assessment by Audit Team	Status	Closed	Date	24-January-2023
The content table has been updated by PP and thus accepted by assessment team.				
CAR#01 is Closed				

Type	Date	12-January-2023
CAR#02	Reference	Section 01/DR Section 02/DR Section 03/DR Section 04/DR Section 05/DR
Description of the Non-Conformance		
In section 1.7 of MR; The Geo-coordinates mentioned in this MR are consistent with the Joint PD&MR version 1.1 dated 19-07-2022.but assessment team couldn't trace them using google earth. So, PP is further requested to correct the geocoordinates. In section 1.11 of MR PP is requested to provide the reference of the emission reductions prevented the over life time for this project activity, kindly mention here the values for all the monitoring period separately In section 2.1 of MR; Why this section is not applicable? Please justify. In section 2.2 of MR; PP is requested to update this section according to the VCS MR template version 4.1 and why this date 19-04-2017 mention here. PP is kindly requested you mention the local stakeholder consultation date. In section 2.3 of MR; Justify and elaborate it. In section 3.1 of MR; PP is requested to update the implementation status of the project activity as per VCS MR template version 4.1 In section 4.1 of MR; PP is requested to clarify the use of two tables for each emission factor involved in project activity in section 4.1 of MR In section 4.2 of MR; PP is kindly requested to include all monitored parameters in the current monitoring report after the assessment team determined that some monitored parameters are not mentioned in the report for the current monitoring period, as Joint PD&MR.		

In section 4.2 of MR Monitoring equipment and QA/QC procedure has been added.				
In section 4.2 of MR Accuracy class has been updated				
In section 4.2 of MR Parameter has been updated				
In section 4.3 of MR emergency preparedness has been mentioned according to VCS MR Version 4.1				
In section 5.1 of MR values of EG _{PJ, facility,y} has been revised according to current ER sheet.				
In section 5.4 of MR; the value has been made consistent with the ER				
1 st Response from PP		Date	18-January-2023	
In section 1.7 of MR: The Geo-coordinates has been checked and revised along with google map photograph.				
In section 1.11 of MR: The reference of the emission reductions prevented for third crediting period has been updated in the MR sheet				
In section 2.1 of MR: The justification of why this section is not applicable has been updated.				
In section 2.2 of MR has been updated according to the VCS MR template version 4.1 and explanation of this date 19-04-2017 has been given. Local stakeholder consultation date has been submitted.				
In section 2.3 of MR Section has been explained.				
In section 4.1 of MR correction has been made.				
In section 4.2 of MR Project implementation status has been updated according to MR version 4.1. All missing parameters are also added in the MR sheet for current monitoring period according to latest PD MR.				
In section 4.2 of MR Monitoring equipment and QA/QC procedure has been added.				
In section 4.2 of MR Accuracy class has been updated				
In section 4.2 of MR Parameter has been updated				
In section 4.3 of MR emergency preparedness has been mentioned according to VCS Mr Version 4.1				
In section 5.1 of MR values of EG _{PJ, facility,y} has been revised according to current ER sheet.				
In section 5.4 of MR; the value has been made consistent with the ER				
1 st Assessment by Audit Team		Status	Open	Date 20-January-2023

In section 1.7 of MR: Assessment team confirms that the Latitude and longitude are still not verifiable, kindly update the Geo Co-ordinates appropriately. (OPEN)

In section 1.11 of MR: Assessment team confirms that has provided the reference of the emission reductions prevented for third crediting period has been updated in the revised MR version 02.

- PP is requested to mention the energy generated in a similar way as done for tonnes of greenhouse gas emissions avoided or removed.
- Also, PP is requested to clarify the relevance of mentioning the value 272,831 in 13-SDG target. (OPEN)

In section 2.1 of MR: As per the mentioned justification in report provided by PP, the project does not cause any harm to the environment.

1. Provide the link for the notification mentioned.
2. PP is requested not to mention the entire notification details and if done kindly include the provide that with respect to the project activity.
3. While the project country does not require the project to undertake EIA, section 3.17.2 of the VCS Standard v4.3 requires a project to identify the potential negative impact. PP is requested to comply with this requirement. (OPEN)

In section 2.2 of MR Assessment team confirms that PP has updated the MR according to the VCS MR template version 4.1 and explanation of this date 19-04-2017 has been given.

However, PP is requested to mention the grievances raised by local stakeholders in current monitoring period as per the grievance register photograph submitted to assessment team. Kindly include the details in Local stakeholder section as per the VCS MR template guideline version 4.1.

Also, in this section the description is consistent with VCS PD&MR but it is not relevant to the local stakeholder consultation and it is not the date of local stakeholder consultation. Kindly explain the reason for the same. (OPEN)

In section 2.3 of MR Assessment team confirms that PP has updated the Section in revised MR version 02. Hence accepted.

In section 4.1 of MR Assessment team confirms that PP has updated the tables in Section 4.1 in revised MR version 02. However, PP is requested to kindly update the font style of the footnotes. (OPEN)

In section 4.2 of MR Assessment team confirms that PP has updated all the missing parameters in the revised MR for current monitoring period according to VCS Joint PD&MR. Hence accepted.

In section 4.2 of MR; Assessment team confirms that PP has updated the monitored equipment and QA/QC procedures to be applied in revised MR version 02. Hence accepted

In section 4.2 of MR; Assessment team confirms that PP has updated the accuracy class and found acceptable as per the calibration certificate. Hence accepted.

In section 4.2 of MR; Assessment team confirms that PP has updated the revised MR and included all the parameters as per the registered VCS Joint PD&MR. Hence accepted.

In section 4.3 of MR; Assessment team confirms that PP has updated the Emergency Preparedness as per VCS MR template version 4.1. Hence accepted.

In section 5.1 of MR; Assessment team confirms that PP has updated the value of EG_{PJ, facility,y} according to the VCS Joint PD&MR and ER sheet. Hence accepted.

In section 5.4 of MR; Assessment team confirms that PP has updated the value in this section as per the revised ER sheet, hence accepted.

CAR#02 is Open

2nd Response from PP	Date	23-January-2023
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In section 1.7 of MR; Photographs of latitude and longitude along with google map coordinated has been added.

In section 1.11 of MR;

- energy section has been changed in similar way as emission reduction has been done.
- The value 272,831 in 13-SDG target has been removed

In section 2.1 of MR; proper revision has been made along with required changes.

In section 2.2 of MR; the local stake holder was done in 1997, as this is government project, hence public hearing was conducted for meeting with the local stake-holders. This was mandatory requirement by the Central Pollution Control Board, same is updated in MR.

In section 4.1, the font style of footnote has been updated.

2nd Assessment by Audit Team	Status	Open	Date	24-January-2023
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In section 1.7 of MR; PP is requested to kindly make the Geo Coordinates consistent as per actual Coordinates in pictures provided in revised MR version 03. (OPEN)

In section 1.11 of MR;

- PP is requested to mention about the electricity supplied to grid by the project in the entire project lifetime and similarly the Tonnes of greenhouse gas emissions avoided or removed by the project activity in its lifetime. (OPEN)
- PP has updated the SDG-13 target, hence accepted.

In section 2.1 of MR; The section has been updated but it is not consistent with the MR template version 4.1 guidelines and the registered VCS PD version 3.0 dated 20/03/2012.

The project is a large-scale hydro project as mentioned by PP and it falls under Category A project hence EIA is compulsory; Hence, PP is requested to update this section according to the VCS MR template guideline and VCS Standard version 4.3 (OPEN).

In section 2.2 of MR; Although changes have been done by PP, but the section is not as per the VCS MR template version 4.1. The sequence of Information is not as per the MR template version 4.1 guideline for this section. (OPEN).

- PP is requested to clarify how this statement in this section is correct and valid when 3 grievances were raised by PP in current monitoring period (OPEN).

In section 4.1, PP has updated the font style of footnote. Hence Accepted.

CAR#02 is Open

3rd Response from PP	Date	25-January-2023
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In section 1.7 of MR, the Geo-coordinates has been made consistent as per as actual coordinates

In section 1.11 of MR, all the net generated electricity and reduced emission has been mentioned for the entire project life cycle up to current monitoring Period

In section 2.1 of MR, EIA has been mentioned and described.

In section 2.2 of MR, the section has been made consistent according to MR template 4.1

The statement has been revised and proper clarification has been given

In section 4.1 of MR, the font style in footnote is updated.

3rd Assessment by Audit Team	Status	Closed	Date	31-January-2023
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In section 1.7 of MR, Assessment team confirms that the Geo-coordinates of the project activity is now consistent with the actual coordinates at site. Hence accepted.

In section 1.11 of MR, Assessment team confirms that PP has updated the net generated electricity and reduced emission for the entire project life cycle up to current monitoring period in revised MR version 4.0. Hence accepted.

In section 2.1 of MR, Assessment team confirms that PP has updated the section and made it consistent with the guidelines of MR template guideline for this section. Hence accepted.

In section 2.2 of MR, Assessment team confirms that PP has updated the section and made it consistent with the guidelines of MR template guideline for this section. Hence accepted.

Assessment team confirms that PP has revised this section and included all the grievances raised in current monitoring period in revised MR version 4.0 hence accepted.

In section 4.1 of MR, Assessment team confirms that the font style in footnote is updated in revised MR version 4.0. Hence accepted.

Hence CAR#02 is Closed

Type	Date	12-January-2023		
CAR#03	Reference	Section: Appendix 1 ER SHEET/DR/OSV		
Description of the Non-Conformance				
In ER SHEET; - 1. The emission factor used in the ER sheet is not in line with the registered VCS PD. PP is requested to correct the same. 2. PP is requested to update the value for the month November 2021. This value is inconsistent with the JMR. 3. PP is requested to update the value for the month April 2022. This value is inconsistent with the JMR. 4. PP is requested to submit the Invoices for the cross verification 5. PP is requested to explain why auxiliary consumption is subtract twice for calculation of net electricity supplied to the NEWNE grid by the project activity. 6. PP is requested to provide the reference for the applied formula. 7. The values of all the monitored parameters are not presented in the ER calculation sheet as per the monitoring plan in section 4.2 of the registered VCS Joint PD&MR. PP is requested to present the values of all the monitored parameters and calculated parameters in the ER calculation sheet and the MR In Appendix 1 (METER CAIBRATION DETAILS) of MR: PP is requested to update the meter calibration details separately as they are inconsistent with the calibration certificate and also submit the meter replacement certificate				
1 st Response from PP	Date	18-January-2023		
1. The emission factor used in the ER sheet has been made in line with registered VCS Joint PD&MR 2. The value has been made consistent for the month of November 2021 3. The value for the month of April 2022 has been made consistent according to JMR 4. The invoices have been submitted for cross verification. 5. The calculation of auxiliary consumption has been made according to registered VCS Joint PDMR. 6. The reference formula has been added. The calculation is made according to joint VCS PDMR. 7. The values of all monitored parameters are present according to registered joint PD&MR. In Appendix 1 (METER CAIBRATION DETAILS) of MR; A separate column has been made for changed meter and replacement certificates of those have been submitted.				
1 st Assessment by Audit Team	Status	Open	Date	24-January-2023
Assessment team confirms that: -				
1. PP has updated the emission factor used in the ER sheet according to the registered VCS Joint PD&MR. Hence accepted. 2. PP has updated the value for the month November 2021. Hence accepted. 3. PP has updated the value for the month April 2022. Hence accepted. 4. PP has submitted the Invoices for cross verification. Hence accepted.				

5. PP has provided the summary calculation formulas in revised ER sheet and hence the raised clarification is resolved. Hence accepted.
6. PP has provided the summary calculation formulas in revised ER sheet and also submitted the auxiliary consumption formulas according to the MOM submitted. Hence accepted.
7. PP has provided the values of all the monitored parameters are now presented in the revised ER calculation sheet as per the monitoring plan in section 4.2 of the registered VCS Joint PD&MR.

In Appendix 1 (METER CAIBRATION DETAILS) of MR; PP has updated the meter calibration details; however, PP is requested to update the meter details in a clear way stating the different meter and its locations in MR as per project site. (OPEN).

CAR#03 is Open

2 nd Response from PP		Date	25-January-2023	
In Appendix 1 (METER CAIBRATION DETAILS) of MR; Proper details have been provided as per as JMR and project site				
2 nd Assessment by Audit Team	Status	Closed	Date	31-January-2023
In Appendix 1 (METER CAIBRATION DETAILS) of MR; Assessment team confirms that PP has updated the meter calibration details in revised MR version 4.0 in a clear and concise manner which is found to be consistent with the meter calibration certificates submitted. Hence accepted.				
Hence CAR#03 is Closed				

Type	Date	20-January-2023
CAR#04	Reference	Section 05/DR
Description of the Non-Conformance		
In section 5.1 of MR; PP is requested to mention the reference of the calculation stated here according to the VCS Joint PD&MR and monitoring plan. In section 5.2 of MR; PP is requested to clarify which document are they referring here where they have presented the calculation in section 4.2 above as in this report no calculation is provided in section 4.2. In section 5.3 of MR; PP is requested to mention the reference para of the methodology used which states that leakage emissions are not required for this kind of project activity. In section 5.4 of MR; PP is requested to summarize the results and mention the decrease or increase in ERs achieved in current monitoring period.		

1 st Response from PP		Date	23-January-2023	
In section 5.1 of MR; The reference of the calculation has been stated according to VCS Joint PDMR In Section 5.2 of MR; the section has been revised and correction has been made. Also, calculation has been shown according to CDM ACM0002 In section 5.3 of MR; the reference para has been taken from ACM0002 and the same has been mentioned in current VCS MR In section 5.4 of MR, a separate table has been provided which shows summarized result also the increase and decrease in ERs achieved has been shown in thar table.				
1 st Assessment by Audit Team	Status	Open	Date	24-January-2023
In section 5.1 of MR; PP has updated the reference of the calculation in this section however, PP is requested to clarify how methodology version 21.0 is applicable instead of version 20.0 which is applied in section 1.8 of this report and in VCS Joint PD&MR. (OPEN). In Section 5.2 of MR; PP has updated the reference of the calculation in this section however, PP is requested to clarify how methodology version 21.0 is applicable instead of version 20.0 (OPEN). In section 5.3 of MR; PP has updated the reference of the calculation in this section however, PP is requested to clarify how methodology version 21.0 is applicable instead of version 20.0 (OPEN). In section 5.4 of MR, PP has stated a separate table for summarizing the result of ERs achieved which is found consistent with the ER sheet submitted. Hence accepted. CAR#04 is Open				
2 nd Response from PP		Date	25-January-2023	
In Section 5.1 of MR; the version number has been revised and corrected to 20.0 In Section 5.2 of MR; the version number has been revised and corrected to 20.0 In Section 5.3 of MR; the version number has been revised and corrected to 20.0				
2 nd Assessment by Audit Team	Status	Closed	Date	31-January-2023
In Section 5.1 of MR; Assessment team confirms that PP has updated the version number of methodology in revised MR version 4.0 submitted and it is found to be consistent with the methodology applied in Joint VCS PD&MR. Hence accepted.				

In Section 5.2 of MR; Assessment team confirms that PP has updated the version number of methodology in revised MR version 4.0 submitted and it is found to be consistent with the methodology applied in Joint VCS PD&MR. Hence accepted.

In Section 5.3 of MR; Assessment team confirms that PP has updated the version number of methodology in revised MR version 4.0 submitted and it is found to be consistent with the methodology applied in Joint VCS PD&MR. Hence accepted.

Hence CAR#04 is Closed

Type	Date	24-January-2023
CAR#05	Reference	Section: 01/DR/ Appendix 2/DR/ Appendix 3/DR/ ER SHEET/DR/
Description of the Non-Conformance		
In Section 1.1 of MR; PP is requested to update the value of electricity supplied and GHGs reduced in current monitoring period as per the ER sheet submitted to assessment team. In Section 4.3 of MR; PP is requested to provide the purpose of invoices as there is no involvement of invoices mentioned in any monitoring parameter and it is also not mentioned in ER sheet. Kindly include the procedure in section 4.2 and ER sheet as per the actual scenario Also, as per the submitted documents by PP and site visit conducted, Assessment team confirms that the electricity is not directly supplied to grid as stated in the registered VCS PD&MR. This scenario is a deviation from the existing practice as it is now freely traded through Open access portal on bidding basis. Hence PP is requested to provide the PPA that was in place and clarify if this is still in practice and also submit the invoices against the entire JMRs provided. In ER SHEET; PP is requested to mention the total of all the values in the ER calculation sub-sheet for cross referencing in the MR. In Appendix-2; PP is requested to update the meter details of replaced meter with new installed meters as per the meter replacement certificates submitted. In Appendix-3; PP is requested to mention the breakdown details of the project for the entire monitoring period.		
1 st Response from PP	Date	25-January-2023
In section 1.1 of MR; the value of electricity supplied and GHGs reduced in current monitoring period has been updated as per the ER sheet		

In section 4.3 of MR; As per registered PD&MR, section 3.5, “The Project activity is a run-of-the-river hydel project which supply power through the NR Grid (Now synchronized with NEWNE grid).” Presently PP is selling electricity through bidding process by supplying power through NEWNE Grid (which is now Indian Grid). Hence it is not deviated from the registered VCS PD&MR. PPA and invoices has already been submitted.

In ER Sheet, the total of all the values has been mentioned in the ER calculation sub-sheet for cross referencing in the MR.

In Appendix -2; It has been done according to meter change certificate.

In Appendix -3; It has been done for entire monitoring period

1stAssessment by Audit Team	Status	Open	Date	31-January-2023
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In section 1.1 of MR; Assessment team confirms that PP has updated the value of electricity supplied and GHGs reduced in current monitoring period as per the ER sheet. Hence accepted.

In section 4.3 of MR; PP has provided the explanation for the cross-checking mechanism and reliability of the data and thus invoices for cross checking are submitted. However, they are not provided for entire monitoring period. Hence PP is requested to provide the invoices and also include the same in ER sheet for cross verification of the values as per the registered monitoring plan. (OPEN)

In ER Sheet, Assessment team confirms that PP has revised the ER sheet and the total of all the values of parameters referred in MR have been mentioned in the ER sheet. Hence accepted.

In Appendix -2; Assessment team confirms that PP has updated the meter change details as per the meter change certificates submitted in the revised MR version 4.0 submitted to team. Hence accepted.

In Appendix -3; Assessment team confirms that PP has mentioned the breakdown details for the entire monitoring period and the total hours in the revised MR version 4.0 submitted to team. Hence accepted.

Hence CAR#05 is Open

2nd Response from PP	Date	01-February-2023
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In section 4.3 of MR; the invoices have been submitted for cross-verification purpose and it has been included for the entire monitoring period and in the ER sheet as well.

2nd Assessment by Audit Team	Status	Closed	Date	03-February-2023
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In section 4.3 of MR; Assessment team confirms that PP has submitted the invoices for cross-verification purpose for the entire monitoring period and the values have been included in the revised ER version 03 and found to be consistent with the provided records. Hence accepted.

Hence CAR#05 is Closed

Type	Date	15-February-2023
CAR#06	Reference	Section: 01/DR/ Appendix 2/DR/ Appendix 3/DR/ ER SHEET/DR/
Description of the Non-Conformance		
In Section 1.1 of MR; The project description does not mention about the arrangement at the project site towards measurement of energy due to the HEP at Toss which is also supplying energy to the grid via substation using common bus bar at Malana switch yard. In Section 1.7 of MR; Please clarify whether this is plant boundary or project boundary? In Section 1.10 of MR; Please clarify the duration for this year 2020! In Section 1.11 of MR; - As per the MR template, PP is requested to provide an explanation of how project activities result in SD contributions listed in Table 1. - PP is also requested to identify which SD contributions described in Table 1 contribute to nationally stated SD priorities including any provisions for monitoring and reporting the same. - PP is requested to revise the entire section based on the guidance to fill the MR template! - Please state the parameter that the column heading is referring to - This is not consistent with the ER sheet submitted. PP is requested to clarify In Section 2.1 of MR; - Please use consistent date format throughout the MR - Please strive to draft sentences in a grammatically consistent manner. In Section 3.1 of MR; This is not consistent with the ER sheet provided. In Section 4.2 of MR; - The format is not as per the MR template - Please use consistent terms against the registered Joint Validation and Verification Report. - As per ER sheet: $EG_{Gen,malana} - EG_{Aux,Malana} = 324,451 - 531 = 323,921$ MWh. Please clarify? - Please clarify this term as it is not found in any of the terms or description.		

In Section 4.3 of MR;

- The project boundary diagram shows the grid as NEWNE, while in rest of the report it is mentioned as unified grid
- In the diagram it shows that the project boundary and plant boundary are same which is not consistent as per the methodology ACM 0002 version 20.0 please clarify
- The number of meters used in the project activity is not clearly mentioned, since HEP at Toss also supplies energy via the same bus bar to the sub-station and there is auxiliary consumption involved.

In Appendix Section of MR;

- Please include a column to explain the purpose of the meter in Appendix-1
- Please include a column to provide due date of calibration in Appendix-1
- Date of removal and date of reinstallation is not mentioned in Appendix-2

1st Response from PP

Date

23-February-2023

In Section 1.1 of MR; The parameters for measuring energy are given in section 4.2. Also, the letter mentioning the calculation is submitted.

In Section 1.7 of MR; it has been clarified and project boundary has been revised into plant boundary

In Section 1.10 of MR; The duration has been mentioned for the year 2020.

In Section 1.11 of MR;

- The section is revised according to MR template.
- SDG contribution has been described according to Table 1 of MR template has been identified according to nationally stated SD priorities.
- Entire section has been revised according to MR template.
- The parameter has added.
- The values have been made consistent according to ER sheet.

In Section 2.1 of MR;

- Consistent Date format has been used in the entire MR format
- Grammatically correct sentence has been strived

In Section 3.1 of MR; The value has been made consistent with the ER

In Section 4.2 of MR;

- The format has been made as per as MR template
- The terms are in consistent according to joint PD & MR
- The value of EG_{Malana} has been made in line with the ER sheet
- The term has been maintained in the monitoring parameter and value has been taken from Registered Joint PD & MR. Also, the letter of calculation has been shared.

In Section 4.3 of MR;

- When the project was listed in 2012, the Indian grid or unified grid came into existence in 31st Dec, 2013, prior to that there was only two grids NEWNE and southern Grid. Hence in joint PD & MR it is mentioned as NEWNE so the same has been mentioned in this MR.

- It is project boundary. According to para 20 of ACM0002, version 20, “The spatial extent of the project boundary includes the project power plant/unit and all power plants/units connected physically to the electricity system that the CDM project power plant is connected to.” In this image it clearly shows plant and unit, hence it is plant boundary.
- The number of meters used in this project activity has been given in APPENDIX 1: Meter calibration details and single line diagram mentioning the position of the meter has been added in the MR. Also, the auxiliary power consumption is calculated value for which the letter of calculation is submitted.

In Appendix Section of MR;

- Column to explain the purpose of the meter in Appendix-1 has been added.
- Column to provide due date of calibration in Appendix-1 has been added.
- Date of removal and date of reinstallation has been mentioned in Appendix-2

1 st Assessment by Audit Team	Status	Closed	Date	27-February-2023
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In Section 1.1 of MR; Assessment team confirms that the parameters for measuring energy are given in section 4.2 and the calculation is based on the letter already submitted by PP to assessment team. Hence accepted.

In Section 1.7 of MR; Assessment team confirms that the diagram in this section specifies that it is the project boundary. Hence accepted.

In Section 1.10 of MR; Assessment team confirms that PP has updated the duration of the year 2020 and it has been included in section 1.10. Hence accepted.

In Section 1.11 of MR;

- Assessment team confirms that PP has revised the section according to MR template. Hence accepted.
- Assessment team confirms that PP has updated the SDG contributions according to Table 1 of MR template and all nationally stated SD priorities which needs to be addressed are addressed properly now in revised MR. Hence accepted.
- Assessment team confirms that PP has revised the entire section according to MR template. Hence accepted.
- Assessment team confirms that PP has updated the parameters in table 1 of SDG.
- Assessment team confirms that PP has updated the values in Table 1 of SDG and they have been made consistent according to ER sheet. Hence accepted.

In Section 2.1 of MR;

- Assessment team confirms that PP has revised the MR and Consistent Date format has been used in the entire revised MR version 06. Hence accepted.
- Assessment team confirms that PP has revised the MR and Grammatically correct sentence has been used in this section. Hence accepted.

In Section 3.1 of MR; Assessment team confirms that PP has revised the value in revised MR and it has been made consistent with the ER sheet. Hence accepted.

In Section 4.2 of MR;

- Assessment team confirms that PP has revised the format and it has been made as per as MR template. Hence accepted.
- Assessment team confirms that PP has revised the terms and now they are consistent with the VCS Joint PD & MR. Hence accepted.
- Assessment team confirms that PP has revised the value of EG_{Malana} and it has been made in line with the ER sheet. Hence accepted.
- Assessment team confirms that PP has updated the terms and now it can be cross verified with the available data and parameters monitored and it is consistent with the Registered VCS Joint PD & MR. Hence accepted.

In Section 4.3 of MR;

- Assessment team confirms that the information is in line with the registered VCS Joint PD&MR. Hence accepted.
- Assessment team confirms that PP has provided the single line diagram to support show the metering arrangement and project boundary and this is also in line with the methodology; ACM0002, version 20, Hence accepted.
- Assessment team confirms that PP has provided the single line diagram to show the number of meters used in this project activity and the details are also updated in APPENDIX 1; Hence accepted.

In Appendix Section of MR;

- Assessment team confirms that PP has updated the appendix-1 and inserted a column to explain the purpose of the meter in Appendix-1 which is found to be acceptable with the line diagram stated above in section 4.3. Hence accepted.
- Assessment team confirms that PP has updated the appendix-1 and inserted a column to provide due date of calibration as well in Appendix-1. Hence accepted.
- Assessment team confirms that PP has updated the Appendix-1 and Date of removal and date of reinstallation has been mentioned PP which is found to be acceptable.

Hence CAR#06 is Closed

Type	Date	31-May-2023
CAR#07	Reference	Section: 01/DR Appendix 2/DR/ Appendix 3/DR/ ER SHEET/DR/
Description of the Non-Conformance		
In Section 1.10 of MR; PP is requested to give a clear picture for the VCUs issued and the RECs issued with a better clarity by giving breakup of each monitoring period and RECs issued. In Section 4.2 of MR; As per the comment received from VERRA, PP is requested to clarify, why this meter is not available in Appendix -1 list of meters installed. For better clarification, PP is requested to provide the meters clearly in tabular form in the section below and list down all meters and the parameter monitored from that meter along with the replacements done in same table.		

In Section 4.3 of MR; As per the comment received from VERRA in second round- “Energy supplied to Grid” in section 4.3 of the MR still refers to the incorrect section of the PD". PP is requested to mention the correct section reference of the registered VCS Joint PD&MR.				
1st Response from PP		Date	08-June-2023	
In Section 1.10 of MR; Details of I-REC has been corrected as per I-REC issued and issuing statement has been provided to VVB.				
In Section 4.2 of MR; Meter number has been corrected and the same has been mentioned in Appendix-I of the Monitoring Report. And the Calibration details of the Energy Meter has also been mentioned in Appendix-I of the Monitoring Report.				
In Section 4.3 of MR; Section number has now been corrected as per the registered VCS joint PD&MR.				
1st Assessment by Audit Team	Status	Open	Date	19-June-2023
In Section 1.10 of MR; Assessment team confirms that the details of I-REC has been corrected as per I-REC issued and issuing statement has been provided to VVB which is found consistent. Hence accepted.				
In Section 4.2 of MR; Meter number has been corrected by PP but same has not been observed during the verification, hence PP is requested to clarify the same.				
In Section 4.3 of MR; During the assessment, VVB found that PP has mentioned incorrect section in the monitoring report, and it was inconsistent with the registered VCS Joint PD&MR. Kindly update this section.				
Appendix-I; There is no correction observed in Appendix -1 of meter calibration details. PP is requested to kindly clarify what update has been done in this section.				
2nd Response from PP		Date	27-June-2023	
In Section 4.2 of MR; Meter number has now been corrected. And the calibration details of the energy meters have been provided in Appendix-I of the Monitoring Report.				
In Section 4.3 of MR; Correct section reference has now been mentioned.				
Appendix-I; This section has now been updated.				
2nd Assessment by Audit Team	Status	Open	Date	03-July-2023
In Section 1.10 of MR; As per the comment received from TR, according to the requirement of VCS standard version 4.4 section 3.23.5,				

- 3.23.5 Where projects have sought or received another form of GHG-related environmental credit, the following information shall be provided to the validation/verification body:
- 1) Name and contact information of the relevant environmental credit program.
 - 2) Details of the project as registered under the environmental credit program (e.g., project title and identification number as listed under the program).

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3 Project Requirements

- 3) Monitoring periods for which GHG-related environmental credits were sought or received under the environmental credit program.
- 4) Details of all GHG-related environmental credits sought or received under the environmental credit program (e.g., volumes and serial numbers).

PP to provide the summation of the I-REC vintage wise. (Open)

In Section 4.2 of MR; Assessment team confirms that the details of meters provided are correct and consistent with the calibration records submitted by PP. Hence accepted.

In Section 4.3 of MR; Assessment team confirms that the PP has now updated the MR and provided the correct section reference numbers of VCS Joint PD & MR. Hence accepted

Appendix-I; Assessment team confirms that PP has updated the meter calibration details as per the records and they are found to be correct and in line. Hence accepted.

Hence CAR#07 is Open

3rd Response from PP

Date

03-July-2023

In Section 1.10 of MR; Vintage wise details has now been provided in section 1.10 of the revised MR.

3rd Assessment by Audit Team

Status

Closed

Date

03-July-2023

In Section 1.10 of MR; Assessment team confirms that PP has updated the I-REC claims vintage wise as per the requirement and they are consistent with the I-REC webpage for the project.

Hence CAR#07 is Closed

APPENDIX C:COMPETENCE STATEMENT

Team Leader-



Certification Pvt. Ltd.

VKU.F50W, Competence Statement

COMPETENCE STATEMENT

Name	Rakesh Chouhan
Nationality	India
Countries of Experience	India
Education Qualification	M. Tech- Energy Management B. E. - Chemical Engineering
Year of Experience	17 Years
Area of Expertise	Climate Change & Environment / Industry
Eligible Sectoral Scope	1. GHG emission reductions from fuel combustion

Roles

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

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

Validator/Verifier-Trainee-



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

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

Roles

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

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

Project Trainee-



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

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

Roles

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

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

Technical Reviewer-



Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

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

Roles

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

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