

VALIDATION AND VERIFICATION REPORT OF SANTA TERESA HYDROPOWER PLANT

AENOR

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Summary:

INLAND ENERGY SAC has commissioned AENOR to validate and verify the project activity Santa Teresa Hydropower Plant in Peru to reduce emissions of CO₂ by generating renewable energy coming from water of the existing Machu Picchu Hydropower Plant in Perú.

The project is a run-of-river hydropower plant known as Santa Teresa Hydropower Plant, which use the turbinated flow of the existing Machu Picchu Hydropower Plant. The purpose of the project is to generate electricity without emissions of greenhouse gases (GHGs) (zero emission), which will be supplied to the Peruvian National Inter-connected Grid (SEIN). The project is located in Peru in the Region of Cusco, in the provinces of La Convención and Urubamba, Santa Teresa and Machu Picchu districts, respectively.

The Santa Teresa Hydropower Plant have an installed capacity of 103.86 MW, corresponding to a gross head of 186.8 m and a flow of 61 m³/s, with an estimated average annual generation of 648.28 GWh. The project activity is registered under CDM platform, with registration ID Project 9954.

During the audit process, AENOR identifies that installed capacity of the project activity is different from CDM registered PDD. Therefore, PP updated the description in the final version of the validation-verification report. AENOR was able to confirm that this change did not impact the applicability of the methodology neither the additionality. Registered installed capacity in the CDM platform, correspond only to the minimum power guaranteed by the manufacturer.

Since the project is registered under the CDM scheme, the purpose of validation is to have an independent, third party assess the project design. In this case, this limited validation covers the sections 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13 and 2.6 of the Joint VCS Project Description Monitoring Report.

The validation process was performed on the basis of all issues and criteria of VCS Standard (version 3.7) and VCS Program Guide (version 3.7) for VCS projects and also on the criteria given by other guidance as VCS programme definition version 3.7.

The project activity started its commercial operation on 1 September 2015. The project is registered under the CDM scheme (ID 9954), the registration date is 09 July 2015 and the first crediting period goes from 01 September 2015 to 31 August 2022. Then, AENOR performed the verification of the project activity for the period from 01/09/2015 to 31/12/2017. Additional to VCS requirements, the audit team assessed the compliance of the baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"; Version 16; applicable tools and the relevant host country criteria.

For the Validation, the audit team assessed the sections stated in the VCS Standard (section 3.11.10) due to the project activity is registered under CDM scheme. While, for the verification the audit team considered the following three phases: i) a desk review of the Joint Project Description Monitoring Report; ii) On-site Visit; iii) the resolution of outstanding issues and internal technical review followed by the issuance of the final verification report and opinion. In the course of the validation and verification process 4 corrective actions request and 5 clarifications request were raised, all have been successfully closed. The list of Clarification and Corrective Actions Requests (CL and CAR) is

presented in Appendix 2.

In AENOR's opinion, the sections 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13 and 2.6 applies and meets all applicable rules and requirements set out under the VCS Program. The validation is based on the information made available to audit team and the engagement conditions detailed in this report.

AENOR confirms that the project is implemented in accordance with the revised VCS-PD, CDM-PDD and the monitoring plan; and then, claimed emissions reductions are calculated without material misstatements.

The validation and verification have been performed using a risk-based approach, as described above. The only purpose of this report is its use during the registration process as part of the VCS Project Registration Process. Hence, AENOR cannot be held liable by any party for decisions made or not made based on the validation opinion, which goes beyond the purpose.

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1 INTRODUCTION

1.1 Objective

The project proponent has commissioned AENOR to validate the project activity Santa Teresa Hydropower Plant in Peru, to reduce emissions of CO₂ by generating renewable electricity using turbinated flow of the existing Machu Picchu Hydropower Plant with regard to the relevant requirements of VCS.

The objective of the validation is to assess whether the VCS Joint Project Description Monitoring Report follows the VCS Standard version 3.7/1/, VCS Program Guide version 3.7/2/, particularly the sections 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13 and 2.6 of the VCS report.

This validation report is only valid in conjunction with the CDM registered documents for the project "Santa Teresa Power plant ", reference No. 9954.

The objective of the verification is the review and ex-post determination by a Validation/Verification Body (VVB) of the GHG emission reductions that have been achieved as a result of the implementation of the project during a defined verification period. It includes the determination and evaluation that:

- The project activity has been implemented and operated as per joint VCS project description monitoring report/3/4/, CDM-PDD/5/ and that all physical features (technology, project equipment, and monitoring) of the project are in place;
- Emission reduction calculation and other supporting documents provided are complete and verifiable and in accordance with applicable CDM/VCS requirements;
- The actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology; and
- The data is recorded and stored as per the monitoring methodology

1.2 Scope and Criteria

The scope of the validation covers the sections 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13 and 2.6 of the VCS Joint project description verification report as required by latest VCS rules.

The following documents were reviewed as part of the scope of the activity:

- Joint-VCS Project Description Monitoring report, version 1/3/ and final version 3 /4/,
- CDM-PDD version 3.7/5/,
- CDM Validation Report version 7.0/6/

- All applicable rules and requirements set out under the VCS Program,
- Associated documentation (technical information, etc.).

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against requirements of applicable conditions of the selected CDM methodology, guidance issued by the CDM Board and VCS Program. AENOR has used a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of ERs.

The verification scope is:

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

The project is assessed against the requirements of VCS Standard, version 3.7 and VCS Program Guide version 3.7 for VCSS projects. AENOR has conducted the verification based on the recommendations in the latest version of CDM project standard for project activities, version 2.0/7/, and employed a rule-based approach as criteria, focusing on the identification of significant reporting rules and the reliability of project monitoring.

The validation and verification are not meant to provide any consultancy services to the project proponent. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project document.

1.3 Level of Assurance

The level of assurance was used to determine the depth of detail that the validator placed in the validation sampling plan to determine if there are any errors, omissions, or misrepresentations (ISO 14064-3: 2012). AENOR assessed the project (general principles, data, monitoring descriptions, documentation, calculations, etc.) to provide reasonable assurance to meet the Project Level requirements of the VCS Program. The evidence used to achieve a reasonable level of assurance is specified in the following sections.

1.4 Summary Description of the Project

Santa Teresa Hydropower Plant project involves the development of a hydroelectric power plant, which use the turbinated flow of the existing Machu Picchu Hydropower Plant. The purpose of the project is to generate electricity without emissions of greenhouse gases (GHGs) (zero emission), which will be supplied to the Peruvian National Inter-connected Grid (SEIN). The project is located in Peru in the Region of Cusco, in the provinces of La Convención and Urubamba, Santa Teresa and Machu Picchu districts, respectively.

The Santa Teresa Hydropower Plant have an installed capacity of 103.86 MW, corresponding to a gross head of 186.8 m and a flow of 61 m³/s, with an annual generation of 648.28 GWh (2017 energy generation). The project activity is registered under CDM platform, with registration ID Project 9954.

During the audit process, AENOR identifies that installed capacity of the project activity is different from CDM registered PDD. Therefore, PP updated the description in the final version of the VCS joint validation verification report. AENOR was able to confirm that this change did not impact the applicability of the methodology neither the additionality. CDM registered installed capacity corresponds to the minimum power guaranteed by the manufacturer/8/.

The Project has been registered on 09/07/2015 (UNFCCC ref. No. 9954) under approved CDM methodology ACM0002 Version 16 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" /9/.

According to the commercial operation permit granted by Peru's national grid operator (COES) to the project proponent, the commercial operating date was 1 September 2015 /10/. The crediting period of the project will be 10 years, renewable twice. It will run from 1st September 2015 to 31st August 2036. Then, the VCU issuance is not beyond the end of 21 years of CDM crediting period.

Project title:	Santa Teresa Hydropower Plant
UNFCCC Ref number:	9954
CDM Registration Date:	09 July 2015

Project Proponent:	INLAND ENERGY SAC
Methodology used:	ACM0002 Version 16 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".
Location of the Project:	Department of Cusco La Convencion Province Santa Teresa District Urubamba Province Machu Picchu District
Geo coordinates:	Latitude: 13.1433 S Longitude: 72.5791 W
UNFCCC link:	https://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1399517307.43/view

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

The validation of the project started on 18 December 2018, with the listing of the project on the project pipeline (PL1841) and concludes with the submission of the final validation report for requesting the registration of the project. The validation was performed in several phases, starting with a desk review of the VCS-PD against the VCS rules and other relevant criteria.

As final step of the validation, the validation report has to undergo internal quality control by means of a technical review following the procedures of AENOR. The Technical reviewer is a competent person from AENOR, independent from the team that carried out the validation of the project activity.

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using AENOR internal procedures and VCS requirements.

AENOR validates the information contained in the documents reviewed against the requirements set in VCS Standard Version 3.7.

2.2 Document Review

The first version of the VCS project description report, prepared by Prospectiva 2020, registered CDM-PDD /5/ and CDM validation report /6/ were reviewed against VCS requirements and other relevant criteria.

All documents assessed during validation are listed in Appendix 1

2.3 Interviews

During the validation and verification, the audit team interviewed different persons involved in the project activity, which are summarized following:

interviewed Person/Position	Interview topics
Alfredo García / Sub operation manager Edgardo Valdivia / Power plant Manager	Verification of data generation, Testing of monitoring equipment and observation of monitoring practices, Verification of compliance of calibration frequency against original certificates. Verification of sufficiency of monitoring plan Verification of internal data quality control Crosscheck the information provided against monitoring report and data from monitoring system, plant log books, purchase records, etc.

interviewed Person/Position	Interview topics
	Verification of Controls established to detect and correct any error or omission in monitoring parameters.
Sandro Herrera / Operation supervisor Carlos Horque / Operation supervisor	Verification of sufficiency of monitoring plan. Crosscheck between information provided in the monitoring report and data from monitoring system, plant log books, purchase records, etc.
Jose Rojas / Transfer office Hernán Herrera / Analyst of electronic measurements	Meters Row data availability.
Hiromi Mochizuki / Consultant	Verification of different data form CDM-PDD and monitoring report. Review of the monitoring report and emission reduction calculations. Verification of estimates and assumptions for determining GHG data

2.4 Site Inspections

On July 2017, before starting VCS validation AENOR was commissioned, by previous project participant, to verify the project activity under CDM scheme. Such activities include a visit to the power plant, which take place on 26 October 2017. This on-site visit included interviews with key personnel to confirm evidence. The main tasks covered during the on-site visit include, but are not limited to:

- An assessment of the implementation and operation of the project activity as per the registered VCS-PD.
- A review of information flows for generating, aggregating and reporting the monitoring parameters.
- A cross-check between information provided in the Monitoring Report and data from other sources such as database, surveys, WBTs or similar data sources.
- A check of the monitoring procedure and observations of monitoring practices against the requirements of the VCS-PD, CDM-PDD and the selected methodology.

During CDM verification process, the project participant, decided not to carry out the CDM verification and withdraw the monitoring report from CDM platform, to validate and verify the project under the VCS standard.

On September 2018 INLAND ENERGY SAC has commissioned AENOR to validate and verify the project activity Santa Teresa Hydropower Plant under VCS standard. Since the project have been already visited, the audit team decided to carry out an audit in its offices in Lima, which took place on 7 January 2019. The main task converted during this meeting are:

- 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.
- Download of energy row data

2.5 Resolution of Findings

As an outcome of the validation and verification process, the team can raise different types of findings (corrective actions, clarifications or other findings) according to the rules and requirements governing the VCS Program.

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met; or

Where a non-conformance arises the validation team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- b) The VCS requirements have not been met;
- c) There is a risk that emission reductions cannot be monitored or calculated.

Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

A Forward Action Request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the VCS requirements for registration.

The project participants were requested to address all validation findings and ultimately provided the validation team with sufficient evidence to determine that the applicable VCS requirements have been met. The project participant modified the initial VCS-PD to resolve the validation team concerns and resubmitted a final version of the VCS-PD. AENOR has prepared this report based on the final VCS-PD.

To guarantee the transparency of the validation process, the issues raised, the responses provided by the project participants, the means of validation of such responses and references to any resulting changes in the VCS-PDD or supporting annexes are documented in the Validation Findings in Appendix 2.

2.5.1 Forward Action Requests

Project validation resulted without any forward action requests.

3 VALIDATION FINDINGS

3.1 Project Details

AENOR verified that the project, proposed by the proponent INLAND ENERGY SAC, is fully implemented according to the description included in the registered CDM-PDD and *“Joint VCS project description monitoring report”*.

The audit team has confirmed the project started its commercial operations on 1st September 2015 in accordance with Commissioning act/10/ issued by Committee of Economic Operation of System - COES (national dispatch centre); therefore, the carbon crediting period and the monitoring starts on same date. The project is completely operational which was confirmed by means of the on-site visit. Neither a notification nor approval of change has been requested to the CDM Executive Board.

Due to commercial operation stated on 1st September 2015, the crediting period begins in the same date. The monitoring period goes from 1st September to 31st December 2017. Therefore, is in line with the date of commercial operation. During this monitoring period, the project has operated satisfactorily, no significant operation interruption was detected only the related to operation of power plant /11/12/13/

The verification team confirmed through visual inspection and document review that all physical features of the VCS project activity, including data collection systems and storage systems have been implemented in accordance with the registered CDM-PDD and final version of join VCS report. The technical specification of the generation equipment /14/15/, electric line diagram/16/ and power house layout of the project activity were reviewed. Then the audit team confirm that the project activity corresponds to a hydroelectric power plant with an installed capacity of 103.86 MW/15/.

For the entire monitoring period (from 1st September 2015 to 31st December 2017) the project activity has reduced a total of 666,406 tCO₂e (100,074 tCO₂e in 2015, 270,923 tCO₂e in 2016 and 295,409). Therefore, due to the project activity emission reductions, during this monitoring period, are less than 300,000 tonnes of CO₂e per year, it is categorized as "Project".

AENOR has rewired the Energy and Mines resolution/17/, which confirm the property of the project in favour of INLAND ENERGY SAC, which is the project ownership. Also, it was reviewed the contract agreement with government/18/ to confirm the applicable laws and regulatory framework.

Finally, AENOR is able to confirm that the project activity does not project does not reduce GHG emissions from activities that are included in an emission trading program or any other mechanism that includes GHG allowance trading.

3.2 Participation under Other GHG Programs

The project activity is registered under CDM, with reference: Project 9954. Details of the CDM registration is Project title: Santa Teresa Hydropower Plant, registration date 9th July 2015.

Since project activity is registered in the CDM scheme. Validation team performer a gap validation of the project activity. The conclusion is summarized below:

Section of VCS-PD	References	Comments	Final Conclusion
1.1 Summary Description of the Project and its Implementation Status	VCS Join project description monitoring report	Main characteristics are described in the report and according to the evidences	OK

Section of VCS-PD	References	Comments	Final Conclusion
1.2 Sectoral Scope and Project Type	VCS Join project description monitoring report, CDM-PDD, CDM Validation report and UNFCCC website.	The project activity belongs to sectoral scope 01 (Renewable/non-renewable). It is a single project.	OK
1.3 Project Proponent	VCS Join project description monitoring report, CDM-PDD, UNFCCC website and Ministry of Energy and Mines Resolution	The project proponent for VCS INLAND ENERGY SAC	OK
1.5 Project Start Date	VCS Join project description monitoring report and COES letter.	The start date of the project activity is 01/09/2015, which is the commercial operating date of the project as stated in the commercial operation permit provided by COES /10/	OK
1.6 Project Crediting Period	VCS Join project description monitoring report, CDM-PDD, CDM Validation report and UNFCCC website.	The first crediting period of the project will be 10 years. It will run from September 1 st 2015 to August 31 st , 2025. The crediting period lasts 10 years and is renewable twice. As per paragraph 3.8.3 of the VCS Standard version 3.7 the, VCS crediting period will not exceed 21 year	OK
1.7 Project Scale and Estimated GHG Emission Reductions or Removals	VCS Join project description monitoring report	The proposed project activity was categorized as Project, since the estimated average annual GHG emission reductions is 295,409 tCO ₂ e (for 2017, the maximum for this monitoring period), which is less than 300,000 tCO ₂ e per year.	OK

Section of VCS-PD	References	Comments	Final Conclusion
1.9 Project Location	VCS Join project description monitoring report, CDM-PDD, CDM Validation report and UNFCCC website.	The hydroelectric power project is located in Department of Cusco, La Convencion Province, Santa Teresa District, Urubamba Province, Machu Picchu District The coordinates of the project are: Latitude: 13.1433 S Longitude: 72.5791 W	OK
1.10 Conditions Prior to Project Initiation	VCS Join project description monitoring report, CDM-PDD and CDM Validation report	The project is a renewable energy project which supplies power to the national grid. In the absence of the project the electricity delivered to the Peruvian grid would have been generated from the operation of grid-connected power plants which are mainly thermal power plants.	OK
1.12.1 Project Ownership	VCS Join project description monitoring report, CDM-PDD and CDM Validation report	The project activity is owned by the project proponent. The generation permit issued by the Ministry of Energy and Mines (MINEM) demonstrate the right of the project /17/.	OK
1.12.2 Emissions Trading Programs and Other Binding Limits	VCS Join project description monitoring report, CDM-PDD and CDM Validation report	The project is not included in an emissions trading program and does not take place in a jurisdiction or sector in which binding limits are established on GHG emissions. The project does not reduce GHG emissions from activities that participate in an emissions trading program, so this clause is not applicable.	OK

Section of VCS-PD	References	Comments	Final Conclusion
1.12.3 Other Forms of Environmental Credit	VCS Join project description monitoring report, CDM-PDD and CDM Validation report	Through reviewing the registered CDM-PDD and CDM validation report at UNFCCC website. It was validated that the project has been registered as a CDM project on 09/07/2015. The project does not participate in another emissions trading program.	OK
1.12.4 Participation under Other GHG Programs	VCS Join project description monitoring report, CDM-PDD and CDM Validation report	Based on the undertaking letter from the PP /19/, AENOR confirms that the project does not generate any other form of GHG-related environmental credit for GHG emission reductions or removals claimed under the VCS program.	OK
1.13 Additional Information Relevant to the Project - Eligibility Criteria - Leakage Management - Commercially Sensitive Information - Further Information	VCS Join project description monitoring report, CDM-PDD and CDM Validation report	The project activity: - Is a single project - No leakage emissions are considered - No commercial sensitive information has been excluded - All information is on UNFCCC web site.	OK

Section of VCS-PD	References	Comments	Final Conclusion
2.6 Methodology Deviations	VCS Join project description monitoring report	During this monitoring period, PP has requested two methodology deviation, regarding monitoring plan. After reviewed provided evidences, AENOR confirms that those deviation do not negatively impact the conservativeness of the quantification of GHG emission reductions or removals. Deviation are detailed in section 2.6 of the Joint VCS report.	OK

In AENOR opinion, the project activity meets the criteria of the clauses 1.1, 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13 and 2.6 of the join VCS project description report as per all applicable rules and requirements set out under the VCS Validation and Verification Standard version 3.7 and is likely to achieve the estimated emission reductions. The validation is based on the information made available to us and the engagement conditions detailed in this report.

3.3 Application of Methodology

3.3.1 Title and Reference

ACM0002 version 16, Grid-connected electricity generation from renewable sources. Also, during this monitoring PP has used the Tool to calculate the emission factor for an electricity system, version 5.0.

3.3.2 Applicability

All applicability conditions and steps taken to assess compliance are described in registered CDM-PDD.

3.3.3 Project Boundary

The project boundary is described in the registered CDM-PDD.

3.3.4 Baseline Scenario

Baseline scenario is described in the CDM-PDD

3.3.5 Additionality

Additionality is detailed in the registered CDM-PDD.

During the validation the audit team identified that the installed capacity was different from registered CDM-PDD. Then, in order to confirm that the additionality has not changed PP has provided the updated investment analysis /20/. AENOR is able to confirm that additionally has not changed.

In order to confirm the procedure of validating the project changes, the audit team requested a clarification to VERRA secretary. According to provided answer, given by Iman Stenson, the audit team were requested to analyse whether this change impacts the project's additionality. Therefore, AENOR validated the changes and concluded that this change does not impact the additionality.

3.3.6 Quantification of GHG Emission Reductions and Removals

The procedure of quantification of emission reduction is documented in the registered CDM-PDD. However, during this monitoring two deviation from registered monitoring plan were requested, both are described in next section.

3.3.7 Methodology Deviations

The following methodology deviations related to monitoring plan has been assessed:

- A. **Testing period of measuring equipment:** The monitoring plan, approved by the CDM, considered one year for testing and contrast of energy meters. However, project proponent, decided to carry out this testing in a period no greater than 3 year, due to government contract requires at least once every three years.

AENOR's audit team has verified the testing of energy meters /21/22/ and confirmed that the equipment operates properly without exceeding the error established in the monitoring plan.

- B. **Workbooks updated:** Project proponent decided to change some sheet from registered spreadsheet, to calculate the grid emission factor. Previous version of spreadsheets has a large number of Excel workbooks and some of them had used macros, which in much cases causes problem for users.

The audit team reviewed new spreadsheet/23/24/25/ and concludes that is in line with applied methodology and the tool to calculate the emission factor for an electricity system, version 5.0 /26/

In AENOR's opinion both deviations meet the criteria and specifications of applied methodology and tool. The changes do not negatively impact the conservativeness of the quantification of GHG emission reductions.

3.3.8 Monitoring Plan

All monitoring plan is included in the registered CDM-PDD.

CDM registered monitoring plan must be used in conjunction with the deviations described in section 2.6

3.4 Non-Permanence Risk Analysis

No applicable.

Only a gap validation was performed due the project in already registered as CMD project.

4 SAFEGUARDS

4.1 No Net Harm

No Applicable.

Only a gap validation was performed due the project in already registered as CMD project.

4.2 Environmental Impact

Not applicable.

Only a gap validation was performed due the project in already registered as CMD project.

4.3 Local Stakeholder Consultation

Not applicable.

Only a gap validation was performed due the project in already registered as CMD project.

4.4 Public Comments

Not applicable.

Only a gap validation was performed due the project in already registered as CMD project.

5 VERIFICATION FINDINGS

5.1 Accuracy of GHG Emission Reduction and Removal Calculations

The monitoring has been carried out in accordance with the provision of monitoring plan; the verification team reviewed whether:

- The monitoring of reductions in GHG emissions resulting from the proposed VCS project activity were *implemented* in accordance with the monitoring plan contained in the joint VCS project description monitoring report and CDM-PDD.
- The monitoring plan, deviations of *monitoring* procedures and the applied methodologies had been properly implemented and followed by the project participants.
- All parameters stated in the monitoring plan, the applied methodologies and relevant CDM EB *decisions* had been sufficiently monitored and updated.
- The *responsibilities* and authorities for monitoring and reporting were in accordance with the responsibilities and authorities stated in the monitoring plan and its deviation.

The monitoring system and all applied procedures are in compliance with deviations of monitoring procedures and monitoring plan contained in joint VCS project description monitoring report, CDM-PDD and the applied methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”; Version 16, based on the information included in the final monitoring report, there are several procedures for data collecting depending on the methodology applicable for each step of the project.

Based on the information in the joint VCS report, the baseline emission factor ($EF_{grid,CM,y}$) was ex-post determined according to “Tool to calculate the emission factor for an electricity system”, version 5.0 and is calculated annually for the crediting period. Combined emission factor is calculated as weighted average of operating margin ($EF_{grid,OM,y}/23/24/25/$ and build margin ($EF_{grid,BM,y}/27/28/29/$).

All data to calculate grid emission factor is publicly available on the website of the dispatch centre. These data include annual statistics /30/31/32/, energy generation from power plants that dispatch to the interconnected system.

On the other hand, electricity displaced by the project activity in hour h of year y ($EG_{PJ,y}$) is recorded by a bidirectional meter. It is recorded each 15 minutes, then each hour and yearly. Project proponent provide monthly row data /33/ extracted from the meter

The different data sources mentioned above permit the comparison of the data and the detection of any deviation between them. In the below are addresses the values reported and verified for VCU calculation.

The values of grid emission factor are summarized below:

Year	$EF_{grid,BM,y}$ (tCO ₂ /MWh)	$EF_{grid,OM,y}$ (tCO ₂ /MWh)	$EF_{grid,CM,y}$ (tCO ₂ /MWh)
2015	0.5343	0.5352	0.5348
2016	0.3888	0.4485	0.4187
2017	0.3194	0.5920	0.4557

According to the formulae and procedure defined in the monitoring plan the Baseline Emissions (BE_y) is calculated as follows:

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

Then baseline emission for the crediting period are summarized in the following table:

Year	$EG_{PJ,y}$ (MWh)	$EF_{grid,CM,y}$ (tCO ₂ /MWh)	BE_y (MWh)
2015	187,138.40	0.5348	100,074
2016	647,131.14	0.4187	270,923
2017	648,278.18	0.4557	295,409
Total	1,482,547.71	-	666,406

Then, the total Emission Reductions (ER_y) is calculated as follows:

$$ER_y = BE_y - PE_y$$

As per registered CDM-PDD, Project Emissions (PE_y) and Leakage (L_y) are equal to 0, therefore, the total emissions reductions calculated for the monitoring period are **666,406 tCO₂e**.

PP provided the spreadsheets used for calculating the GHG emission reductions. AENOR has reproduced all these calculations to obtain the same results, hence, they are deemed quantified correctly in accordance with the project description and applied methodology; consistent with the evidence provided and cross-checked by AENOR. Furthermore, appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed, and assumptions and emission factor correctly applied and justified.

5.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

AENOR was able to confirm that the calculations are based on authentic data from energy regulators, on the monthly systematic monitoring of the electricity supplied by the project and records of sold electricity. The spreadsheets used to calculate the VCU calculations and all figures were tracked, checked and found to be consistent. The monitoring information is stored as per the monitoring plan.

The quality of supporting evidences submitted to the VVB for verification is adequate and found to be verifiable. The ER calculation spreadsheet and other supporting documents related to quality and maintenance were checked by the verification team during the site visit to confirm the authenticity of the documents and to check the correctness of the calculation.

The verification team can confirm that sufficient evidence is available for the whole monitoring period and the same is verifiable and that the data collection system meets the requirements of the monitoring plan and the applied methodology according to the assessment carried out on site and in the document review.

Verification team confirms that the quality of evidence to determine the GHG reductions and removals produced was found satisfactory. The detailed information flow with the roles and responsibilities of the individuals and the monitoring system have been provided in Appendix 1 of the VCS-MR.

6 VALIDATION AND VERIFICATION CONCLUSION

AENOR has performed a validation and verification of Santa Teresa Hydropower Plant Project. The process was performed on the basis of all issues and criteria of VCS Standard version 3.7 and VCS Program Guide version 3.7 for VCS projects and also on the criteria given by other guidance as CDM project standard for project activities version 2.0.

In AENOR opinion, the project activity meets the criteria of the clauses 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4, 1.13 and 2.6 of the Joint VCS Project Description Monitoring Report as per all applicable rules and requirements set out under the VCS Standard version 3.7 and is likely to achieve the estimated emission reductions. The validation is based on the information made available to us and the engagement conditions detailed in this

The validation has been performed using a risk-based approach, as described above. The only purpose of this report is its use during the registration process as part of the VCS Project Registration Process. Hence, AENOR cannot be held liable by any party for decisions made or not made based on the validation opinion, which goes beyond the purpose.

AENOR has performed the verification of the emission reductions that have been reported for the period from 1st September 2015 to 31st December 2017. AENOR conducted the verification on the basis of the approved consolidated baseline methodology ACM0002 version 16, the monitoring plan contained in the registered CDM-PDD and the final report. The verification included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and ii) the collection of evidence supporting the reported data.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these risks, AENOR planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence to give reasonable assurance that the reported amount of GHG emission reductions for the period is fairly stated.

The GHG emission reductions were calculated correctly on the basis of the approved consolidated baseline methodology ACM0002 version 16 and the monitoring plan contained in the registered CDM-PDD.

AENOR is able to certify that the emission reductions from the "Santa Teresa Hydropower plant" amount to 666,406 tonnes of CO₂ equivalent, as detailed below.

Verification period: From 01-september-2015 to 31-december-2017

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)
2015	100,074	0	0	100,074
2016	270,923	0	0	270,923
2017	295,409	0	0	295,409
Total	666,406	0	0	666,406

Madrid, 03/07/2019



Richard Daniel Gonzales Toledo

Team leader



José Luis Fuente Peres

Authorised person

APPENDIX I: REFERENCES LIST

Ref	Document Name	Date
1	VCS Standard, version 3.7	21/06/2017
2	VCS Program Guide, version 3.7	21/06/2017
3	Joint VCS Project Description Monitoring Report, Version 1	24/09/2018
4	Joint VCS Project Description Monitoring Report, Version 3	21/06/2019
5	CDM-PDD, version 3.7	25/03/2016
6	CDM Validation Report, version 7.0	30/03/2016
7	CDM project standard for project activities, version 2.0	29/11/2018
8	Guaranteed Plant Characteristics (ANDRITZ HYDRO contract)	November 2011
9	CDM methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”; Version 16	28/11/2014
10	Commissioning act issued by COES	01/09/2015
11	Annual maintenance plan 2015	-
12	Annual maintenance plan 2016	-
13	Annual maintenance plan 2017	-
14	Turbine Technical specification (As built)	10/09/2015
15	Generator Technical specification (As built)	18/11/2015
16	Electric line diagram	15/12/2015
17	Ministry of Energy and Mines Resolution N° 049-2019-MEM/D	19/02/2019
18	Contract Agreement with Ministry of Economy and Finance	17/06/2010
19	Undertaking letter from the PP	26/04/2019
20	Updated spreadsheet of investment analysis	May 2019
21	Meter manufactures specification (ION7650)	21/05/2014
22	calibration test on site 2017	24/11/2017
23	Dispatch data operating margin spreadsheet calculation 2015	-
24	Dispatch data operating margin spreadsheet calculation 2016	-
25	Dispatch data operating margin spreadsheet calculation 2017	-
26	Tool to calculate the emission factor for an electricity system, version 5.0	27/11/2015

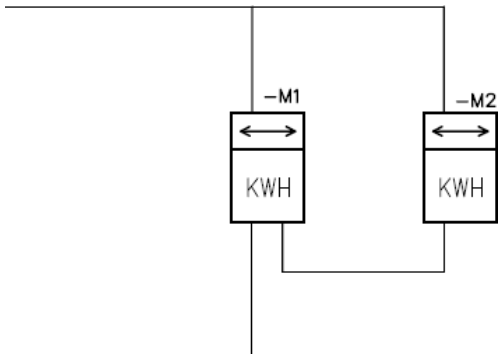
Ref	Document Name	Date
27	Build margin spreadsheet calculation 2015	-
28	Build margin spreadsheet calculation 2016	-
29	Build margin spreadsheet calculation 2017	-
30	COES annual statistics 2015	2015
31	COES annual statistics 2016	2016
32	COES annual statistics 2017	2017
33	Meters monthly row data (from September 2015 to December 2017)	-

APPENDIX II: FINDINGS FROM GAP VALIDATION AND VERIFICATION

CLARIFICATION REQUEST (CLS)

CL ID	01	Date: 23/01/2019
Description of CL		
<i>PP shall provide an evidence of project ownership as per VCS requirements (refer to section 3.11.1 of the VCS Standard)</i>		
Project participant response		Date: 12/03/2019
Documentation about Luz del Sur and Inland is provided: ▪ Reorganización simple LDS-INLAND.pdf that includes information about capital incrementation, parcial modification of statutes and simple reorganization of LDS with the new VCS ownership. ▪ Gerente general INLAND.pdf that include information about general manager if INLAND.		
Documentation provided by project participant		
-		
DOE assessment		Date: 10/04/2019
PP has not provided evidence of which organization has the legal right to control and operate the project activities. CL remains open		
Project participant response		Date: 21/05/2019
Project participant are complemented documentation with two documents: permission of transfer and authorization of this transfer (by Ministry Energy and Mines). • Document Cesion.pdf which inform about that Inland Energy SAC is a new owner of Luz del Sur SAA and assume all new rights and obligation from this. • OF-269-MEM_Authorization.pdf that include authorization for assignment of the position of the investment commitment contract of the Santa Teresa hydropower, in favour of Inland.		
Documentation provided by project participant		
▪ Cesion.pdf ▪ OF-269-MEM_Authorization.pdf		
DOE assessment		Date: 14/06/2019
PP has provided the government authorization and rights in favour of Inland Energy SAC. Then, CL is closed.		

CL ID	02	Date: 23/01/2019
Description of CL		
<i>PP shall provide an evidence of whether GHG emission reductions from the project activity have not and will not be otherwise counted or used under another program or mechanism (refer to section 3.11.2 of VCS standard)</i>		
Project participant response		Date: 12/03/2019
Initially, mission reduction from the project were under CDM initiative, but at 20 th March 2018 Luz del Sur had withdrawn from CDM. Document provided is: Monitoring Report Withdrawal Request Form.pdf that include information about withdrawal.		
Documentation provided by project participant		
-		
DOE assessment		Date: 10/04/2019
Although the monitoring report has been withdrawn, the project is registered under the CDM scheme. Then, PP has not provided an evidence as requested in the clarification.		
CL remains open		
Project participant response		Date: 21/05/2019
A letter from Inland to DOE (Aenor International SAU) is provided, as a sworn declaration of no-use of other virtual platform of carbon bonds. This document is a sworn declaration only use of VERRA		
Documentation provided by project participant		
Sworn Statement - Aenor.pdf		
DOE assessment		Date: 14/06/2019
PP has provided a self-declaration that the project will not participate in programmes other than VCS scheme. Then, CL is closed.		

CL ID	03	Date: 23/01/2019
Description of CL		
<i>PP shall provide a line diagram from net energy meters location to confirm the electricity delivery point.</i>		
Project participant response		Date: 12/03/2019
Single line diagram main single line – Santa Teresa is provided: ST-CM-EM1-3510-001-MainSL.pdf that include line diagram from net energy meters.		
Documentation provided by project participant		
-		
DOE assessment		Date: 10/04/2019
Provided evidence does not show the meter location. PP must provide a line diagram, which include meters location and net energy delivery point. CL remains open		
Project participant response		Date: 21/05/2019
A single line diagram is provided by Inland, showing two multifunction meters and electricity input and output: 		
Documentation provided by project participant		
Single line diagram.pdf		
DOE assessment		Date: 14/06/2019
PP has provided properly evidence. Then, CL is closed.		

CL ID	04	Date: 23/01/2019
Description of CL		
<i>PP shall provide evidence regarding training activities related to GHG monitoring, as per indicated in the registered monitoring plan.</i>		
Project participant response		Date: 12/03/2019
Certificates from personal training are provided.		
Documentation provided by project participant		
-		
DOE assessment		Date: 10/04/2019
PP has not provided requested evidence in accordance to the registered monitoring plan, included in section B.7.3 of the CDM-PDD		
According to the registered CDM-PDD:		
<i>“Luz del Sur staff will be trained on the Clean Development Mechanism (CDM) with the purpose of make known the importance of the proper implementation and development of the Santa Teresa Hydropower Plant, in order to meet the Kyoto Protocol target of achieving the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.”</i>		
Therefore, evidence of such training must be provided		
CL remains open		
Project participant response		Date: 21/05/2019
According to monitoring plan, personal had been training in Greenhouse effect and CDM and Kyoto protocol. An attendance of training, at 17 th May 2017, 16 th June 2016 and 22 nd April 2018, is provided.		
Documentation provided by project participant		
Training 22 Apr19.pdf		
DOE assessment		Date: 14/06/2019
PP has provided evidence as per monitoring plan. Then, CL is closed.		

CL ID	05	Date: 23/01/2019
Description of CL		
<i>PP shall provide evidence for annual testing of measuring equipment, as per registered monitoring plan.</i>		
Project participant response		Date: 12/03/2019
Document for calibration of measuring equipment is provided: Protocolos Medidores 220kV.pdf that include information about period calibration of measuring equipment.		
Documentation provided by project participant		
-		
DOE assessment		Date: 10/04/2019
According to the registered CMD-PDD, section B.7.3: <i>" (...) The calibration will be only carry out if an error is detected in the annual testing of measuring equipment. This periodic testing is conducted as part of quality control of equipment (...)"</i> Therefore, annual testing of measurement equipment, for years included in the monitoring period must be provided (2015 and 2016). CL remains open		
Project participant response		Date: 21/06/2019
A deviation from the original monitoring plan is presented: - The precision's verifications will be at least once every 3 years, not every year, as the previous PDD version wrote down. Therefore, a deviation was implemented in section 2.6 from VCS-joint-PDD-MR Complement documentation is provided: - Precision's verification (energy meters).pdf for 2017 which shows the results from precision's verification of electricity meters, following the international standards: IEC 62053-22 and ANSI C12.20. A maximum deviation of 0.23% is detected and it's under the limit value (0.35) - Bases integradas ED-01-2015-LP. paragraph 9.8 which shows the tendering procedure approved by Osinergmin between power distribution and power generating companies. It shows a period for verification have to be at least: three years. - RM 496-2005-EM/DM: show paragraph ii, chapter 3. - Agreement between EGEMSA and Santa Teresa: see paragraph g, chapter 7.1..		
Documentation provided by project participant		
- Precision's verification (energy meters17).pdf - Bases integradas ED-01-2015-LP - RM 496-2005.EM.DM.pdf - Agreement ST and EGEMSA.pdf		
DOE assessment		Date: 03/07/2019

Project proponent updated the monitoring plan considering that the testing of the energy meter will be performed at least every tree year, in line with local regulation. The deviation is justified in section 2.6 of VCS report. Then, **CL is closed**

CORRECTIVE ACTIONS REQUEST (CARs)

CAR ID	01	Date: 23/01/2019
Description of CAR		
<i>The audit team has detected that the installed capacity of the project activity has changed from the registered CDM-PDD. The PP shall describe the project description as real implementation and explain the reasons for the changes in the monitoring report. Also, the PP is requested to document the changes as per procedure of VCS Standard section 3.6.1.</i>		
Project participant response		Date: 12/03/2019
Documents are provided: ▪ Data_GeneratorG1.pdf Show main generator characteristics, officially received and accepted by the SEIN operator: COES a. It shows data about generator G1 capacity: ○ Nominal capacity: 59 MW ○ Effective capacity: 44.523 MW ▪ Data_GeneratorG2.pdf Show main generator characteristics, officially received and accepted by the SEIN operator: COES a. It shows data about generator G2 capacity: ○ Nominal capacity: 59 MW ○ Effective capacity: 44.523 MW As a result, the final power data are: ○ Nominal capacity: 118 MW ○ Effective capacity: 89.046 MW By official letter D-486-2016 (12nd may 2016), COES accepted the effective power in 89.85 MW and the effective power had accepted in 2015 (DP-1409-2015) was 99.71 MW. As result, 94.28 MW is the average effective power. For generation purposes is take into account the effective power, because the nominal (maxim) power is not real and unattainable because de efficiency of turbines (maximum value: 94.1%), generators (maximum value: 98.5%), installed plant (maximum value:92.23%), plant factor (84%) and the flow (maximum value:61 m³/s) As a consequence, from the nominal generation estimated in 722.17 GWh, the real power generation was: ▪ 2015: 187.14 GWh (240.72 GWh, as nominal proportion. It's 22.3% less than expected) ▪ 2016: 647.13 GWh (It's 10.4% less than expected) ▪ 2017: 650.07 GWh (Annual report, COES 2017. It's 10% less than expected) In conclusion, 98.12 MW is confirmed as original power, according to official document from Luz del Sur: ▪ Memoria Santa Teresa.pdf: The table, in page 10 ("Datos significativos del proyecto" – Project's important data), shows 98.12 MW.		
Documentation provided by project participant		
-		
DOE assessment		Date: 10/04/2019
Since installed capacity of the project activity is different from the registered CDM-PDD. PP is requested to Justify the changes as per stated in section 3.6.1 of the VCS standard.		
CAR remains open		
Project participant response		Date: 21/05/2019

Since small and not influential change on installed capacity of the project activity, a project deviation has been applied following the rules stated in section 3.6.1 of the VCS standard. The financial analysis had been updated, considering the real power and generation, as a result additionality was not affected:

Comparison of financial indicator with and without CER revenue

10.19%	12.00%	12.16%

Also, the sensitivity analysis was updated

The results are summarized in the following table:

Sensitivity analysis of Project IRR updated

	10.71%	10.28%	8.6%
Initial Investment	(Before: 12.45%)	(Before: 11.23%)	(Before: 10.17%)
Current Energy Price for Free Market	8.46%	9.58%	10.65%
	(Before: 9.28%)	(Before: 10.48%)	(Before: 11.63%)
Projected Energy Price for Free Market	9.12%	10.28%	11.39%
	(Before: 9.99%)	(Before: 11.23%)	(Before: 12.41%)
O&M costs	10.45%	10.28%	10.10%
	(Before: 11.42%)	(Before: 11.23%)	(Before: 11.04%)
Annual generation	9.71%	10.28%	10.86%
	(Before: 10.63%)	(Before: 11.23%)	(Before: 11.84%)

The financial and sensibility analysis updated with real values: 103.86 MW of power and annual net electricity generation: 648.28 GWh.

Documentation provided by project participant

- Unlevered Eval&Sens vMay19.xls

DOE assessment

Date: 14/06/2019

PP has justified that additionality has not been affected by changes in the project design. Additionality was evaluated using the same spreadsheet used in the validation, considering the changes in project. Furthermore, the audit team can confirm that there is not impact in the scale nor methodology applicability. Then, **CAR is closed**.

CAR ID	2	Date: 23/01/2019
Description of CAR		
<i>PP has not completed the project description as per requested by VCS template.</i> <i>Section 1.1 does not include the relevant implementation dates (eg, dates of construction, commissioning, and continued operation periods); neither a brief description of the scenario existing prior to the implementation of the project.</i> <i>Section 1.6 does not include the start and end dates for the number of years</i> <i>Section 1.7, PP has not provided a justification of estimated emission reductions reported in this section</i> <i>Section 1.8, is not applicable as per section 3.11.10 of VCS standard, version 3.7.</i> <i>Section 1.10, does not include a brief description of conditions existing prior to project initiation (irrelevant information must be avoided)</i> <i>Section 1.11, is not applicable as per section 3.11.10 of VCS standard, version 3.7.</i> <i>Section 1.13 refers to version 18.1 of applied methodology (ACM0002); however, it was validated against version 16. Also, it is not included a description of how the project contributes to achieving any nationally stated sustainable development priorities, including any provisions for monitoring and reporting same.</i>		
Project participant response		Date: 12/03/2019
PP updated the VCS template and issues had been included: - Section 1.1 Includes relevant dates and documentation related are: - Letter to UNFCCC.pdf Show main generator characteristics, officially received and accepted by the SEIN operator. Brief description of scenario existing prior to the implementation of project, is also included. - Section 1.6 include the start and end dates for the number of years: 30. - Section 1.7, it has provided a justification of estimated emission reductions reported in this section. - Section 1.8, is not applicable as per section 3.11.10 of VCS standard, version 3.7. - Section 1.10, had been included a brief description of conditions existing prior to project initiation and irrelevant information was avoided. - Section 1.11 is not applicable as per section 3.11.10 of VCS standard, version 3.7. - Section 1.13 and all document refers to version 16 of applied methodology (ACM0002) that was used for validated under CDM.		
Documentation provided by project participant		
<i>Document: Join project description and monitoring report.</i>		
DOE assessment		Date: 10/04/2019
Section 1.6 and 1.7 are not in accordance with section 3.8 of the VCS standard. Please refer to section 3.8.1 and 3.8.3. CAR remains open		
Project participant response		Date: 21/05/2019

According to of the VCS standard, section 3.8.1: the crediting period is 20 years. The report of CO2 emission reduction for 2015 (1rd September to 31rd December), 2016 and 2017 was updated. The sections of VCS-Joint PDD-MR as project description, emission reduction for 20 years and results from investment analysis were updated.	
Documentation provided by project participant	
▪ ER updated May19.xls ▪ VCS-Joint-PDD-MR vMay19.doc	
DOE assessment	Date: 14/06/2019
According to the section 3.8.1: “(...) the project crediting period shall be a maximum of ten years which may be renewed at most twice.” Therefore, PP must consider the maximum years for each crediting period. CAR remains open	
Project participant response	Date: 21/06/2019
According to of the VCS standard, section 3.8.1: the crediting period is 21 years. Emission reduction report and VCS-Joint PDD-MR were updated. Updated section are Project description, emission reduction for 21 years and results from investment analysis.	
Documentation provided by project participant	
▪ ER updated May19.xls ▪ VCS-Joint-PDD-MR vMay19.doc	
DOE assessment	Date: 03/07/2019
PP has included correct information in the last version of the VCS report. Then, CAR is closed.	

CAR ID	3	Date: 23/01/2019
Description of CAR		
<i>After reviewing spreadsheets for emission reduction calculation, it was detected that PP has not followed register monitoring plan. According to the registered CDM-PDD, PP must use "Emission reduction calculation procedure (ERCP)", which states that OM and BM must be calculated with specific spreadsheets, which are no longer used. PP is requested to document the deviation as per procedure of VCS Standard paragraph 3.5.1.</i>		
Project participant response		Date: 12/03/2019
The reason for updating worksheets for calculation the annual emission factor was the tool's update in the last version. In other words, the monitoring methodology has not changed, only was updated. As a result, it is not necessary a deviation procedure.		
Documentation provided by project participant		
Emission reduction calculation procedure had been updated and considered: - FE 2015 that include specific spreadsheets for BM, OM and CM for 2015 emission factor. Also included source documentation that had been used in calculation. - FE 2016 that include specific spreadsheets for BM, OM and CM for 2016 emission factor. Also included source documentation that had been used in calculation. - FE 2017 that include specific spreadsheets for BM, OM and CM for 2017 emission factor. Also included source documentation that had been used in calculation.		
DOE assessment		Date: 10/04/2019
The use of registered monitoring plan is mandatory. In case of not complying, a deviation must be implemented. PP must demonstrate, as per section 3.5.1 of VCS standard, that the deviations do not negatively impact to the conservativeness of the quantification of GHG emission reductions. Any "update" is considered a deviation from the registered monitoring plan.		
CAR remains open		
Project participant response		Date: 21/05/2019
New Excel workbooks are used to calculate the annual emission factor for projects at SEIN.		
Documentation provided by project participant		
-		
DOE assessment		Date: 14/06/2019
PP must document the changes to the monitoring plan. Also, PP must justify that the changes do not negatively impact the conservativeness of the quantification of GHG emission reductions or removals,		
Project participant response		Date: 21/06/2019
New Excel workbooks are used to calculate the annual emission factor for projects at SEIN. A deviation was implemented in section 2.6 from VCS-joint-PDD-MR. Also, as per section 3.5.1 of VCS standard, the deviation mentioned in that section do not negatively impact on methodology monitoring procedures applied (ACM 0002 v16). Therefore, this not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.		
Documentation provided by project participant		

- VCS-Joint-PDD-MR vMay19.doc
- _BM2015.xls
- _OM2015.xls
- _CM2015.xls
- _BM2016.xls
- _OM2016.xls
- _CM2016.xls
- _BM2017.xls
- _OM2017.xls
- _CM2017.xls

DOE assessment**Date:** 03/07/2019

PP has decided to update the registered spreadsheet for calculating grid emission factor in order to avoid of using a large number of workbooks. Audit team reviewed provide information and is able to confirm that those calculation are in line with applied methodology and the tool to calculate the grid emission factor. Then, **CAR is closed**

CAR ID	4	Date: 23/01/2019
Description of CAR		
<i>Net energy reported in the MR differs from meters row data provided by PP.</i>		
Project participant response		Date: 12/03/2019
Single line diagram main single line – Santa Teresa is provided: <i>ST-CM-EM1-3510-001-MainSL.pdf</i> that include line diagram from net energy meters.		
Documentation provided by project participant		
Emission reduction calculation procedure had been updated and considered: ▪ GEN 2015total.xls that include net hourly electricity generation from 1st September 2015 to December 2015. Also included source documentation that had been used in calculation. ▪ GEN 2016total.xls that include net hourly electricity generation from 1st January 2016 to December 2016. Also included source documentation that had been used in calculation. ▪ DATA Generación-Caudales rio y turbinado.xls that include net hourly electricity generation from 1st January 2017 to December 2017. Also included source documentation that had been used in calculation.		
DOE assessment		Date: 10/04/2018
Net energy is not properly determined, according to provided row data, power plant registered energy consumptions; but it has not been subtracted to obtain net energy. CAR remains open		
Project participant response		Date: 21/05/2019
Documentation was updated, according to meters registration: considering net electricity generation.		
Documentation provided by project participant		
Documents for annually net electricity generation have been provided: ▪ ST2015.xls ▪ ST2016.xls ▪ ST2017.xls ▪ ER updated May19.xls.		
DOE assessment		Date: 03/07/2019
Correct information in using in all document provided to the audit team. Then, CAR is closed		