



**Verified Carbon
Standard**

VALIDATION REPORT OF RENEWAL OF
CREDITING PERIOD OF GRID
CONNECTED ELECTRICITY GENERATION
FROM RENEWABLE SOURCES:
UZUNCAYIR 82.0 MW HYDROELECTRIC
POWER PLANT PROJECT, TURKEY



Document Prepared by LGAI Technological Center S.A. (Applus+
Certification)

Project Title	Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey
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Report Title	Validation Report OF RENEWAL OF CREDITING PERIOD of "Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric
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	Power Plant Project, Turkey”
Client	Ekobil Environmental Services and Consulting Ltd
Date of Issue	28-March-2022
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Work carried out by	Vivek Kumar Ahirwar, as Lead Auditor Simon Shen, as Technical Reviewer

Summary:

The purpose of the project activity is to generate power using renewable hydro energy. The generated electricity is being exported to the public grid system of Turkey which is dominated by mainly fossil fuel fired power plants.

The Uzuncayir HEPP project is a reservoir based hydro-electric power plant with an installed capacity of 82 MW. Uzuncayir HEPP is located on Munzur river and it is 18 km away from Tunceli city center. The project will have a dam and a 13.4 km² reservoir. Uzuncayir HEPP consists of 3 units, each having an installed capacity of 27.33 MW. Total installed capacity of the project is 82.0 MWe and the expected electricity generation is 322,000 MWh per annum.

Revalidation of the Renewal of Crediting Period purpose:

The project is registered with VCS with Project ID 0762. Start date of the project activity is the 02/12/2009. The First Crediting Period was from 02/12/2009 to 01/12/2019 and Second Crediting Period chosen 02/12/2019 to 01/12/2029.

The average annual GHG emission reductions from the project activity will be 98,484 tonnes of CO₂e

and total GHG emission reductions for the chosen 10 year crediting period will be 984,840 tonnes of CO₂e.

A risk based approach has been followed to perform this validation activity. In the course of validation, 06 Corrective Action request (CAR) & 01 Clarification Requests (CLs) were raised and successfully closed and no FAR were raised. The review of the Revised VCS-PD and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided LGAI Technological Center S.A. (Applus+ Certification) with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Hereinafter referred as Applus+ Certification) has been appointed by “Ekobil Environmental Services and Consulting Ltd” to perform the validation of Renewal of Crediting Period (RCP) of the project entitled “Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey” under VCS standard version 4.1. The objective of this RCP validation activity is to have an independent third party for the assessment of the project design, ER sheet and to ensure a thorough assessment of the proposed project activity against the applicable VCS requirements. In particular;

- the project's baseline is assessed against “ACM0002 Version 20.0”/07/
- the project’s monitoring plan is assessed against “ACM0002 Version 20.0”/07/
- VCS standard v 4.1 /14/
- VCS program guide v 4.0 /15/

Validation is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of estimated verified emission reductions (VERs).

Revalidation is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of verified emission reductions (VERs) for the renewed crediting period.

1.2 Scope and Criteria

The scope of the RCP renewal is the independent and objective review of the Renewal VCS PD. The Renewal VCS PD is reviewed against the relevant criteria (see 1.1) and decisions by the VCS executive board, including the approved baseline and monitoring methodology. The validation was based on the guidance given in the VCS Guideline version 4.0 and VCS standard version 4.1.

The assessment team has employed a risk based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the Renewal VCS PD. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VERs. The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the VCS-PD.

The only purpose of the revalidation of the crediting period is its usage during the issuance process as part of the VCS project cycle. Therefore, Applus+ Certification can't be held liable by any party for decisions made or not made based on the revalidation of the crediting period opinion, which will go beyond that purpose.

1.3 Level of Assurance

The revalidation of the crediting period has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. No sampling procedure applied for remote site visit or document verifications. The entire documents checked/verification conducted to arrive at positive validation conclusions.

1.4 Summary Description of the Project

The purpose of the project activity is to generate power using renewable hydro energy. The generated electricity is being exported to the public grid system of Turkey which is dominated by mainly fossil fuel fired power plants.

The Uzuncayir HEPP project is a reservoir based hydro-electric power plant with an installed capacity of 82 MW. Uzuncayir HEPP is located on Munzurriver and it is 18 km away from Tunceli city center. The project will have a dam and a 13.4 km² reservoir. Uzuncayir HEPP consists of 3 units, each having an installed capacity of 27.33 MW. Total installed capacity of the project is 82.0 MWe and the expected electricity generation is 322,000 MWH per annum.

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The average annual GHG emission reductions from the project activity will be 98,484tonnes of CO₂e and total GHG emission reductions for the chosen 10 year crediting period will be 984,840 tonnes of CO₂e.

2 VALIDATION PROCESS

2.1 Method and Criteria

Re-Validation Scope: The scope is defined as an independent and objective review of the project design document for renewal for crediting period. The Renewal VCS is reviewed against VCS standard version 4.1, including the approved baseline and monitoring methodology ACM 0002 version 20.0/07/ (for the present scenario in the project).

The validation is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the VCS PD.

Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

Once the project is received by the assessment team, the members of the assessment team carried out:

- I A desk review of the Joint project design documentation and monitoring report;
- II Follow-up interviews with project stakeholders;
- III The resolution of outstanding issues and the issuance of the Validation report and opinion.

In order to ensure transparency, assumptions must be clear and stated explicitly and background material must also be referenced. LGAI TECHNOLOGICAL CENTER S.A. (APPLUS+ CERTIFICATION) has developed a specific checklist customized for the project. The checklist demonstrates, in a transparent manner, the project criteria (requirements), discussion on each criterion by the assessment team, and the results from validating/verifying the identified criteria.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, LGAI Technological Center S.A. (Applus+ Certification) has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAI Technological Center S.A. (Applus+ Certification).

The composition of audit team shall be approved by the LGAI Technological Center S.A. (Applus+ Certification) ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Vivek Kumar Ahirwar	LA/TE	YES	YES	YES	YES
Simon Shen	TR	YES	YES	YES	NA

The complete list of CVs is included as Appendix 3 of this report.

Document review

The updated VCS PD submitted by the Client was reviewed against the approved methodology and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in appendix 1.

Follow-up interviews

A remote-site visit is conducted by LGAI Technological Center S.A. (Applus+ Certification) who performed interviews, telephone conferences, and video inspection with project stakeholders to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report in the below sections.

Resolution of Clarification and Corrective Action Request

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for LGAI Technological Center S.A. (Applus+ Certification) positive conclusion on the project design. The Corrective Action Requests and Clarification Requests raised by LGAI Technological Center S.A. (Applus+ Certification) were resolved during communications between the Client and Applus+ Certifications to guarantee the transparency of the validation process, the concerns raised and responses given are summarized below in the appendix 3.

The final VCS PD Version 11 dated 08/10/2021 serves as the basis for the final assessment presented. Additional changes to the project during the revalidation process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Internal quality control

As a final step of verification, the final documentation including the verification report has to undergo an internal quality control by the Technical Reviewer. Each report has to be finally

approved either by the VVB's Technical Manager or the Deputy. In case one of these two persons is part of the assessment team, the approval can only be given by the person who is not a part of the assessment team. If the documents have been satisfactorily approved, the Validation Registration Deed is submitted to the Client along with the relevant documents.

Thus, a draft verification report prepared by verification team is reviewed by an independent technical review team (one or more members) to confirm whether all the internal procedures established and implemented by Applus+ Certification were duly complied with and such opinion/conclusion were reached in an objective manner that complies with the applicable CDM rules/requirements and VCS requirement. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team.

During the technical review process, additional findings may be identified or the closed-out findings may be opened, which needs to be satisfactorily resolved before the Validation Registration Deed is submitted to Client. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that needs to be resolved by the verification team. The decision taken by the Technical Reviewer is final and is authorized by the authorized approver of Applus+ Certification.

After confirmation of the project owners the positive validation/verification opinion and relevant documents are submitted to the VCS secretariat through the VCS web-platform.

2.2 Document Review

The VCS PD submitted by the Client was reviewed against the approved methodology, VCS PD & Final Validation report of first crediting period and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done.

The details of the document observed during the revalidation process are listed below in Appendix 1 of this report.

2.3 Interviews

Due to the current situation with the global COVID-19 pandemic scenario and country wide lock down in world, an on-site inspection has not been performed by the assessment team. However, the representatives of the PP and O&M contractors were interviewed Zoom digital platform virtually on 16/08/2021 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 N	Name	Organization
1	Mr. Fatih Baydar	Trading Deputy Manager - Limak Energy
2	Dr. Aslı Sezer Özçelik	Consultant-Ekobil Environmental Services and Consultancy Ltd.
3	Ms. Zeynep Artac	Consultant-Ekobil Environmental Services and Consultancy Ltd.
4	Mr. Zeynelabidin SEVGİLİ	Elektrik-Elektronik Yüksek Mühendisi
5	Mr. Yılmaz ADAR	Local Stakeholders
6	Mr. Taşbalta KÖYÜ	Local Stakeholders
7	Mr. Murat ALAVLI (Akyayla Village)	Local Stakeholders
8	Mr. Tahsin SEZGİN – (Meydandere Village)	Local Stakeholders
9	Mr. Meydandere KÖYÜ M.	Local Stakeholders
10	Mr. Naci ŞEN (Alkumru Jandarma Komutanı)	Local Stakeholders
11	Mr. Yılmaz Adar-Taşbalta Village	Local Stakeholders
12	Mr. Murat Alavli-Taşbalta Village	Local Stakeholders
13	Mr. Tahsin Sezgin-Meydandere Village	Local Stakeholders
14	Mr. M. Naci Sen- Alkumru Gendarmerie Commander	Local Stakeholders

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. Also, during the interviews, local employment, stakeholders input mechanism etc. were discussed. The assessment was drawn based on the feedback received during zoom interview coupled with the documentation.

2.4 Site Inspections

As discussed in the above section, physical site inspection is not done for the revalidation. However to achieve a reasonable level of assurance, the assessment team has followed the alternative means to substantiate the validation criteria as described in the below table:

Assessment Criteria	Means of verification/source documents	Assessment opinion
Description of project activity	i. Commissioning certificates /09/ ii. Connection Agreement (between the PP and grid)	The information's with reference to project capacity, technology, plant equipment(s) and

Assessment Criteria	Means of verification/source documents	Assessment opinion
	operator TEIAŞ)/10/ iii. VCS Validation Report /2/. iv. Zoom interview on 16/08/2021	commissioning dates as provided in section 1.1 of PD are found consistent with the documents. Additionally, reported information at the time of validation (which was based on a site inspection by validating VVB at the time project registration) was also checked and found the current reporting consistent with the validated and registered project activity.
Compliance of the project implementation with the registered PD	i. Geographical co-ordinates (Location of solar plant) verified through Google Map ii. VCS verification report /2/. iii. Connection Agreement (between the PP and grid operator TEIAŞ)/10/ iv. Zoom Interview on 16/08/2021 v. Photograph of all the Hydro Plant, energy meters installed at site and screen shots of online monitoring system /21/	Location of hydro plantis verified through Google Map. Daily generation records are verified to check the operational status of project activity. Also, checked the operation data from the real-time screenshots. Grid connectivity of the project is confirmed through the PPA. All the information's regarding the project implementation as discuss above are further verified through previous VCS verification report along with latest and found consistent.
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	i. Zoom interview on 16/08/2021 ii. Connection Agreement (between the PP and grid operator TEIAŞ)/10/ iii. Photograph of all the hydro Plant, energy meters installed at site	The organizational structure, responsibilities and competencies of the personnel confirmed through Zoom interview. The methods used for measuring, recording, storing, aggregating, and reporting the data on monitored parameters are verified though PPA and

Assessment Criteria	Means of verification/source documents	Assessment opinion
	and screen shots of online monitoring system /21/	interactions with site personnel. Procedure for data uncertainty, emergency preparedness, roles and responsibility, operational and management structure are mentioned in the PD is confirmed through documents and found satisfactory.
Assessment of data and calculation of emission reductions or net removals	i. Data published by Turkish Ministry of Energy and Natural Resources /08/ ii. VCS Project validation report /2/	Methods, formulae and emission factor for calculating baseline emissions have been followed and they are found to be in accordance with the applied methodology and also to in the approved VCS verification report.

The VVB's assessment team has verified sufficient appropriate audit evidences, to reduce audit risk to an acceptably low level as requisite to achieve reasonable level of assurance for the RCP validation of the project.

2.5 Resolution of Findings

The objective of this step is to identify, discuss and conclude on the issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions. This is done based on the desk review and zoom interview of site personnel. The VVB's assessment team prepares and/or updates a validation protocol (internal document) that records the conformities and non-conformities, which may be of following types;

CAR (Corrective Action Request) is raised if one of the following occurs:

Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;

Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;

Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;

Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met. All CARs and CLs raised by the Applus+ Certification during verification shall be resolved prior to submitting a request for issuance.

FAR (Forward Action Request) is raised during verification if the monitoring and reporting require attention and/or adjustment for the next verification period.

During the RCP validation, 06 Corrective Action request (CARs), 00 Forward Action Request (FAR) and 01 Clarification request (CLs) were raised and successfully closed.

All the findings that are raised and communicated to project participant during the verification are included under Appendix 3. The section also includes the response, if provided, by the project participants and an assessment by the verification team if it was closed out or otherwise.

2.5.1 Forward Action Requests

No FAR was raised during this RCP validation process. No FAR raised from validation and previous verifications. Please refer Appendix 2 for details.

3 VALIDATION FINDINGS

3.1 Project Details

Project type, technologies and measures implemented, and eligibility of the project:

Same as described in the registered VCS PD and updated PD.

Project proponent and other entities involved in the project-

The project proponent is same as mentioned in the registered VCS PD/01/.

Project start date-

Start date of project activity is 02/12/2009, which was the date on which project has begun generating emission reductions. Same as mentioned in the registered VCS PD.

Project crediting period-

As per the registered PD, crediting period was considered from 02/12/2009 to 01/12/2019 which can be renewed twice for the duration of ten year each.

The second crediting period is from 02/12/2019 to 01/12/2029.

Project scale and estimated GHG emission reductions or removals-

The estimated annual emission reductions for the project activity are 98,484 tCO₂e which is less than 300,000 tCO₂e. Hence the category is applicable under "Project".

Project location-

Same as in registered PD/01/.

Conditions prior to project initiation-

Same as in registered PD/01/.

Project compliance with applicable laws, statutes and other regulatory frameworks:

The project is a voluntary initiative by the project proponent and has not been implemented to meet any local / national laws or regulatory compliances. The project activity is in compliance with current laws and regulations and there are no legal and/or regulatory requirements that prevent the project implementation. Also the validation team has confirmed that there is no such compliance requirement with an emission trading program or any binding limits on GHG emissions for the project activity in Turkey (host country) as it is a non-annex 1 country. The project is in compliance with local laws and regulations.

Ownership and other programs-

Right of use

Same as in the registered PD. In addition the validation team reviewed the PPA/10/, commissioning certificates/09/.

Emissions trading programs and other binding limits-

The project is not participating in other emission trading programs. The letter of undertaking/18/ has been furnished by project participant confirming that net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions.

Other forms of environmental credit sought or received and eligible to be sought or received:

The project is registered under the VCS (ID 0762) only.

Participation under other GHG programs:

The project is registered only under VCS project activity

Project ID: 0762

Rejection by other GHG programs:

The project has not been rejected by other GHG programs.

Additional information relevant to the project, including:

- **Eligibility criteria for grouped projects**

The project activity is not a grouped project, hence not applicable to the project activity.

- **Leakage management for AFOLU projects**

Not applicable to the project activity.

- **Commercially sensitive information**

No commercially sensitive information has been excluded from the public version of the project description.

SDG contributions:

The PP has discussed the SDG parameters in section 1.17 of the updated PD as

SDG-7 on access to affordable, reliable, and sustainable energy, as the project is not relying on imported fossil fuels.

Assessment team has verified the information about SGD-7 and found to be appropriate contribution by the project under this parameter as this is renewable clean energy generation from hydro plant.

SDG-8 is to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. In this project, occupational trainings and occupational health trainings were given regularly. The project providing decent and secure work environment.

Assessment team has verified the information about SGD-8 and found to be appropriate contribution by the project under this parameter as constructions of this power plant contribute sustainable economic growth in term of employment and decent work required for operation of power plant.

SDG-13 on urgent action to combat climate change, as the project is replacing the fossil fuel based national grid and it is producing emission reductions.

Assessment team has verified the information about SGD-13 and found to be appropriate contribution by the project under this parameter as power is generated from renewable source as hydro power plant electricity generation which displace equivalent amount of electricity generated by fossil fuel based national grid.

Conclusion:

In view of the assessment of VCS PD/05/ and supporting documents as listed in Appendix 1 of this report, the validation team is able to confirm that the description contained in the VCS PD of the project activity provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation. Consequently, Applus+ Certification confirms that the project description of the project contained in the VCS PD/05/ to be complete and accurate. The VCSPD complies with the relevant forms and guidance for completing the VCS PD.

3.2 Safeguards

3.2.1 No Net Harm

There is no negative impact to any socio economic conditions of the region due to the project activity. This project activity will not involve any negative environmental or socio-economic impacts, as the project activity involves generation of power using hydro energy which is a clean source of energy. Hence no mitigation measures are required

3.2.2 Local Stakeholder Consultation

As per section 3.6 of the Validation Report for registered PD ; Since Limak did not undertake the construction of the project, the company did not hold an official stakeholder participation meeting. However, the project managers had been open to face to face communications with local people in order to solve any problem that the project had caused. The ongoing communication is undertaken through stakeholder visits to the site or direct contact via telephone. For this purpose:

One of the religiously important visit points was moved to a higher location in order to save the location from remaining under the reservoir water.

The project provided some construction materials to surrounding villages for their infrastructure needs.

The project is planning to construct some recreational activity centers around the reservoir.

In section 2.2 of the PD, the PP has explained that there was a remote meeting was held with stakeholders on February 25, 2021, same was confirmed during remote interview with the PP and some of local stakeholder who attended this meeting. Furthermore, it was confirmed that there is no negative comment received from any stakeholder and they have satisfied with operation of project activity since commissioning of project.

During revalidation of project for RCP, the remote interview was done with local villagers and it was verified that, the project provides job opportunities to local workers. The stakeholders were also present during the zoom virtual/remote site visit. They were interviewed by the validator. All of the stakeholders that were interviewed were content with the project activity and the general opinion was that the project was beneficial for the surrounding villages.

3.2.3 Environmental Impact

The project was approved to be implemented in year 1985, way before the EIA concept was born, with the construction to be completed by the State Water Works (DSI, a public body responsible with water project development and application). Hence, the project preparation phase never included an EIA process. When the project owner took over the project in 2007, 99% of the construction had already been completed without an EIA and the project owner was exempt from conducting an EIA because their only duty was to reengineer the equipment design and finish the installation. The project has "EIA not required certificate" dated 29.11.2007. However, after this date the project capacity is increased and applied to Ministry of Environment and Forestry for review the certificate. The Ministry of Environment and Forestry has confirmed that after the capacity increased EIA is not required for this project. The letter from Ministry of Environment and Forestry has been taken after the capacity is submitted to the validation team. The letter confirms that EIA is not required for this project. It has been verified depending on the processes that the project complies with the legal requirements.

3.2.4 Public Comments

This is revalidation/ RCP validation for renewal of crediting period of already registered VCS Project ID 0762, therefore, this section is not applicable.

3.2.5 AFOLU-Specific Safeguards

Not Applicable, as for non-AFOLU projects, this section is not required.

3.3 Application of Methodology

3.3.1 Title and Reference

The project activity has applied CDM approved methodology: ACM0002: Grid-connected electricity generation from renewable sources - Version 20.0. Sectoral Scope: 01

Tools referenced in the applied methodology:

“Tool to calculate the emission factor for an electricity system” - Version 7.0,

“Tool for the demonstration and assessment of additionality” (Version 05.2.1)

“Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” (Version 03.0.1)

3.3.2 Applicability

Applus+ Certification has assessed the relevant information contained in the Renewal VCS PD and evidence obtained during remote audit against the application criteria listed in the methodology. The applicability of this methodology is justified as below:

The proposed project activity is a greenfield, grid connected renewable electricity generation project,

The project activity is the installation of hydro power plant,

The project does not involve capacity addition, a retrofit of (an) existing plant(s) or a replacement of (an) existing plant(s)

Project activity does not involve switching from fossil fuels to renewable energy sources at the site of project activity

The project does not involve combined heat and power generation activity

The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available.

The VVB’s assessment team has validated the documentation referred to in the Renewal VCS PD and verified the documentation content for verifying the justification of the applicability of the methodology and confirmed that the documentation referred to in the Renewal VCS PD is correctly quoted and interpreted. The assessment team has also crosschecked the information provided in the Renewal VCS PD with the documentation other than from the Renewal VCS PD based on the local and sectoral knowledge of the assessment team. Following documentation has been reviewed by the assessment team:

Remote-Site Visit Interview

Technical detail analysis of the power plant from the documents submitted by the manufacturer.

Commissioning certificates

The assessment of the project’s compliance with the applicability criteria of ACM0002 - Version 20.0 are documented in detail in Renewal VCS PD.

Applus+ Certification confirms that the application of the baseline methodology is transparent and conservative and confirms that the chosen baseline and monitoring methodology i.e. ACM0002 - Version 20.0 is applicable to the project activity.

3.3.3 Project Boundary

The project boundary as depicted in the renewal VCS PD is checked during the validation remote site discussion and also during the interview with the plant official.

The project boundary is given by the applied methodology, ACM0002, version 20.0.0:

“The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to.”

The spatial extent of project boundary diagram (including the metering system) referred by the methodology is now mentioned in the renewal VCS PD as per the requirement of applied methodology and thus the same is acceptable to the assessment team. The below table mentions the emission source:

Source	Gas	Included?	Justification/Explanation	
Baseline	Electricity Generation in baseline (Turkey's grid)	CO ₂	Yes	Main emission source
		CH ₄	No	Minor emission source
		N ₂ O	No	Minor emission source
		Other	N.A	N.A
Project	Emission from the reservoir of the proposed project	CO ₂	No	Minor emission source
		CH ₄	Yes	As the power density of the project is less than 10 but higher than 4, CH ₄ emissions of the reservoir is calculated and deducted from emission reductions.
		N ₂ O	No	Minor emission source
		Other	N.A	N.A
	Auxiliary Diesel Generator	CO ₂	Yes	Main emission source
		CH ₄	No	Minor emission source
		N ₂ O	No	Minor emission source
		Other	N.A	N.A

The consideration, by the PP, of only CO₂ gas for the baseline emissions is conservative and also in line with the methodology. The exclusion of CH₄ & N₂O in the baseline scenario is appropriate. The project activity involves the generation of electricity using hydro energy. Hence, there are no project emissions associated with this project activity. Hence, the exclusion of CO₂, CH₄ & N₂O in the project scenario are appropriate. There are no other sources of project emissions. Hence, the project participant has considered the project emissions as zero for project activity; this is in line with the methodology.

The assessment team is able to conclude that the project boundary and selected sources are applied as per the methodology and the applicable VCS criteria.

3.3.4 Baseline Scenario

The baseline scenario is still valid for this next crediting period and it is given by the applied methodology: “If the project activity is the installation of a Greenfield power plant, the baseline scenario is electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.”.

Thus, as per VCS Standard 4.1, para 3.8.5; 2. b). “Where it is determined that the original baseline scenario is still valid, the GHG emissions associated with the original baseline scenario shall be reassessed using the latest version of the CDM Tool to assess the validity of the original/ current baseline and to update the baseline at the renewal of a crediting period.”

Step 1: Assess the validity of the current baseline for the next crediting period

Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies

The current baseline scenario complies with all relevant mandatory National/sectoral legislation. The project received the production license from the Turkish Energy Market Regulatory Authority on 26/08/2010. This license ensures that the project complies with all national regulations. The term of the license is 45 years.

Step 1.2: Assess the impact of circumstances

Turkish Power Sector has the installed capacity is predominantly coal based and therefore, is a major source of carbon dioxide emissions in Turkey. Hence, there exists scope for reducing the CO₂ emissions in the country by increased use of renewable energy sources. Furthermore, project participant has considered the latest available official data provided by Turkish Ministry of Energy and Natural Resources published on 06/10/2021 at the time of requesting renewal of the crediting period for establishing the baseline emission factor, which itself considered all the new circumstances. Hence, the new circumstances do not have an impact on the baseline emission.

Step 1.3: Assess whether the continuation of the use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested

As explained in step 1.2, the baseline scenario was the electricity generation from the power plants connected to the electricity grid. Therefore this condition is not applicable to the project activity.

Step 1.4: Assessment of the validity of the data and parameters

The emission factor has been updated using latest tool to calculate emission factor & official data provided by Turkish Ministry of Energy and Natural Resources published on 06/10/2021.

Step 2: Update the current baseline and the data and parameters

The approved consolidated baseline methodology, ACM0002 version 20.0 has been used to determine the baseline and the estimation of emission reductions for the current crediting period.

The data and parameters are calculated using “Tool to calculate the emission factor for an electricity system” (version 06.0).

Being a grid connected hydro energy generation project, PP developed the project based on the Methodology ACM0002 - Version 20.0. As per Para 23 the methodology “Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.

As per CDM validation and verification standard for project activities Version 02.0, “*The DOE shall determine whether the description of the identified baseline scenario in the PDD is in accordance with the selected standardized baseline*”. As the selected approved methodology clearly mention the baseline scenario and the same has been opted in this project, therefore, no further analysis on baseline is required. VVB’s Assessment Team, therefore, concludes that the renewal VCS PD conforms to the guidance given by EB via CDM validation and verification standard for project activities Version 02.0.

3.3.5 Additionality

According to the VCS Standard 4.1, section 3.8.5, “*a full reassessment of additionality is not required when renewing the project crediting period. However, regulatory surplus shall be demonstrated in accordance with Section 4.6.3 and the project description shall be updated accordingly*”.

And according to the section 4.6.3, “*The project shall not be mandated by any law, statute or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework. For UNFCCC non-Annex I countries, laws, statutes, regulatory frameworks or policies implemented since 11 November 2001 that give comparative advantage to less emissions-intensive technologies or activities relative to more emissions-intensive technologies or activities need not be taken into account. For all countries, laws, statutes, regulatory frameworks or policies implemented since 11 December 1997 that give comparative advantage to more emissions-intensive technologies or activities relative to less emissions-intensive technologies or activities shall not be taken into account*”

This project is a greenfield hydro power plant and it is not mandated by any law, statute or other regulatory framework from the host country or foreign countries or UNFCCC.

Furthermore, the project shall not be mandated by any enforced law, statute or other regulatory framework, or for UNFCCC non-Annex 1 countries, any systematically enforced law, statute or

other regulatory framework. The Project complies with all relevant mandatory national and or/sectoral policies. The project received the production license from the Turkish Energy Market Regulatory Authority on 27/09/2007. This license ensures that the project complies with all national regulations. The term of the license is 49 years. The assessment team has assessed the same and confirms that there is no other regulatory surplus for such projects. Therefore, the project is not mandated by any enforced law, statute or other regulatory framework.

3.3.6 Quantification of GHG Emission Reductions and Removals

The baseline emissions as discussed in renewal VCS PD will include emissions that would have occurred in the absence of the project activity. The emission reduction calculation has been done as per the methodology ACM0002 - Version 20.0.

The baseline emissions as discussed in VCS PD will include emissions that would have occurred in the absence of the project activity. The emission reduction calculation has been done as per the methodology ACM0002 - Version 20.0.

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

Where,

BE_y = Baseline emissions in year y (t CO₂/yr)

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

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

Validation team assessed the technical specification of the promoters of the project activity. Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin (OM) and build margin (BM) factors according to the procedure prescribed in the “Tool to calculate the emission factor for an electricity system” version 6.0 and OM & BM values are sourced from official data provided by Turkish Ministry of Energy and Natural Resources published on 06/10/2021 and forms the part of emission reduction calculation. The baseline emission factor calculation is checked by the validation team and found that the calculation is transparent and conservative.

The combined margin of the public grid used for the project activity is as follows:

Parameter	Value	Nomenclature	Source
$EF_{grid,OM,y}$	0.7258tCO ₂ /MWh	Operating margin CO ₂ emission factor for grid connected power generation in year y	Data published by Turkish Ministry of Energy and Natural Resources on 06/10/2021
$EF_{grid,BM,y}$	0.4153tCO ₂ /MWh	Building margin CO ₂ emission factor for grid connected power generation in year y	Data published by Turkish Ministry of Energy and Natural Resources on 06/10/2021
$EF_{grid,CM,y}$	0.4929tCO ₂ /MWh	Combined margin Emission Factor of Turkey	Calculated as the weighted average of the operating margin (0.25) & build

			margin (0.75) values, sourced from Data published by Turkish Ministry of Energy and Natural Resources on 06/10/2021
--	--	--	---

$EF_{grid,CM,y} = 0.4929 \text{ tCO}_2\text{e/MWh}$ and it is fixed ex ante for the second crediting period. Considering this process, combined margin emission factor has been considered and same value is confirmed correct.

Baseline Emissions

Hence, the calculation of baseline emission is calculated as follows:

Where:

- BE_y Baseline emissions in year y (tCO_2/yr)
- $EG_{facility,y}$ Electricity supplied by the Uzuncayir Hydropower Electricity Power Plant to the grid and equal to 244,438 MWh/yr
- $EF_{grid,CM,y}$ Combined margin CO_2 emission factor for the grid and equal to 0.4929 tCO_2/MWh

Therefore:

$$BE_y = 244,438 \times 0.4929 = 120,483 \text{ (tCO}_2/\text{yr)}$$

Project Emissions

As per para 36 of ACM0002 - Version 20.0

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$$

- PE_y = Project emissions in year y ($\text{t CO}_2\text{e/yr}$)
- $PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y ($\text{t CO}_2/\text{yr}$)
- $PE_{GP,y}$ = Project emissions from the operation of dry, flash steam or binary geothermal power plants in year y ($\text{t CO}_2\text{e/yr}$)
- $PE_{HP,y}$ = Project emissions from water reservoirs of hydro power plants in year y ($\text{t CO}_2\text{e/yr}$)

In this case,

$$PE_{FF,y} = 0,$$

Since for all renewable energy power generation project activities, emissions due to the use of fossil fuels for the backup generator can be neglected according to the methodology. There are

5 auxiliary diesel generators in the project activity and the emissions resulting from the occasional use of these generators.

$$PE_{GP,y}=0,$$

Since this is not a dry or flash steam geothermal project activity.

$$PE_{HP,y}= 21,999 \text{ tCO}_2\text{e/year}$$

Where: $PE_{HP,y}$ = Project emissions from water reservoirs (tCO₂e/yr)

$$PE_{HP,y} = \frac{EF_{Res} \times TEG_y}{1000}$$

Where:

- $PE_{HP,y}$ = Project emissions from water reservoirs (t CO₂e/yr)
- EF_{Res} = Default emission factor for emissions from reservoirs of hydro power plants (kg CO₂e/MWh)
- TEG_y = Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (MWh)

The power density of the project activity is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}}$$

Where:

- PD = Power density of the project activity (W/m²)
- Cap_{PJ} = Installed capacity of the hydro power plant after the implementation of the project activity (W)
- Cap_{BL} = Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero
- A_{PJ} = Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m²)
- A_{BL} = Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m²). For new reservoirs, this value is zero

$$Cap_{PJ} = 82,000,000 \text{ W}$$

$$Cap_{BL} = 0 \text{ (Justification: The project is a new hydro power plant)}$$

$$A_{PJ} = 13,400,000 \text{ m}^2$$

$$A_{BL} = 0 \text{ (Justification: The project is a new hydro power plant)}$$

Therefore;

$$PD = (82,000,000 - 0)/(13,400,000 - 0) = 6.119 \text{ W/m}^2$$

Therefore;

PE_y cannot be assumed to be 0. For hydro power project activities that result in new single or multiple reservoirs and hydro power project activities that result in the increase of single or multiple existing reservoirs, project proponents shall account for CH₄ and CO₂ emissions from the reservoirs, estimated as follows:

If the power density of the project activity using equation (7) or in case of integrated hydro power project using equation (8) is greater than 4 W/m² and less than or equal to 10 W/m² :

$$PE_{HP,y} = \frac{EF_{Res} \times TEG_y}{1000}$$

Where:

$$PE_{HP,y} = \text{Emission from reservoir expressed as tCO}_2\text{e/year}$$

$$EF_{Res} = \text{Is the default emission factor for emissions from reservoirs, and the default value as per EB23 is 90 Kg CO}_2\text{e /MWh}$$

$$TEG_y = \text{Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (MWh).}$$

Therefore;

$$PE_{HP,y} = 244,438 * 90 / 1000 = 21,999 \text{ tCO}_2\text{e/year}$$

In conclusion,

$$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$$

$$PE_y = 0 + 0 + 21,999$$

$$PE_y = 21,999 \text{ tCO}_2\text{e/year}$$

.

Leakage

As per applied methodology, no other leakage emissions are considered.

The project activity reduces carbon dioxide emissions through displacement of grid electricity generation with predominantly fossil fuel based power plants by renewable electricity. The emission reduction (ER_y) due to project activity during a given year y is calculated as the difference between baseline emissions (BE_y), project emissions (PE_y) and emissions due to leakage, as per the formulae given below:

$$ER_y = BE_y - PE_y$$

Where,

ER_y = Emission Reduction in tCO₂/year

BE_y = Baseline emission in tCO₂/year

PE_y = Project emissions in year y (t CO₂e/yr).

Hence,

$$ER_y = BE_y - PE_y$$

$$= 120,483 - 21,999$$

$$= 98,484 \text{ t CO}_2\text{e/yr}$$

Baseline emissions are calculated as per the applied methodology ACM0002 - Version 20.0 para 44. The emission reduction sheet, Data published by Turkish Ministry of Energy and Natural Resources and Renewal VCS PD is checked by the assessment team and found to be correct, hence accepted. The baseline emission factor calculation is checked by the validation team and found that the calculation is transparent and conservative.

3.3.7 Methodology Deviations

This section is not applicable as there is no methodology deviation observed during this validation.

3.3.8 Monitoring Plan

Assessment team checked the monitoring practice during remote interview with monitoring team and also checked the registered monitoring plan of registered VCS –PD. There is no change in monitoring plan since project registration confirmed from previous verification reports.

Parameters determined ex-ante: Baseline emission factor of Public Grid of Turkey is established ex-ante based on Tool to calculate the grid emission factor, using a combined approach consisting 25 % operating margin and 75 % build margin for second crediting period. The emission coefficient from official data published by Turkish Ministry of Energy and Natural Resources on 06/10/2021; available to the project proponent at the time of submission of renewal VCS PD for validation. The assumption were verified by the validation team and found to be correct.

Parameters determined ex-post: The parameters monitored ex-post involves net electricity supplied to the grid (calculated from electricity exported and imported) to the public grid (Turkish) by the project activity. As per the updated VCS PD, the “Main TEIAS meter recorded at the monthly reading protocols” is the source of the monthly values of net electricity supplied by the project activity. The VVB will use the same source for verification of emission reductions. TEIAS (Turkish Electricity Transmission Corporation) is a Government Organization responsible for distribution of electricity, with no interests in the Project Activity. As per the applied methodology ACM0002 - Version 20.0 “Monitoring shall consist of metering the net electricity supplied by the project activity to the grid. Measurement results shall be cross-checked with records for sold electricity/electricity bills”. In accordance with the methodology requirement, net electricity supplied by the project activity is obtained from the monthly reading protocols provided by TEIAS and same is the basis for emission reduction calculation.

There are three main meters, each record the generation/import of electricity from each line that transmit the electricity generated by each unit of generators, and there are three back-up meters, for each one of these main meters. The accuracy class of the energy meters is 0.5. The meter need to be calibrated every 10 years as per the government regulation/17/.

The parameters Cap_{PJ} (Installed capacity of the hydro power plant after the implementation of the project activity) and 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) is also monitored parameters in section 5.2 of the updated PD. There is no change with respect to registered VCS PD.

The responsibilities and authorities of project management, data handling and recording, measurement methods and QA/QC procedure have been systematically established and formalized and the same was verified and discussed during remote audit interview with site person.

3.4 Non-Permanence Risk Analysis

Not Applicable

4 VALIDATION CONCLUSION

Applus+ Certification has been engaged by Ekobil Environmental Services and Consulting Ltd to perform the Renewal of crediting period of the “Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey” VCS Project ID 0762 for crediting period 02-December-2019 to 01-Decemebr-2029.

Renewal of crediting period Conclusion:

Applus+ Certification commenced the revalidation of the crediting period based on the following documents:

- baseline and monitoring methodology ACM0002 – version 20,
- VCS Standard version 4.1,
- Methodological tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” version 03.0.1,
- monitoring plan contained in the updated VCS PD.

As summary the validation team able to conclude that:

- The project is in line with all relevant host country criteria (Turkey) and all relevant VCS version 4.1 program guidelines requirements.
- The validity of the original/current baseline and update of the baseline at the renewal of the crediting period is sufficiently justified in the revised VCS PD.
- The monitoring plan is transparent and adequate and in line with applied baseline and monitoring methodology of ACM0002, version 20.0.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 3,813,820 tCO₂e is most likely to be achieved during the 10 years (renewable) of crediting period.
- The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation as outlined under VCS standard version 4.1.

Applus+ Certification’s renewal of crediting period approach is based on the understanding of the risks associated with reporting of estimated GHG emission data and the controls in place to mitigate these. Applus+ Certification planned and performed the renewal or crediting period by obtaining evidence and other information and explanations that Applus+ Certification considered necessary to give reasonable assurance that reported information and estimated GHG are fairly stated.

APPENDIX 1: <Document Reference >

S.No	Title of Document	Version	Date
1.	Registered VCS PD	06	03/12/2010
2.	VCS Validation Report by Bureau Veritas Certification Holding SAS	06	31/12/2010
3.	VCS Verification report (Monitoring period: 01/11/2011 - 01/12/2019)	1.04	31/03/2021
4.	Revised PD (Intermediate versions)	07	20/05/2021
		08	27/08/2021
		09	27/09/2021
		10	06/10/2021
5.	Revised PD (Final)	11	26/10/2021
6.	ER spread sheet (corresponding to the final revised PD)	11	08/10/2021
7.	Applied Methodology ACM0002, “ Grid-connected electricity generation from renewable sources”	20	-
8.	Data published by Turkish Ministry of Energy and Natural Resources on 06/10/2021 https://enerji.enerji.gov.tr/Media/Dizin/BHIM/tr/Duyurular//Bilgi_Formu_Web_Sitesi_2019_202110071443.pdf	-	06/10/2021
9.	Commissioning certificate for Unit 1, 2 and 3	-	-
10.	Connection Agreement (between the PP and grid operator TEİAŞ)	-	-
11.	System Usage Agreement (between the PP and grid operator TEİAŞ)	-	-
12.	Technical Specification of the main equipments	-	-
13.	VCS webpage for the project, VCS ID 762; https://registry.verra.org/app/projectDetail/VCS/762	-	-
14.	VCS Standard	4.1	Issued:19/09/2019 Updated: 22/04/2021
15.	VCS Program Guide	4.0	19/09/2019
16.	Single line diagram along with meter location	-	-

17.	Periodic calibration is indicated as 10 years in article 9 of the following regulation: https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=6381&mevzuatTur=KurumVeKurulusYonetmeligi&mevzuatTertip=5	-	-
18.	Deceleration document pertaining to not participated in any other GHG Programs and no other forms of credit	-	-
19.	Monthly export and import value available on the TEIAS and EPIAS PORTAL which are government authorizes.	-	-
20.	Daily Production Reports	-	-
21.	Photograph Name plate details of major equipment and monitoring energy meters	-	-
22.	CDM Tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”.	03.0.1	-
23.	Methodological Tool: Tool to calculate the emission factor for an electricity system	6.0	-

APPENDIX 2: <ABBREVIATIONS>

Abbreviations	Full texts
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM PCP	Clean Development Mechanism Project Cycle Procedure
CDM PS	Clean Development Mechanism Project Standard
CDM VVS	Clean Development Mechanism Validation and Verification Standard
EB	Executive Board
EF	Emission Factor
EPC	Engineering ,Procurement and Construction
ER	Emission Reductions
CER	Certified Emission Reduction
CR	Clarification Request
DNA	Designated National Authority
FAR	Forward Action Request
GHG	Greenhouse Gas(es)

IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MR	Monitoring Report
MWh	Megawatt hour
PD	Project Description
PPA	Power Purchase Agreement
PP	Project Proponent
PRC	Post Registration Changes
TR	Technical Review
VCS	Verified Carbon Standard
VER	Verified Emission Reduction
VVB	Validation/Verification body (ies)

APPENDIX 3: <FINDINGS OVERVIEW>

Table 1. Remaining FAR from validation and/or previous verification

FAR ID	Section no.	Date :
Description of FAR		
NA		
Project participant response		Date :
NA		
Documentation provided by project participant		
NA		
VVB assessment		Date:
NA		

Table 2. CL from this validation

CL ID	01	Section no.	PD 1.15 & 1.16	Date :23/08/2021
Description of CL				
The PP is requested to provided deceleration document pertaining to not participated in any other GHG Programs and no other forms of credit as mentioned 1.15 and 1.16 of the updated VCS-PD.				
Project participant response				Date :27/08/2021
Non-participation to any other programs document is prepared and shared.				
Documentation provided by project participant				
deceleration document				
VVB assessment				Date: 15/09/2021
The PP has provided the deceleration document pertaining to not participated in any other GHG Programs and no other forms of credit, same has been check and verified, hence accepted. CL#1 closed.				

Table 3. CAR from this validation

CAR ID	01	Section no.	PD- Section 01	Date :23/08/2021
Description of CAR				
<ol style="list-style-type: none"> 1. Please submit the track change version of the VCS-PD against registered VCS-PD; on latest PDD template? 2. As per VCS project web page, the latest version of the registered VCS-PD is Version 06, therefore PP requested to clarify why the version of PD is not updated chronologically on Page 01 of the submitted updated VCS-PD. 3. The PP is requested to update the current implementation of the project and also discussed about project VCS millstone (like VCS registration, Monitoring Periods , Project Deviation like i.e. capacity changes etc.) achieve during its first crediting period. 4. The PP is requested to submit supporting documents to confirm there is no change of ownership of each unit of Hydro Plant, Capacity and Technology Provider /Supplier, Technical Specification and Grid connected to project. 5. The PP is requested to clarify why the estimated value of CERs decrease from the value mentioned in registered VCS-PDD Version 06 as 151,211 tonnes CO2 equivalent per annum. 6. The PP is requested to provide details about 1st Crediting period in section 1.9 of the updated VCS-PD? 7. The PP is requested to check there are words without spaces in entire updated VCS-PD. Please kindly correct the same. 				
Project participant response				Date :24/08/2021

1. The parts that remained the same from the old PD were fixed, the newly added parts were corrected with the track change.
2. The version of the PD is corrected.
3. Section 1.1 is corrected by giving additional information as milestones of the project, monitoring periods etc.
4. Ownership of each unit of Hydro Plant, Capacity and Technology Provider /Supplier, Technical Specification and Grid connected to project are still same. In our last virtual site visit, the plant manager stated that there was a 0.1% decrease in capacity. However, when we talked to him later, he stated that such a situation did not occur, only that there were minor changes in the shares of the project's shareholders.
5. Production was below our estimates due to climate change and drought. At the same time, the fact that the last published emission factor was lower than the previous emission factor created this situation.
6. Section 1.9 is corrected by adding information about the first crediting period.
7. Entire VCS-PD is checked and corrected.

Documentation provided by project participant

1. Please see new version of the VCS PD.
2. Please see new version of the VCS PD.
3. Please see new version of the VCS PD.
4. Ownership of each unit of Hydro Plant, Capacity and Technology Provider /Supplier,
5. Please see new version of the VCS PD.
6. Please see new version of the VCS PD.
7. Please see new version of the VCS PD.

VVB assessment

Date: 15/09/2021

The PP has provided the updated PD according to requested corrections, same was found to be correct and hence accepted. CAR#1 is closed.

CAR ID	02	Section no.	PD section -02	Date	:23/08/2021
Description of CAR					
<ol style="list-style-type: none"> 1. Please elaborate on how due account of all and any input received during ongoing communication has been taken care by the Project Proponent. Describe if any or provide statement no relevant communication has been received, etc. 2. PP needs to submit copy of grievance records and clarify if there is any comment received for this project. 					

Project participant response	Date : 27/08/2021
1.Necessary information about the grievance mechanism has been added to the report. 2.Grievance records are submitted.	
Documentation provided by project participant	
1. Please see new version of the VCS PD. 2. Grievance records	
VB assessment	Date: 15/09/2021
The PP has provided the updated PD and evidence for ongoing communication relevant to grievance mechanism according to requested corrections, same was found to be correct and hence accepted. CAR#2 is closed.	

CAR ID	03	Section no.	PD section -03	Date :23/08/2021
Description of CAR				
1. The PP is requested clarify why the tool version for the “Tool to calculate the emission factor for an electricity system “is not updated in section 3.1 of the updated VCS-PD. 2. The PP is requested to provide discussion of each applicability criteria of applicable Methodology ACM0002 / Version 20.0 and also discussed about Tool applicability of the TOOL “Tool to calculate the emission factor for an electricity system”. 3. The PP is requested to clarify why “Methodological Tool 11 “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period.” Version 03.0.1, EB 66 Annex 47” is not discussed in section 3.4 of the updated VCS-PD?				
Project participant response				Date : 27/08/2021
1.The version of the tool is corrected. 2.Section 3.2 is corrected by adding an applicability conditions table. 3.Section 3.4 is corrected.				
Documentation provided by project participant				
1. Please see new version of the VCS PD. 2. Please see new version of the VCS PD. 3. Please see new version of the VCS PD.				
VB assessment				Date:
The PP has provided the updated PD and according to requested corrections has been made in the updated PD, same was found to be correct and hence accepted. CAR#3 is closed.				

CAR ID	04	Section no.	PD section -04	Date :23/08/2021
Description of CAR				
<ol style="list-style-type: none"> 1. The PP has requested to clarify how the appropriate data vintage is applied to calculated OM and BM as the updated VCS-PD (dated 20-May-2021) is submitted to VVB in July 2021. 2. The PP is requested to correct the equation for project emission as mentioned in 4.2 of the updated VCS-PD. 				
Project participant response				Date : 27/08/2021
<p>1.OM and BM values are given separately by the Turkish Ministry. Since the calculations of the renewal of crediting period made according to past verification period, the data remains same.</p> <p>2.Equations are corrected.</p>				
Documentation provided by project participant				
<ol style="list-style-type: none"> 1.Please see new version of the VCS PD and the combined emission factor calculation sheet published by Turkish ministry. 2.Please see the new version of the VCS PD 				
VVB assessment				Date:
The PP has provided the updated PD and according to requested corrections has been made in the updated PD, same was found to be correct and hence accepted. CAR#4 is closed.				

CAR ID	05	Section no.	PD section -05	Date :23/08/2021
Description of CAR				
Please also provide previous meter details along with calibration dates and its validity in section 5.3 of the VCS-PD, in order to maintain chronology of metering equipment used for this project.				
Project participant response				Date : 27/08/2021
Previous meters are added in section 5.3				
Documentation provided by project participant				
Please see new version of the VCS PD.				
VVB assessment				Date:
The PP has provided the updated PD and Previous meters details has been mentioned in the updated PD, same was found to be correct and hence accepted. CAR#5 is closed.				

CAR ID	06	Section no.	PD	Date :26/09/2021
Description of CAR				
<p>1. ER sheet for 2019, the days considered is not correct, this must be 30 days?</p> <p>2. Please correct the Total amount of Emission Reduction as the Value is 112,612 is Baseline Emission. There is Project Emissions value is 21,999</p> <p>3. Please check there are formula and equation is showing some error in section 4.2.</p>				
Project participant response				Date : 27.09.2021
<p>1. ER sheet for 2019 is corrected.</p> <p>2. Total amount of emission reductions are corrected in the PD.</p> <p>3. Section 4.2 is corrected.</p>				
Documentation provided by project participant				
<p>1. Please see ER calculation sheet.</p> <p>2. Please see revised version of the PD.</p> <p>3. Please see section 4.2 of the relevant PD.</p>				
VVB assessment				Date : 27/09/2021
<p>The PP has provided the updated PD and ER sheet, the Baseline Emission and Project Emissions details has been corrected in the updated PD and ER sheet, same was found to be correct and hence accepted. CAR#6 is closed.</p>				

Table 4. FAR from this validation

FAR ID	XX	Section No.	XX	Date :
Description of FAR				
NA				
Project participant response				Date : DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
VVB assessment				Date : DD/MM/YYYY
NA				

APPENDIX 4: <COMPETENCY STATEMENT>

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus+ Certification has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of Applus+ Certification.

The composition of audit team shall be approved by the Applus+ Certification ensuring that the required skills are covered by the team.

The four qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A) / Auditor in Training (AiT).
- Technical Expert (TE).
- Technical Reviewer (TR).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Qualification	Coverage of scope	Coverage of technical Area	Financial aspect	Host country Experience	Attendance to the Assessment (remote)
VivekKumarAhirwar	Lead Auditor (LA)	Yes (1)	Yes (1.2)	N/A	Yes	Yes
VivekKumarAhirwar	Technical Expert (TE)	Yes (1)	Yes (1.2)	N/A	Yes	Yes

Simon Shen	Technical Reviewer (TR)	Yes (1)	Yes (1.2)	N/A	N/A	N/A
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The curricula vitae of the VVB's team members are provided below:

Vivek Kumar Ahirwar is a BEE-Certified Energy Auditor by Govt of India with over eight years of relevant experience in energy efficiency, energy audit, thermal and electrical energy generation technology from renewable source and energy conservation in energy intensive industries, designated consumers and commercial buildings, implementation of energy conservation building codes, research, process and green building projects. He is a certified lead auditor for ISO 14001 EMS and 14064. He has experience under various categories of projects stating from renewable to waste to supercritical projects and WCD. He has successfully audited more than 100 GHG (CDM/VCS/GS) projects in different states across the India. He has done Mater in Technology (Energy Management) from a premier institute, School of Energy & Environmental Studies, DAVV, Indore (M.P.), India and Bachelor of Engineering (Mechanical Engineering) from Govt. Engineering college, Rewa, RGPV, India.

Simon Shen (master degree in thermal energy engineering, bachelor degree in environmental engineering) is a lead auditor appointed by Applus+ certification for the GHG project assessment. He is based in Shanghai. He has several years of work experience in environmental protection field. Before he joined Applus+ certification, he had been worked for TÜV SÜD as a GHG validator/verifier and ISO 9001/14001 lead auditor for 3.5 years.