



VCS JOINT VALIDATION & VERIFICATION REPORT

FEKE II 69.58 MW HYDROELECTRIC POWER PLANT



Document Prepared by

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Summary:

Provide a brief summary of the following:

- **A description of the project**

FEKE II 69.58 MW HYDROELECTRIC POWER PLANT is a runoff river hydro power plant is constructed in the Mediterranean Region, on the Goksu Creek, a main branch of Seyhan River, within the province of Adana, about 9 km southwest of Feke I district in Turkey, with a total capacity of 69. 58 MW. The hydro plant is converting the potential energy of the water into electricity by means of 2 vertical axis Francis turbines units .The electricity generated is sold to the Turkish National Electricity Grid. The project activity is a non-grouped project which employs VCS methodology; ACM0002 version 21.

The project activity has been operational since commissioning (24/10/2010) and during the 3rd monitoring period of 1st CP i.e., from 01-October-2018 to 31-December-2020, it has generated 385,602.425 MWh net electricity, thereby resulting in emission reduction of 210,923 tCO₂e, also during the 1st monitoring period of 2nd CP i.e., from 01-January-2021 to 31-December-2021, it has generated 105,723.839 MWh net electricity, thereby resulting in emission reduction of 48,802 tCO₂e. The monitoring periods subject to this monitoring report is inclusive of first and last day of period.

- **A description of the validation and verification**

Carbon Check (India) Private Ltd. has been contracted by, “Akenerji Elektrik Üretim A.Ş.” to undertake 3rd verification and certification for 1st CP , Renewal of Crediting Period and 1st verification and certification for 2nd CP of the greenhouse gas (GHG) emission reductions reported from ‘ FEKE II 69.58 MW HYDROELECTRIC POWER PLANT ’ VCS ID 534, for the monitoring period 01-October-2018 to 31-December-2020, under the 1st crediting period 01-January-2011 to 31-December-2020 (both days included) and for the monitoring period 01-January-2021 to 31-December-2021, under the second crediting period 01-January-2021 to 31-December-2030 (both days included). The validation and verification is based on the desk review of the Joint PD-MR /01/, registered VCS PD & the corresponding validation report, supporting emission reduction calculation spread sheets /02/ and other relevant supporting documents made available to the validation verification team by the project proponent accompanied by onsite visit interviews. In line with the relevant requirements of VCS Standard Version 4.3.

- **The purpose and scope of validation and verification**

Purpose: The purpose of the validation and verification is to review the design of project, monitoring results and verify that monitoring is implemented according to monitoring plan and monitoring data, used to confirm the reductions in anthropogenic emissions by sources is sufficient, definitive, and presented in a concise and transparent manner. In particular, monitoring plan, PD, monitoring report and the project's compliance with relevant VCS, UNFCCC and host party criteria are validated and verified in order to confirm that the project has been implemented in accordance with previously registered design and conservative assumptions, as documented.

Scope: The scope of the validation and verification is:

- To verify the project implementation and operation with respect to the registered VCS PD.
- The validation shall ensure that the calculated assumed emission reductions and projects implementation as per VCS PD are complete and accurate in order to be certified as per RCP rules of section 3.8.9 of VCS standard Ver 4.3.

- To verify the implemented monitoring plan with the registered VCS PD and applied baseline and monitoring methodology.
- To verify that the actual monitoring systems and procedures follow the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence. The Verification shall ensure that the reported emission reductions are complete and accurate to be certified.
- **The method and criteria used for validation and verification**
 - (a) Desk review, involving:
 - (i) Review of the data and information presented to verify their completeness.
 - (ii) Review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures.
 - (iii) Evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.
 - (b) Onsite visit assessment involving:
 - (i) Assessment of the implementation and operation of the proposed VCS project activity as per the registered VCS PD.
 - (ii) Review of information flows for generating, aggregating, and reporting the monitoring parameters.
 - (iii) Interview with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan in the VCS PD.
 - (iv) A cross-check between information provided in the monitoring report and data from other sources such as inventories, purchase records, or similar data sources.
 - (v) A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the VCS PD and the selected methodology.
 - (vi) Review of calculations and assumptions made in determining the GHG data and emission reductions.
 - (vii) 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.
- **The number of findings raised during validation and verification**

A risk-based approach has been followed to perform this Joint RCP Validation and verification. During the course of validation and verification, total of 10 findings were raised, which includes:

10 Corrective Action Request (CAR); 00 Clarification Requests (CLs); 0 Forward Action requests (FARs).

All the raised findings are resolved by the PP.

- **Any uncertainties associated with the validation and verification**

The VCS Joint PD-MR /01/, emissions reduction calculations /02/ along with the supporting documents provided are considered to be in line with all the VCS requirements /B01/. The verification team has detected no further uncertainties or quality restriction.

- **Summary of the validation and verification conclusions**

As a result of the RCP validation & verification, the validation/verification team confirms that:

- The project fulfils criteria of VCS Standard Version 4.3.
- The project is in line with all relevant VCS requirements.
- The project baseline is sufficiently justified in line with the “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.
- The monitoring plan is transparent, adequate and in line with applied baseline and monitoring methodology of ACM0002 - Version 21.0.
- All information and references relevant to the project activity resulting in emission reductions.

In CCIPL's opinion, renewal of crediting period and the emission reductions reported for the “ FEKE II 69.58 MW HYDROELECTRIC POWER PLANT” in the Joint PD-MR are checked. CCIPL is therefore able to certify that the emission reductions from the “ FEKE II 69.58 MW HYDROELECTRIC POWER PLANT” during the 3rd monitoring period of 1st CP i.e., from 01-October-2018 to 31-December-2020, it has generated 385,602.425 MWh net electricity, thereby resulting in emission reduction of 210,923 tCO₂e, also during the 1st monitoring period of 2nd CP i.e., from 01-January-2021 to 31-December-2021, it has generated 105,723.839 MWh net electricity, thereby resulting in emission reduction of 48,802 tCO₂e.

CC IPL does not assume any responsibility towards the issuance and utilization of VCUs hereby verified and certified. Request for issuance of VCUs shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration. The verification of reported emission reductions is based on the information made available to CCIPL and the engagement conditions detailed in this report. Hence, CCIPL cannot be held liable by any party for decisions made or not made based on this report.

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1 INTRODUCTION

1.1 Objective

Carbon Check (India) Private Ltd. has been contracted by, “Akenerji Elektrik Üretim A.Ş.” to undertake Validation for renewal of crediting period (RCP) and verification and certification for the greenhouse gas (GHG) emission reductions reported from ‘FEKE II 69.58 MW HYDROELECTRIC POWER PLANT (VCS ID 534)’ for the monitoring period 01-October-2018 to 31-December-2020 (Inclusive of both days), under the first crediting period (01/01/2010 to 31/12/2020) and for the monitoring period 01-January-2021 to 31-December-2021 (Inclusive of both days) under the second crediting period (01/01/2021 to 31/12/2030), in the initial joint project description and monitoring report version 01 dated 06/11/2022, with regard to the relevant requirements of VCS Standard Version 4.3. The purpose of validation is to ensure a thorough, independent assessment of the project description (PD), the project's baseline, the additionality, the monitoring plan (MP) and the project's compliance with

- The requirements of VCS Program guide Version 4.2
- The requirements of VCS Standard Version 4.3
- The requirements of the CDM Approved methodology, ACM0002 - Version 21.0
- To assess the project's compliance with other relevant rules, including the project country (Turkey) legislation and
- Other relevant rules, of VCS sustainability criteria are validated in order to confirm that the project description as documented is sound and reasonable and meet the stated requirements and identified criteria.
- For the verification part, the VCS projects must undergo an independent third-party verification and certification of emission reductions as the basis for issuance of Voluntary Emission Reductions (VERs).

The objectives of the verification, to establish that:

- The project activity has been implemented and operated as per the project description (PD) and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- The data is recorded and stored as per the monitoring methodology and monitoring plan.
- To confirm that the monitoring system is implemented and fully functional to generate Voluntary Emission Reductions (VERs/VCUs) without any double counting, and
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.

1.2 Scope and Criteria

For RCP validation, the scope is defined as an independent and objective review of the Project description, the project's baseline study, monitoring plan and other relevant documents made available to the CCIPL team, alongside contract conditions. The information in these documents is reviewed against the requirements of VCS Standard. CCIPL has employed a risk-based approach in the RCP validation, focusing on the identification of significant risks for project implementation and the generation of Emission Reductions.

The items covered in the RCP validation are described below:

- VCS Criteria, VCS standard version 4.3
- VCS Project Description
- Assessment of baseline as per the "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
- Background investigation and follow up interviews
- Draft validation reporting with CARs & CLs, if any
- Final validation reporting

For verification, the scope is defined as an independent and objective review of monitoring part, registered CDM and VCS project description (VCS PD), revised VCS project description including the monitored data, and other relevant documents made available to verifier and information collected through performing interviews during Onsite assessment(interviews) of the project activity. CCIPL, based on the recommendations in the latest version of Verified Carbon standard, and employed a rule-based approach (as criteria) in the verification, focusing on the identification of significant reporting rules and the reliability of project monitoring. The aspects to be covered under the purview of verification are:

Ensure that the project activity has been implemented and operated as per the project description along and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place as per the documents provided by the client and during Onsite audit;

Ensure that the monitoring part and other supporting documents provided are complete;

Ensure that the practiced monitoring system and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved CDM methodology;

Evaluate the data recorded and stored are as per the monitoring methodology.

1.3 Level of Assurance

- ☒ Reasonable level of assurance

The joint validation and verification report is based on Joint VCS PD & MR and the supporting documents made available to the validator/verifier. Based on the process and procedures conducted, CCIPL states whether the information in the Joint VCS PD & MR:

- is materially correct and is a fair representation of the actual project details, and
- is prepared in accordance with VCS requirements and the applied CDM methodology for information pertaining to GHG qualification, monitoring and reporting.

CC IPL has employed a risk-based approach in the RCP validation and verification, focusing on the identification of significant risks for project implementation and the generation of Emission Reductions. The items covered in the RCP validation & verification are described below:

- Criteria of VCS Version 4 (VCS Program guide Version 4.2 & VCS Standard Version 4.3)
- Criteria of CDM approved methodology, ACM0002 - Version 21.0
- VCS Joint VCS PD & MR
- Monitoring Plan
- Background investigation and follow up interviews
- Stakeholder feedback
- Registered VCS PD and Validation Report

project's compliance with other relevant rules, including the project country (India) legislation and assurance to stakeholders of the quality

Furthermore, the assessment team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data available on public domain. A desk review is carried out to assess the following:

- Compliance with relevant law and regulations
- Stakeholder comments (If any)
- Single line diagram and site location map
- Technical specifications of WTGs, meters etc.
- Power Purchase Agreement
- Commissioning Certificate

Onsite auditing (06/12/2022) for RCP validation & verification

- Export/Import data records
- Calibration Certificates

The assessment team has checked all the above-mentioned details and confirms that all the information provided is accurate. The validation and verification work is carried out as per this requirement and the

validation and verification opinion is assured provided the credibility of all above. Details are presented in the Validation and verification statement in section below.

1.4 Summary Description of the Project

The project activity is located on Göksu Creek that is branch of Seyhan River. The project consists of compressed concrete dam with a crest length of 256 meters and a height of 60 meters from the riverbed; 317 meters long derivation tunnel, upstream and downstream cofferdams, spillway, 171 meters long penstock and a powerhouse. In the powerhouse, 2 vertical axis Francis turbines are installed with a total capacity of 69.58 MWe. The generated electricity is transmitted to the National Electricity System through Feka Havza TM, with a 154 kV and 7 km long energy transmission line. The project site lies between 35° 51' 41.7" - 35 ° 52' 2.2" E longitudes and 37° 44' 35.9" - 37° 44' 52.6"N latitudes. The closest settlement is the Feka Village, about 10 km north of the project site, within the province of Adana. The Feka District has an uneven topography and subject to landslide. Project site is about 2.8 and 4 km away from nearest settlements (Akkaya and Kısacıklı Villages). It has not been any changed or modified on the project content and details as per Electricity production license /07/ also shared to CCIPL authority by PP. The Manager of the HPP also showed the Units of the field and HPP during onsite visit.

During the onsite visit inspection, location (as mentioned in section 1.12 of Joint PD & MR) and all the technical aspects of the project activity (equipment, serial no., type, date of calibration etc.) mentioned above have been verified. The same was also crosschecked during the desk review of supporting documents like technical specification /04/, single line diagram/06/, PPA /03/ and commissioning certificates /08/.

The project proponent for the project activity is Akenerji Elektrik Üretim A.Ş. owns the rights to VERs and program ownership /11/. The project activity start date is 24/12/2010 . The same was confirmed through Commissioning document (Provisional Acceptance Letter) /08/.

The third monitoring period (01-October-2018 to 31-December-2020) considered for verification falls under the first crediting period of the project activity (01-January-2011 to 31-December-2020) and 1st monitoring period (01-January-2021 to 31-December-2021) considered for verification falls under the second crediting period of the project activity (01-January-2021 to 31-December-2030).

During the onsite audit inspection, location (as mentioned in Table, section 1.12 of Joint PD-MR) and all the technical aspects of the project activity (equipment, serial no., type, date of calibration etc.) mentioned in the Joint PD & MR have been verified. The same was also crosschecked during the desk review of technical specifications, Single line diagram and meter location, Provisional acceptance letter, review of data during Onsite audit and calibration certificates for meters.

It was also confirmed (through Onsite interviews) that the project activity has been operational since commissioning (24/12/2010) and during the 3rd monitoring period of 1st CP i.e., from 01-October-2018 to 31-December-2020, it has generated 385,602.425 MWh net electricity, thereby resulting in emission

reduction of 210,923 tCO₂e, also during the 1st monitoring period of 2nd CP i.e., from 01-January-2021 to 31-December-2021, it has generated 105,723.839 MWh net electricity, thereby resulting in emission reduction of 48,802 tCO₂e. The project activity has been implemented as described in the registered VCS PD/B04/ in particular sections 1.1, 1.8, 1.13, 2.2, 4.1, 4.2 and 4.3 of the registered VCS PD.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

The RCP validation and verification process was carried out in line with the requirements of VCS Version 4.3 . In addition, the validation/verification team followed the guidelines of the CDM Validation and Verification Standard. Standard auditing techniques and CCIPL's CDM Procedures were also applied during the RCP validation & verification. A risk-based approach was followed to carry out the process and access all the factors and concerns that relate to the issuance of emission reductions from a project activity.

They include:

- Identification of all the sources contributing to the project emissions and emission reductions.
- Authenticity of the provided data is checked.
- A risk-based analysis is carried out to ensure a clear and transparent assessment. The risks involved in this process are mainly with the informational flows and data recording.

CC IPL follows a risk-based RCP Validation & verification approach, wherein a desk review of the project documentation is undertaken, which is followed by an onsite discussion/inspection by the members of assessment team. The validation and verification protocol is filled by the assessment team that is based on standard auditing practices and VCS requirements. The validation and verification protocol provides transparent means to record the observations by the

assessment team members and the non-conformities, if any. The validation and verification protocol is an internal document, and available on request.

2.2 Document Review

A desk review is undertaken, involving but not limited to,

- A review of the data and information presented to verify their completeness; A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

The list of documents reviewed is included in the section 'Appendix 1'.

2.3 Interviews

The table below describes the onsite interview process and further identifies personnel, including their roles, who were interviewed and/or provided information additional to that provided in the project description, Joint PD-MR /01/ and any supporting documents.

SN	Date	Name	Organisation	Topic	Persons Interviewed
/1/	06/12/2022	Ozan Ereslan	Akenerji Elektrik Üretim A.Ş. - Chief Project Manager	• Project Design • Project Implementation status • Project start date and Project Location • Baseline Scenario • Baseline Identification • Compliance with relevant laws • Roles and responsibility	Dinesh Mane & Muhammet Ali Erduran

/2/	06/12/2022	Hussain Dogenyigit	Akenerji Elektrik Üretim A.Ş. – HPP Instrumentation Technician	• Qualification and Training • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Local Stakeholders meeting process • Compliance with relevant laws • Roles and responsibility	Dinesh Mane & Muhammet Ali Erduran
/3/	06/12/2022	1) Mr. Omer Ordejon 2) Mrs. Fethiye Guher 3) Mrs. Emine Eoksu	Villager (Islam Village, Feke District) Villager (Karacausagi Village, Feke District) Villager (Karacci Village, Feke District)	• Social and Environmental Impacts • Continuous Grievance mechanism	Dinesh Mane & Muhammet Ali Erduran

/4/	06/12/2022	IŞIL DOĞAN	EKI Energy Services Ltd.- Project Carbon Consultant	- Emission reduction calculations - Monitoring report	Dinesh Mane & Muhammet Ali Erduran

2.4 Site Inspections

CC IPL conducted onsite visit inspection on 06/12/2022, to achieve a reasonable level of assurance, this is in conformance with the VCS rules.

Accordingly, Carbon Check has conducted an on-site inspection. A reasonable level of assurance has been maintained through the same and used for the purpose of RCP validation and verification as follows:

- 1) An assessment of the implementation and operation of the project activity as per the registered VCS PD /B04/
- 2) A review of information aggregating and reporting of the monitoring parameters
- 3) Interviews with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the MP (section 2.3 above)
- 4) A cross-check between product sales information provided in the Joint PD & MR /01/ and data from other sources.
- 5) A check of the monitoring equipment including calibration performance, and observations of monitoring practices against the requirements of the VCS PD and the applied monitoring methodologies /B02/
- 6) A review of calculations and assumptions made in determining the GHG data and ERs /02/, and
- 7) An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters
- 8) The verification team carried out onsite visit interviews with representatives of PP to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for the VCS.

Hence, the VVB has also used other standard auditing techniques for RCP validation and verification as referred to in VCS Rules/requirements, VCS Validation and Verification Manual.

- Verification team has performed interview with PP to check implementation, project boundary, current situation, monitoring and metering equipment, monitoring procedures, calibration etc.
- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in MR /01/ and supporting documents.
- A check of the monitoring equipment including performance and observations of monitoring practices against the requirements of the registered VCS PD /B04/ and the selected methodology /B02/.

2.5 Resolution of Findings

CC IPL, during this RCP validation and verification, identified issues related to the monitoring, implementation or operation of the VCS project that could impair the capacity of the proposed VCS project to achieve project emission reductions or influence the reporting of emission reductions. CC IPL has identified, discussed these issues within the Verification report in Appendix 4.

- Clarification requests (CLs): Project reporting lacks transparency and further information is needed to determine if a material discrepancy is present.
- Corrective action requests (CARs): The VVB has identified a material discrepancy or non-conformance that the project proponent must address.

The verification team identified 10 CAR. All CAR raised by Carbon Check during this validation and verification are resolved by the PP.

2.5.1 Forward Action Requests

Forward Action Request (FAR) is to be raised when the monitoring and reporting require attention and/or adjustment for the next verification period. FARs does not relate to VCS requirements for issuance of ERs achieved during subject monitoring.

No FAR is raised during this verification.

3 VALIDATION FINDINGS

3.1 Project Details

Project scope, activity, type, technologies and measures implemented, and eligibility of the project. The proposed project activity is the installation and operation of 2 hydro Turbine Generators (TG) of total generating capacity of 69.58 MWe in in the Mediterranean Region, on the Goksu Creek, a main branch of Seyhan River, within the province of Adana, Turkey which has been verified from the Power purchase agreement/03/. The project activity contributes to reduction in specific emissions including GHG emissions and is also responsible for sustainable economic growth through use of water as a renewable source. The purpose of this project activity is to generate clean form of electricity through renewable hydro energy source. The project activity is expected to have an annual generation of about 223.410 GWh of electricity during second crediting period.

The project has been designed to include a single installation of an activity and is not a grouped activity.

The technical specifications of the project as verified from the registered PD and on-site photographs /04/.

During the onsite audit inspection, location (as mentioned in section 1.12 of Joint PD & MR) and all the technical aspects of the project activity (equipment, serial no., type, date of calibration etc.) mentioned above have been verified. The same was also crosscheck during the desk review of supporting documents like technical specification /04/, single line diagram /06/, PPA /03/ and commissioning certificates /08/.

Project proponent

Project entity information as verified is presented below:

Item	Data
Project Entities	Akenerji Elektrik Üretim A.Ş. (Project Owner)
	EKI Energy Services Limited (Other Entity)

The assessment team has confirmed the same from the Power Purchase Agreement /03/, Generation license /07/ and registered documents in CDM and VCS.

Project start date

The project activity has been operational since commissioning (24-December-2010), which is the date of commissioning of the Turbine /08/. This is in accordance with section 3.7 of VCS standard, Version 4.3.

Project crediting period

This is the second crediting period for 10 years (01-January-2021 to 31-December-2030 (both dates inclusive)). The assessment team has confirmed that the same has been correctly mentioned in the Joint VCS PD and MR.

Project scale and estimated GHG emission reductions or removals

The total installed capacity of the project has been confirmed from the generation license /07/ and found to be 69.58 MWe. The validation team confirms that the project activity falls under the category 1 'Project' as per para 3.9.1 of the VCS standard version 4.3, as it does not have the potential to reduce GHG emission more than 300,000 tCO₂e/year.

The estimated annual average and the total CO₂e emission reduction by the project activity over the second renewable crediting period of 10 years are expected to be 103,126 tCO₂e and 1,031,260 tCO₂e respectively. The assessment team confirmed that emission reduction forecast is reasonable if the underlying assumptions do not change.

Project location

The project site lies between 35° 51' 41.7" - 35 ° 52' 2.2" E longitudes and 37° 44' 35.9" - 37° 44' 52.6"N latitudes. The closest settlement is the Feki Village, about 10 km north of the project site, within the province of Adana in Turkey. The project lies on the Goksu creek basin, which is a branch of Seyhan River. The geographic co-ordinates of each WTG, as confirmed from the google earth software and the documents/13/ are provided below.

Conditions Prior to Project Initiation

The proposed project activity is a Greenfield activity that is the installation of 69.58 MW hydro power plant for renewable energy-based power generation of electricity. In the absence of the project activity, the equivalent quantity of electricity would have been generated by the operation of fossil fuel-based grid-connected power plants. Therein, the main emission sources in the pre- project scenario are the fossil fuel-based grid connected power plants and the primary GHG involved is CO₂. For this project activity, the baseline scenario is the same as conditions existing prior to project initiation.

Compliance with Laws, Statutes and Other Regulatory Frameworks

The assessment team by its document review confirmed that the project activity is in compliance with all the applicable laws, statutes and other regulatory frameworks. The assessment team has also confirmed that the baseline scenario presented in the VCS Joint PD and MR is also in compliance with the laws and regulations of Turkey.

Ownership and other programs:

The Project is owned by Akenerji Elektrik Üretim A.Ş.; hence it possesses right of use of ER credits. The Ownership is demonstrated through the following documents /11/ provide evidence of project ownership, in accordance with the VCS specifications on project ownership.

1. Power Purchase Agreements /03/
2. Commissioning certificates /08/

3. Generation License /07/

The assessment team has checked the generation license/03/ and verified that Akenerji Elektrik Üretim A.Ş. is the legal owner of the project activity.

At the time of RCP validation, PP submitted an undertaking that they will not claim same GHG emission reductions of the project from other GHG programmes /11/. PP would also not use net GHG emission reductions by the projects for compliance with emission trading program to meet binding limits on GHG emissions as stated in section 1.12.2 of the VCS PD. The above-mentioned information was also confirmed during onsite visit assessment. Project Proponent has submitted undertaking for not availing other forms of environmental credit for the same crediting period under consideration and it has been verified from the supportive provided by PP/11/.

Project Description Deviation:

There are no deviations applicable during this monitoring periods.

Additional Information Relevant to the Project

Eligibility Criteria

This is not a grouped project activity. Thus, this section is not applicable for this project.

Leakage Management

Not applicable to the project activity. Commercially Sensitive Information

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

Sustainable Development

The project promotes sustainable development through the following

aspects:

Social well-being:

- Generating Local Employment: The installation of hydro power project in rural areas will result in generating local employment opportunities and capacity building of the local employees. The project activity would create both direct and indirect employment throughout the life cycle of the project activity.
- Encouragement to entrepreneurs: The project will provide encouragement to

other entrepreneurs to invest into renewable energy sources.

Economic well-being:

- Rural Development: The installation of hydro power project will result in rural and infrastructural development in the surrounding rural areas
- Economic Development: The generation of hydro power will result in improvising the reliability of the Turkish Grid and thereby enhance economic development in the region.

Environment well-being:

- Reduction in the consumption of fossil fuels: The installation of power plant generating electricity through renewable resource such as hydro power, would lead to reduction in usage of fossil fuels e.g. Coal, oil, natural gas.
- Reduction in GHG emissions: The reduction in usage of fossil fuels for electricity generation will result in reduction of the release of associated GHG emissions (CO₂ and CH₄ emissions).
- Improvement of Air Quality: The use of renewable energy for power generation will avoid the emission of air pollutants such as Suspended Particulate Matter (SPM), Sulphur Dioxide (SO₂) and Nitrogen Oxides (NO_x) thereby improvising the surrounding air quality

Technological well-being:

- Advanced Technology: The project activity involves installation and operation of state-of-art hydro turbine generators. The implementation of these new technologies will help in increasing reliability of renewable energy generation and encourage development of even better technology in the future.
- Safe and Sound Technology: The project activity deploys the technology, which is environmentally safe and sound, as it does not produce greenhouse gases and any toxic or radioactive waste.
- The assessment team through interviews during the onsite visit audit confirms that the project promotes sustainable development through social, economic, environmental and technological well-being by generating employment opportunities, helping in conservation of natural resources, encouraging investment in environmentally safe and sound technology and also by reducing GHG emissions through generation of clean energy and thereby improving the **air quality**.

3.2 Participation under Other GHG Programs

CCIPL validation and verification team verified the information provided in the VCS Joint PD-MR, by reviewing all the relevant standards/programs to confirm that the VCS project is appearing in any other registries/websites of programs/standards. In doing this, the CCIPL validation and verification team crosschecked the information regarding the consistency of the title of the projects and GPS coordinates. Verification team has checked GS registry (<https://registry.goldstandard.org/projects?q=&page=1>).

Similarly, GCC project database (https://projects.globalcarboncouncil.com/pages/submitted_projects) was also checked and found that this project isn't available in GCC and GS project database. Given that CDM projects are not applicable in Türkiye, no domestic REC scheme is implemented yet. Verification team included other both compliance and voluntary programs in search, which can cover both GHG as well as non-GHG including German Emission Trading Authority (DEHSt); other voluntary GHG Programs including Chinese carbon reduction standard (CCER), etc.

Project has no Participation under other GHG programs. The same is validated during onsite interview and reviewing other voluntary program websites of GS, GCC. Project was not registered (or seeking registration) under other GHG program(s) or Rejection by other GHG programs. Project does not claim any Other forms of credit such as Emissions trading programs and other binding limits or Other forms of environmental credit sought or received and eligible to be sought or received.

3.3 Safeguards

3.3.1 No Net Harm

The project activity is grid connected hydro power plant and does not involve any negative impact. Assessment team confirms it based on its local and sectoral expertise. Project does not found any potential negative environmental and socio-economic impacts identified by the project proponent.

3.3.2 Local Stakeholder Consultation

The local stakeholder consultation meeting for the project activity was conducted on project site and the process was validated during the registration of project activity in VCS /B04/. VCS validation report was verified to confirm the same. The PP had invited identified stakeholders well in advance through announcement in newspapers to citizens of nearby settlements, NGO's, relevant governmental institutions with details of venue and time of meeting.

PP has also maintained established mechanism for ongoing communication with local stakeholders, to allow stakeholders to raise concerns about potential negative impacts during project operation stage. They have provided and communicated about Continuous Input / Grievance Expression Process Book kept in village named İslam Mahallesi, which developed as a grievance redress procedure, to address disputes with local stakeholders that may arise during project operation phase in crediting period, including with regard to benefit sharing. The procedure includes processes for receiving, hearing, responding, and attempting to resolve grievances within a reasonable time period. The same understood by validation team during onsite interview carried out with stakeholder i.e., during discussion with local stakeholders and PP.

During the 1st crediting period and this monitoring period of 2nd CP there were no complaints about or demands from the project. The same was confirmed through the onsite audit conducted during the RCP validation and review of readdress grievance register/book /22/.

3.3.3 Environmental Impact

As one of the sustainable renewable energy generation technologies, this large scale HEPP poses low environmental impacts, which can be mitigated by taking appropriate measures. The Project activity EIA has been examined by the Ministry of Forest and Environment as the requirement to prepare an Environmental Impact Assessment /28/. The Project is fully in line with national laws and regulations. Nevertheless, Project contributes positively towards sustainable development in Turkey in terms of social, environmental, technological and economic wellbeing as indicated in VCS Joint PD-MR.

3.3.4 Public Comments

As this is a registered VCS project, after that, this validation is for renewal of crediting period, this section is not applicable.

3.3.5 AFOLU-Specific Safeguards

As this is a non-AFOLU project, this section is not applicable.

3.4 Application of Methodology

3.4.1 Title and Reference

The UNFCCC approved baseline and monitoring methodology ACM0002, version 21, is applied for the project activity. Following tools have been used:

- Tool to calculate the emission factor for an electricity system, Version 07.0
- Tool 11: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period, Version 3.0.1

3.4.2 Applicability

Means of validation	The PP has applied the methodology ACM0002 Version 21 /B02/. This version of the methodology is the latest version and currently valid for the submission of project activity. The proposed project activity meets the criteria defined in the baseline methodology as described below:		
	SN	Applicability Criteria	VVB assessment
	1	This methodology is applicable to grid-connected renewable energy power generation project activities that: a) Install a Greenfield power plant; b) Involve a capacity addition to (an) existing plant(s);	The project activity consists in the installation of a new grid connected

		c) Involve a retrofit of (an) existing operating plant(s)/unit(s); d) Involve a rehabilitation of (an) existing plant(s)/unit(s); or e) Involve a replacement of (an) existing plant(s)/unit(s).	renewable power plants at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield power plant). Hence point (a) is applicable. Project electricity generation License /07/, Power Purchase Agreement /03/ and photos/video of site /04/ have been checked. Project is supplying electricity to TEIAS. PPA /03/ has already signed between PP and TEIAS which has been verified by the validation team. Hence the project is in compliance with latest version of the methodology ACM0002 Version 21.0.
	2	In case the project activity involves the integration of a BESS, the methodology is applicable to grid-connected renewable energy power generation	The project activity does not involve the integration of a

		project activities that: (a) Integrate BESS with a Greenfield power plant; (b) Integrate a BESS together with implementing a capacity addition to (an) existing solar photovoltaic or wind power plant(s)/unit(s); (c) Integrate a BESS to (an) existing solar photovoltaic or wind power plant(s)/unit(s) without implementing any other changes to the existing plant(s); (d) Integrate a BESS together with implementing a retrofit of (an) existing solar photovoltaic or wind power plant(s)/unit(s).	BESS, the same is conformed by validation team from generation license /07/.
	2	(a) The methodology is applicable under the following conditions: a) following types: hydro power plant/unit with or without reservoir, wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit;	a) The project activity is the installation of a new hydro power plant as verified during the registration stage of PA. Project electricity generation License /07/, Power Purchase Agreement /03/ and photos/video of site /04/ have been checked. Hence the project is in compliance with latest version of the methodology ACM 0002 Version 21.0.
		b) In the case of capacity additions, retrofits, rehabilitations or replacements (except for wind, solar, wave or tidal power capacity addition projects) the existing plant/unit started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion, retrofit, or rehabilitation of the plant/unit has been undertaken	b) The project activity consists in the installation of a new grid connected renewable power plants at a site where no renewable power plant was operated prior to the implementation

		between the start of this minimum historical reference period and the implementation of the project activity.	of the project activity (Greenfield power plant). Hence this para is not applicable. Hence the project is in compliance with latest version of the methodology ACM 0002 Version 21.0.
		(c) In case of Greenfield project activities applicable under paragraph 5 (a) above, the project participants shall demonstrate that the BESS was an integral part of the design of the renewable energy project activity (e.g. by referring to feasibility studies or investment decision documents);	BESS is not part of PA. The same is confirmed from design of PA verified during onsite visit.
		(d) The BESS should be charged with electricity generated from the associated renewable energy power plant(s). Only during exigencies ² may the BESS be charged with electricity from the grid or a fossil fuel electricity generator. In such cases, the corresponding GHG emissions shall be accounted for as project emissions following the requirements under section 5.4.4 below. The charging using the grid or using fossil fuel electricity generator should not amount to more than 2 per cent of the electricity generated by the project renewable energy plant during a monitoring period. During the time periods (e.g. week(s), months(s)) when the BESS consumes more than 2 per cent of the electricity for charging, the project participant shall not be entitled to issuance of the certified emission reductions for the concerned periods of the monitoring period.	BESS is not part of PA.
	4	In case of hydro power plants, one of the following conditions shall apply: a) The project activity is	The project activity is the installation of a

		implemented in an existing single or multiple reservoir, with no change in the volume of any of the reservoir or b) The project activity is implemented in existing single or multiple reservoirs, where the volume of the reservoir(s) is increased and the power density, calculated using equation (7), is greater than 4 W/m²; or c) The project activity results in new single or multiple reservoirs and the power density, calculated using equation (7), is greater than 4 W/m² d) The project activity is an integrated hydro power project involving multiple reservoirs, where the power density for any of the reservoirs, calculated using equation (7), is lower than or equal to 4 W/m², all of the following conditions shall apply: i. The power density calculated using the total installed capacity of the integrated project, as per equation (8), is greater than 4 W/m²; ii. Water flow between reservoirs is not used by any other hydropower unit which is not a part of the project activity; iii. Installed capacity of the power plant(s) with power density lower than or equal to 4 W/m² shall be: iv. Lower than or equal to 15 MW; and v. Less than 10 percent of the installed capacity of integrated hydro power project.	new hydro power plant. The Power Density (PD) of PA is greater than 4 W/m². Hence this para is applicable. Hence the project is in compliance with latest version of the methodology ACM 0002 Version 21.0.
	4	In the case of integrated hydro power projects, project proponent shall: a) Demonstrate that water flow from upstream power plants/units spill directly to the downstream reservoir and that collectively constitute to the generation capacity of the integrated hydro power project; or b) Provide an analysis of the water balance covering the water fed to power units, with all possible combinations of reservoirs and without the construction of reservoirs. The purpose of water balance is to	The project activity is not an integrated hydropower plant. Hence this para is not applicable. Hence the project is in compliance with latest version of the methodology ACM

		demonstrate the requirement of specific combination of reservoirs constructed under CDM project activity for the optimization of power output. This demonstration has to be carried out in the specific scenario of water availability in different seasons to optimize the water flow at the inlet of power units. Therefore, this water balance will take into account seasonal flows from river, tributaries (if any), and rainfall for minimum five years prior to implementation of CDM project activity.	0002 Version 21.0.
	5	This methodology is not applicable to: a) Project activities that involve switching from fossil fuels to renewable energy at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site b) Biomass fired power plants/ units	It is a renewable energy project with no fuel-switch and biomass fired power plant involved. The project activity is the installation of a new hydro power plant. Hence this para is not applicable.
	6	In the case of retrofits, rehabilitations, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is “the continuation of the current situation, that is to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance”.	The project activity is the installation of a new hydro power plant. Hence this para is not applicable. Hence the project is in compliance with latest version of the methodology ACM 0002 Version 21.0.
Tool 07: Tool to calculate the emission factor for an electricity system - Version 07.0 /B03/			

	Applicability Criteria	VVB assessment
	This tool may be applied to estimate the OM, BM and/or CM when calculating baseline emissions for a project activity that substitutes grid electricity that is where a project activity supplies electricity to a grid or a project activity that results in savings of electricity that would have been provided by the grid (e.g. demand-side energy efficiency projects).	The project is a grid connected Greenfield hydroelectric power project and hence the tool is applicable for the project activity.
	Under this tool, the emission factor for the project electricity system can be calculated either for grid power plants only or, as an option, can include off-grid power plants. In the latter case, two sub-options under the step 2 of the tool are available to the project participants, i.e. option II.a and option II.b. If option II.a is chosen, the conditions specified in "Appendix 2: Procedures related to off-grid power generation" should be met. Namely, the total capacity of off-grid power plants (in MW) should be at least 10 per cent of the total capacity of grid power plants in the electricity system; or the total electricity generation by off-grid power plants (in MWh) should be at least 10 per cent of the total electricity generation by grid power plants in the electricity system; and that factors which negatively affect the reliability and stability of the grid are primarily due to constraints in generation and not to other aspects such as transmission capacity.	Host country has demonstrated step wise approach for the calculation of OM and BM , as per published document i.e., Ministry of Energy and Natural Resources document named as Turkey's National Electricity Network Emission Factor Factsheet "Turkey's National Electricity Network Emission Factor Factsheet (CM calculations)"/21/ section 3.4 of the Joint VCS PD /01/ which is found to be in line with the Tool 07 /B03/.
	In case of CDM projects the tool is not applicable if the project electricity system is located partially or totally in an Annex I country.	Turkey has officially signed the Kyoto Protocol as of 26.08.2009. Despite being an Annex I country, Turkey has not set any emission reduction target; hence it is not listed as an Annex B country of the Kyoto Protocol. Hence this tool is applicable.
	Under this tool, the value applied to the CO2 emission factor of biofuels is zero.	The project is a hydro project and does not involve any biofuels.

	Tool 11: Assessment of the validity of the original - current baseline and update of the baseline at the renewal of the crediting period-v3.0.1 /B03/
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	Applicability Criteria	VVB assessment
	Step 1: Assess the validity of the current baseline for the next crediting period The Procedures for the renewal of the crediting period of a registered CDM project activity. Approved by the CDM Executive Board require assessing the impact of new relevant national and/or sectoral policies and circumstances on the baseline. The validity of the current baseline is assessed using the following Sub-steps:	Refer below remarks
	Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies If the current baseline complies with all relevant mandatory national and/or sectoral policies which have come into effect after the submission of the project activity for validation or the submission of the previous request for renewal of the crediting period and are applicable at the time of requesting renewal of the crediting period, go to Step 1.2. If the current baseline does not comply with relevant mandatory national and/or sectoral policies, then assess based on the examination of current practice in the country or region in which the policies apply, whether those policies are systematically not enforced and that non-compliance with those requirements is widespread in the country or region. If the current baseline is not in compliance with the relevant mandatory national and/or sectoral policies or if it cannot be shown that the policies are systematically not enforced and that non-compliance with those policies is widespread in the country or region, then the current baseline needs to be updated for the subsequent crediting period.	The current baseline complies with all relevant mandatory national and/or sectoral policies which have come into effect after the submission of the project activity for validation and are applicable at the time of requesting renewal of the crediting period as per section 1.14 and 3.2 of the Joint VCS PD-MR /01/.
	Step 1.2: Assess the impact of circumstances Assess the impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline emissions, without reassessing the baseline scenario. In the situation where the baseline scenario identified at the validation of the project	The impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline emissions, without reassessing the baseline scenario is evaluated by PP properly. The circumstances existing

	activity was the continuation of the current practice without any investment, an assessment of the changes in market characteristics is required for the renewal of the crediting period. Evaluate whether the conditions used to determine the baseline emissions in the previous crediting period are still valid. Assess the availability of new fuels or raw materials and the impact of electricity or fuel prices in the identification of the current practice for the baseline emissions. If the new circumstances make a continued validity of the current baseline not plausible, then the current baseline needs to be updated for the subsequent crediting period.	at the time of requesting renewal of crediting period are the same as existing in the validation of the project activity. The estimated baseline emissions using hydro power to supply renewable electricity to the Integrated TEIAS grid that is currently dominated by fossil fuel power plants. In line with that the baseline scenario identified at the validation of the project activity is the still continuation of the current practice without any investment, the same is validated by VVB during onsite interview with PP and cross checked with supported evidence. It could be observed that the emission factor of the Integrated grid applied for the 1st crediting period was 0.547 tCO₂/MWh which has been updated to 0.4616 tCO₂/MWh following the methodological Tool 07 /B03/ and latest database. The grid emission factor is calculated following steps as per tool 'Tool to calculate the emission factor for an electricity system' version 7.0 /B03/. The validation team accessed the data source for emission factor from publicly available source /10/ and confirms that it meets the tool /B03/ requirements. An assessment of the changes in market characteristics is also provided by PP in section 3.2 of PD /01/ for the renewal of the crediting period. Also evaluated whether the conditions used to
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		determine the baseline emissions in the previous crediting periods are found to be still valid. In addition to that it is as well assessed the availability of new fuel (lignite) and the impact of electricity in the identification of the current practice for the baseline emissions as per section 3.4 of Joint VCS PD-MR /01/. The same also confirmed by VVB during onsite visit interview with PP and stakeholders and cross check with supported documents and market due diligence through local expert from the Validation team.
	Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested. This sub-step should only be applied if the baseline scenario identified at the validation of the project activity was the continuation of use of the current equipment(s) without any investment and, the projects proponents or third party (or parties) would undertake an investment later due, for example, to the end of the technical lifetime of the equipment(s) before the end of the crediting period or the availability of a new technology. Assess whether the remaining technical lifetime of the equipment that would have continued to be used in the absence of the project activity, as determined in the CDM-PDD or CDM-PDD-REN, exceeds the crediting period for which renewal is requested. Take into consideration the market penetration of different technologies. Evaluate the penetration rate of different technologies that are available in the market and evaluate how they could affect the baseline. If the baseline scenario of the project activity is the continuation of use of the current	This is new hydro HPP project and not retrofit or replacement of old baseline project hence baseline scenario identified at the validation of the project activity is not the continuation of use of the current equipment(s) without any investment. Therefore, this step is not applicable.

	equipment(s) without any investment and the projects proponents or third party (ies) will undertake an investment later, but before the end of a crediting period, then the current baseline needs to be updated for that crediting period or the crediting of emission reductions should be limited to the period before the baseline equipment would cease its operation.	
	Step 1.4: Assessment of the validity of the data and parameters Assess whether data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period are still valid or whether they should be updated. Updates should be undertaken in the following cases: • Where IPCC default values are used, the values should be updated if any new default values have been adopted and published by the IPCC, for example, in guidelines for national GHG inventories, IPCC assessment report or special reports by the IPCC; • Where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the project activity prior to the implementation of the project and cannot be updated because the historical situation does not exist anymore as a result of the CDM project activity. If any of the data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period are not valid anymore, the current baseline needs to be updated for the subsequent crediting period. If the application of Steps 1.1, 1.2, 1.3 and 1.4 confirmed that the current baseline as well as data and parameters are still valid for the subsequent crediting period, then this baseline, data and parameters can be used for the renewed crediting period. Otherwise, proceed to Step 2.	The data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period are still valid. Only emission factors are changed as determined only once for the crediting period.
	The project activity correctly applies the methodology ACM0002, version 21 /B01/ and the Tool 07 /B03/ and Tool 11 /B03/.	

Conclusion	As per requirements of Para. 412(a)- (iii) of VVS-PA/B03/ validation and verification team confirms that the selected baseline and monitoring methodology has been previously approved by the CDM Executive Board, and is applicable to the project activity, which complies with all the applicability conditions therein and the selected version is valid at the time of submission of the proposed project activity for renewal of crediting period. It is also confirmed that the methodology is correctly applied by comparing it with the actual text of the applicable version of the methodology and there is no deviation from the selected methodology.
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3.4.3 Project Boundary

The project boundary clearly defined in accordance with the applied methodology, according to the approved baseline and monitoring methodology “ACM0002 Ver 21 /B02/”, “Grid connected renewable electricity generation” the project boundary includes the project power plant and all power plants connected physically to the electricity system that the project is connected to the electricity system.

By checking the information by the physical site, CCIPL can confirm that all the emission sources, gases have been included in the project boundary, and the description in the Joint VCS PD & MR is accurate and complete, and also that the selected sources and gases are justified for the proposed project activity.

3.4.4 Baseline Scenario

As per ACM0002., version 21 para 24, “If the project activity is the installation of a Greenfield power plant with or without a BESS as described under paragraph 4(a) or paragraph 5(a), the baseline scenario is electricity delivered to the grid by the project activity that 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 TOOL07.”.

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” Ver 07.

ACM0002, version 21 para 64 also indicate, “Project participants shall refer to “TOOL11: Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” /B03/. Hence the same is applied to check that the provided baseline is still valid or not. Accordingly, it is found that the current provided baseline scenario and previously validated baseline scenario is still valid. For details of steps refer section 3.4.2 of this report. The same is found to be in line with section 3.8.9 (2-b) of VCS standard version 4.3. .

The validation team confirms that the proposed project activity is a new grid connected hydropower plant. Therefore, the baseline scenario as prescribed in the ACM0002, version 21 para 24 is still valid as per Tool 11 and the same is applicable to the project activity.

3.4.5 Additionality

Section 3.8.9 (1) of VCS standard v 4.3 /B01-a/ requires that "A full reassessment of additionality is not required when renewing the project crediting period. However, regulatory surplus shall be demonstrated in accordance with the requirements set out in the VCS Program rules and the project description shall be updated accordingly."

In assessing the continued validity of the baseline, a change in the relevant national and/or sectoral regulations between two crediting periods (1st and Current i.e., second) has been examined at the start of the new crediting period. At the start of the project activity, the project activity was not found mandated by regulations as per registered PD, but also at the start of the second /current crediting period, regulations were also not in place that enforce the practice or norms or technologies that are used by the project activity, i.e., provided in section 1.11 of registered PD /B04/ of previous crediting period (CP), was found to be valid for current CP i.e., conformance provided by PP in section 3.5 of VCS PD /01/, the new regulation (formulated after the registration of the project activity) has also been examined to determine if it applies to existing plants or not. No such new regulation applied to this existing VCS project. The baseline has been reviewed and found no regulation is binding, the baseline for the project activity taken into account for such. The same is validated during interview with project stakeholders and due diligence carried out by Validation team with the help of local expert in a team.

Accordingly, as per section 3.5 of VCS PD /01/, demonstration in relation to regulatory surplus was found to be provided correctly and confirms that this project is not mandated by any law, statute, or other regulatory framework in host country.

3.4.6 Quantification of GHG Emission Reductions and Removals

Baseline Emissions:

In line with applied methodology ACM0002, version 21 baseline emissions are calculated as below:

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

Where:

BE_y	Baseline emissions in year y (tCO ₂)
$EG_{PJ,y}$	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 CO ₂ 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" (tCO ₂ e/MWh)

Therefore, baseline emissions are calculated as:

$$BE_y = EG_{facility} * EF_{grid,CM,y} = 223,410 \text{ MWh/yr} \times 0.4616 \text{ tCO}_2/\text{MWh} = 103,126 \text{ tCO}_2\text{e/yr}$$

$EG_{PJ,y} = EG_{facility,y}$ is the quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr). This is to be calculated from monitoring parameters as per monitoring plan given in section

5.3 of the Joint VCS PD & MR /01/. For ex-ante estimation this is considered to be 223, 410 MWh per year as provided in generation license /07/.

Grid emission factor ($EF_{grid,CM,y}$) is calculated as per 'Tool to calculate the emission factor for an electricity system' version 07 /B03/ considering latest national data and fixed to be 0.4616 tCO₂/MWh for the entire second crediting period.

Accordingly, baseline emission is estimated to be 103,126 tCO₂e per year.

Project emissions:

The project activity is a newly built hydropower project activity with a reservoir. The emission of the reservoir area is calculated as given below:

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

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 reservoir 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 reservoir 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.

A_{PJ} = 2,477,000 m²

A_{BL} = 0 m²

Cap_{PJ} = 69,580,000 W

Cap_{BL} = 0 W

Therefore, the Project Emission of the project activity is:

69,580,000 W / 2,477,000 m² = 28.09 W/m²

The project activity has a power density of 28.09 W/m², which is larger than 4 W/m² and less than or equal to 10 W/m². As per the applied methodology ACM0002 version 21 /B02/, the project emissions are Zero.

Leakage:

The only emission source in the plant is the diesel generator which is used as auxiliary power source when there is no electricity generation in the plant or supply by the grid. In urgent cases, a diesel-powered generator will be operated for the daily consumption of personnel and the building, which is negligible. Project emissions are taken as zero due to use of fossil fuel for backup generator.

As per ACM0002, in line with para 33 of ACM0002 version 21.0.0 /B03/ “For all renewable energy power generation project activities, emissions due to the use of fossil fuels for the backup generator can be neglected.” Hence, project emissions generated due to use Diesel for Diesel generator operations, are also considered zero throughout the crediting period of the project activity.

The same is also clarified in registered PD and related validation report /B02/.

According to the methodology, no leakage needs to be considered for the project activity i.e., $LE_y = 0$.

Emission reductions:

The emission reductions ER_y during the crediting period is:

$$ER_y = BE_y - PE_y = 103,126 \text{ tCO}_2\text{e} - 0 \text{ tCO}_2\text{e} = 103,126 \text{ tCO}_2\text{e}$$

Therefore, ex-ante emission reduction from the project activity is 10,619 tCO₂e per year.

Through the assessment process CCIPL has confirmed that:

- All the assumptions and data used by the project participants are listed including their references and sources;
- All documentation used by the project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the Joint PD & MR;
- All values used in the Joint PD & MR are considered reasonable in the context of the VCS project activity;
- The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;
- All estimates of the baseline emissions can be replicated using the data and parameter values provided in the Joint PD & MR.

3.4.7 Methodology Deviations

There are no deviations about the methodology of the project activity.

3.4.8 Monitoring Plan

The approved baseline and monitoring methodology “ACM0002”, “Grid-connected electricity generation from renewable sources”, version 21 has been applied.

The monitoring plan is in accordance with the monitoring methodology; the monitoring plan will give opportunity for real measurement of achieved emission reductions.

CCIPL has checked all the parameters presented in the monitoring plan against the requirements of the methodology; no deviations relevant to the project activity have been found in the plan.

CCIPL confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by/resulting from the proposed VCS project activity can be reported ex post and verified.

Means of validation	The Project uses the approved monitoring methodology ACM0002 Version 21 /B02/ for Grid-connected electricity generation from renewable sources. The methodology requires monitoring of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity. HPP are located in Göksu River/Feke District/Adana Province, Turkey, and are connected to the substations under TEIAS grid which is synchronised with host country grid. The electricity supplied to the grid would be taken from the EPIAS web-based portal records . EPIAS data is developed remotely by TEIAS and shows the monthly electricity generation of the company. TEIAS has started to extract generation data from the facilities remotely through the EPIAS (previously PMUM system) which forms the basis for the billing. During the monitoring period EPIAS readings will be used as the source of calculation of electricity generation and emission reductions. The name change of PMUM to EPIAS had occurred on 01/09/2015 after EPIAŞ received Market Operating License. Market operations are then transferred from PMUM to EPIAŞ. Hence PMUM is changed to EPIAS in this crediting period. EPIAS records and meter reading records provides the exact electricity generation of the facility including the imports from the grid. According to meter reading protocols, the internal consumption of the facility was subtracted from the gross generation. EPIAS data are used for the quantity of net electricity delivered to the grid, and it has been cross checked with the Monthly Facility Reports signed by PP. EPIAS is the entity responsible for monitoring of monthly electricity exported/imported and the accordingly TEIAS meter reading is being used for crosscheck. EPIAS readings forms the primary source of data for the monthly electricity being feed into the grid and TEIAS Invoices are being used for crosschecking along with TEIAS meter readings . Since EPIAS is a government body, the data received from it is most authentic. PP has considered EPIAS records for calculation of emission reductions achieved which is the most appropriate and conservative approach being followed. Details of the monitoring plan are described in section 5.2 of the Joint VCS PD & MR /01/. Monitored parameter is $EGPJ,y = EG_{facility,y}$ i.e. Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh) as per equation 11, para 47 of ACM0002 Ver 21 /B02/. All necessary parameters have been contained and clearly described. The monitoring plan contained in the updated PD is materially the same as the approved revised Joint PD-MR. The baseline emission factor of 0.4616 tCO₂/MWh is determined ex-ante based on the most recent information available at the time of requesting for the renewal of the crediting period.
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	There are one main meter and one back up meter for this project. Sufficient procedures have been identified in the updated Joint PD-MR and the implementation of those procedures will enable that the emission reductions of the project can be reported and verified ex-post. The management and operation team for the monitoring activity of the project has been described in the updated Joint PD-MR /01/.
Conclusion	The monitoring plan contained in the updated Joint PD-MR is in accordance with the monitoring methodology and the approved monitoring plan. The monitoring plan will give opportunity for real measurements of achieved emission reductions.

The other ex-post parameters that are mentioned in the methodology are included in the Joint VCS PD-MR and are provided in compliance with the methodology, and they will be monitored during the crediting period:

	Parameter	Description/Assessment
1	CAP _{PJ} (W)	Installed capacity of the hydro power plant after the implementation of the project activity. The determination of the installed capacity is yearly and based on nameplates supplied by the manufacturer.
2	A _{PJ} (m ²)	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. Measured yearly from topographical maps.
3	EG _{facility,y}	Quantity of electricity generated and supplied to grid by the project power plant /electricity consuming by project power plant from grid in year y. The determination of the parameter is monthly and based on EPIAS records.

Parameters Determined Ex-ante:

According to the “Tool to calculate the emission factor for an electricity system” (version 07.0), the default weights: $\omega_{BM}=0.75$ for build Margin and $\omega_{CM}=0.25$ for operating Margin in the second crediting period of wind power generation projects are adopted.

The combined margin emissions factor is calculated as follows:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times \omega_{OM} + EF_{grid,BM,y} \times \omega_{BM} \text{ Where:}$$

$EF_{grid,CM,y}$ = Combined margin CO2 emission factor of national grid in year y (tCO₂/MWh)

$EF_{grid,OM,y}$ = Operating margin CO2 emission factor of national grid in year y (tCO₂/MWh)

ω_{OM} = Weighting of operating margin emissions factor (%)

$EF_{grid,BM,y}$ = Build margin CO2 emission factor of national grid in year y (tCO₂/MWh)

wBM = Weighting of build margin emissions factor (%)

$$EF_{grid,CM,y} = 0.7424 * 0.25 + 0.3680 * 0.75 = 0.4616 \text{ (tCO}_2\text{/MWh)}$$

The calculation of the $EF_{grid,CM,y}$ has been checked by the assessment team and was found consistent with the latest emission factor calculation tool /18/.

The ex-ante parameters that are mentioned in the methodology are included in the Joint VCS PD-MR section 5.1 /01/ and are provided in compliance with the methodology. The same is checked by Validation team during document review.

Parameter	Source of Data	Description/Assessment
$EF_{grid,y}$	Turkey Ministry of Energy and Natural Resources dated 20/09/2022 https://enerjiapi.etkb.gov.tr/Media/Dizin/ETKB/Duyurular/0c6b62ea-bf2f-4fea-b9b3-28bc6f48ddf2_Bilgi_Formu_-_Web_Sitesi.pdf	CO ₂ emission factor of the grid electricity in year y

Management System and Quality Assurance

The electricity generated from the project activity will be exported to the Turkish National Grid. Data will be measured directly from the electric meter and remotely recorded on TEIAS (grid owner) computerized systems. PP has made an agreement with TEIAS (A energy distribution Private company working under authorization of TEIAS). TEIAS calibrates main and back up meter once in 10 years as per metering regulatory requirements of host country /12/. The same is confirmed during on site visit interview with PP. The calibration records are maintained by PP throughout crediting period plus 2 years as per monitoring methodology requirements. Data will be monitored continuously by redundant metering devices. The recording meter will be in compliance with the communiqué for Metering Devices to be used in the Electricity Market (<http://www.epdk.gov.tr/web/elektrik-piyasasi-dairesi/44>) 12/.

The testing frequency of both meters after 2015 is once in a year. The same is confirmed from TEIAS system usage agreement and onsite visit interview with PP.

The information of the energy meters is verified from the Chief Manager of HPP. According to him, The energy meters installed on-site used for measuring the electricity exported to grid and imported from grid are provided in Power Plant substation. The technical staff of the Feke-II Hydro Power Plant shared the Energy Meters Information with CCIPL. Also, PP had shared images of the meters as well /04/. The main energy meters and the back-up energy meters are installed and working properly according to the staff of the Feke-II HPP. As well, according to the Chief manager of HPP, It was confirmed that the meters belong to TEIAS. It was asserted that the calibration authority and responsibility for the meters belongs to TEIAS. It was too indicated that meter maintenance and other responsibilities also belongs to TEIAS. Therefore, it was asserted that the "first index determination protocol" regarding the meters was made between TEIAS and PP. On this ground information PP have shared calibration documents /19/.

In order to measure the electricity exported to the grid, the information of the installed meters was obtained from the power plant authority. During the current crediting period, the main and back up energy meter was replaced with new one on 23/03/2020. The calibration of both meters

were carried out at determined frequency according to the legislation of TEİAŞ and Industry Ministry of Turkey /12/. Industry of Ministry of Turkey Calibration period is 10 years after the installation of the energy meters date /12/.

This meter will provide official data which will be remotely read and recorded by TEİAŞ systems for invoicing. TEİAŞ also conducts the calibration and maintenance of these meters and thus, ensures the accuracy and quality of the measurements. The quality standards that the meters need to comply is “The ICE/TSE 62053-22: Electricity metering equipment (a.c) – Particular requirements - Part 22: Static meters for active energy (Classes 0.2 S and 0.5 S)”/12/, /18/. The calibration of the meters is done, and the meters are measuring continuously. If there is a difference of 0.5 % in the readings of the main and the auxiliary/spare/backup meters, the calibration will repeat by TEİAŞ. According to the “Communiqué for Metering Devices to be used in the Electricity Market”, Article 9, paragraph b, the periodic calibration by TEİAŞ shall be made every 10 years /12/.

These aspects is verified during monitoring of the project.

3.5 Non-Permanence Risk Analysis

The project activity is non-AFOLU project as well as operational during the 1st crediting period. Hence there is no further requirement for the non-performance analysis rating during the 2nd Crediting period RCP validation of the project activity.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity is in the operation stage as evidenced by the onsite visit of the site. All the physical components and project boundary are in conformity with the description in registered VCS PD, and validation report /B04/. The capacity of project equipment’s has been confirmed during the onsite inspection (through review of installed capacity by SCADA System /04/), also through the technical specifications, electricity generation license /07/, commissioning certificate /08/ and found in-line with the registered VCS PD /B04/.

On the basis of the onsite inspection and the review of technical specifications, Single line diagram and meter location /04/, Electricity production license /07/, Provisional acceptance letter, calibration certificates for meters /19/, project Commissioning certificate /08/, invoices /23/, organization structure and Electricity generation data /02/, the verification team confirms that the project is implemented and operated as described in the registered VCS PD /B04/. The project activity was commissioned on 24/12/2010 as verified from the commissioning certificate of the project activity /08/. As confirmed during the onsite audit, the project activity was in continuous operation since commissioning. There is no such incident reported during the

current monitoring period, which may impact the operation & capacity design of the project activity. Calibration records of all 4 monitoring equipment i.e., bi-directional meters (main and backup) were checked, and it was confirmed that the meters are factory calibrated at installation, and also will be tested periodically by the grid operator /19/. The same is also confirmed by desk review of calibration reports carried out by TEIAS dated 23/03/2020 /19/.

Replacement of the meters was undertaken during the third monitoring period of 1st CP on 23/03/2020. No events have occurred that may impact the GHG emission reductions or removals and monitoring in this monitoring Period. Same has been checked from the operational data during onsite auditing and from the TEIAS and EPIAS websites (using the project owner's access).

The project is generated net electricity production of 385,602.425 MWh (during the monitoring period of 01-October-2018 to 31-December-2020 of 1st CP) 105,723.839 MWh (during the monitoring period of 01-January-2021 to 31-December-2021 of 2nd CP) which corresponds to an emission reduction of 210,923 and 48,802 tons CO₂e respectively.

Ownership and other programs:

PP has declared that the project is not registered in other GHG programs, PP confirmed that the project will only be going forward with VCS registry, as declared in VCS-PD. Thus, emission reductions generated by the project will be solely claimed by PP and PP has the right of use, which is acceptable. Net GHG emission reductions or removals generated by this project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions as the host country i.e., Turkey is not an Annex-B country under Kyoto Protocol, neither has its set national emission reduction targets nor any related obligations.

PP will not claim the environmental/carbon credits under any other GHG emission reduction scheme for the crediting period under VCS and PP has declared the same during the validation

Hence, there is no possibility of double counting.

Project implemented activities that result in the SD contributions as described in the monitoring report:

As confirmed during the onsite audit, the project displaces electricity produced in fossil fuel-based power plants, by using clean renewable source to generate electricity and thereby contributes to sustainable development through reduction in greenhouse gas (GHG) emissions. It has also been confirmed that the project contributes to the sustainable development goals (SDG 7, SDG 8, SDG 13,). Under SDG 7, the project supplies clean, affordable, and renewable energy (The project has

resulted in generation of 385,602.425 MWh of renewable energy during the current monitoring period from 01-October-2018 to 31-December-2020 and The project has resulted in generation of 105,723.839 MWh of renewable energy during the current monitoring period from 01-January-2021 to 31-December-2021. Also 1,543,059.518 MWh over lifetime of PA) without reliance on fossil fuels for generation of electricity to meet the growing demands in the region. The electricity generated during the operation of project activity results in emission reductions i.e., sustainable production and consumption of this electricity. For SDG 8, the implementation of project is providing job opportunities to 24 people during this monitoring period and 24 people as their employees during life time, with a decent and secure work environment by reducing emissions otherwise generated by the operation of fossil fuel-based power plants. The emission reductions generated due to the project activity are accounted under SDG 13 (emission reduction of 210,923 tCO₂e achieved under the monitoring period 01-October-2018 to 31-December-2020 and emission reduction of 210,923 tCO₂e achieved under the monitoring period 01-January-2021 to 31-December-2021. Also 834,961 tCO₂e over lifetime of PA).

The project activity strengthens the implementation and revitalizes the global partnership through sustainable development by the means of significant environmental and socio-economic benefits. The same has been verified during onsite visit interviews with PP and local stakeholder.

Management and operational system:

The verification team was able to verify that authorities and responsibilities for monitoring and reporting of all data related to the emission reductions were clearly defined for the monitoring periods.

The allocation of the responsibilities is documented in a written form and is followed as described in the registered VCS PD /B04/. Routines for the archiving of data are defined and documented. The electricity generation records were verified during onsite audit and from the EPIAS website (using the project owner's access). It was observed that the data is consistent with the provided in the final MR and ER sheets. The status of the project activity was verified through the observation during the onsite audit and through the evidence submitted by the PP, the EPIAS website (using the project owner's access) /24/ checked by the verification team indicated the real-time generation data, which further confirmed that the project is fully operational.

The monitoring plan described in section 5.4 of the Joint PD- MR confirmed to be correct. All the parameters of the monitoring plan are monitored using appropriate metering system, the details

of which, as mentioned in the section 5.4 of the Joint PD-MR, have been confirmed through the snapshots /04/ and the technical document /04/ submitted by the PP.

The verification team has onsite visit interviewed the plant personnel involved in the monitoring of the parameters that are used to determine the emission reductions of the project. It is confirmed based on the interviews and review of roles and responsibilities as per organizational structure, that the plant's team is competent enough to monitor the parameters as described in the monitoring plan.

As discussed above and review of Joint PD- MR /01/, the verification team concludes that management and operational system of the project is implemented and operated well. The organizational structure, responsibilities and competencies of the personnel that carried out the monitoring activities are found to be satisfactory to the validation and verification team including the methods used for generating/measuring, recording, storing, aggregating, collating, and reporting the data on monitored parameters. The procedures used for handling including frequency of measurement and QA/QC procedures were also verified by verification team and found that the required confidence level or precision has been met. Thus, it ensures the quality of data which is required in calculating the emission reductions.

Implementation status of the monitoring plan:

Verification team confirms through onsite inspection and from the document review of technical specifications /03/ , Single line diagram /06/ and meter location /03/, Electricity production license /07/, Provisional acceptance letter /08/, calibration certificates /19/ for meters, project documentation, invoices /23/, organization structure and Electricity generation data /10/ that the actual monitoring system complies with the monitoring plan mentioned in the registered VCS PD.

During the verification, all relevant monitoring parameters of the registered monitoring plan have been verified with regard to the appropriateness of the verification method; the correctness of the values applied for ER calculation, the accuracy and applied QA/QC measures. All monitoring parameters have been measured / determined without material misstatements and are in line with all applicable standards and relevant requirements. It is confirmed that the monitoring mechanism is effective and reliable.

Each month PP records data from main meter and calculate the monthly values of export and import. These values are feed into TEIAS Protocol Format in each month and TEIAS published the

same on EPIAS website /24/. These published data is termed “EPIAS web based records” /24/. PP cross check these values with their records generated “Monthly Facility Reports” 25/ (signed by the project owner) through meters connected with their system.

There are 4 energy meters which for HPP in the Sub- Station Center. Two of these are main energy meters and other two are back-up (auxiliary/Control/Spare metering devices) energy meter. The Energy meters belongs to TEİAŞ. The energy meters of the power plants are located within the HPP Sub Station Center. Meter reading is done by TEİAŞ Remote reading system and giving information to the power plant management by the system of TEİAŞ. Back-up meters for the control of energy production values are also located in the Substation. The TEİAŞ provides remote access to the meters and monitors produced energy amounts every 15 minutes from the Main meters. The amount of energy produced is controlled by comparing the values in the Back-up energy meters .

The information of the energy meters is verified from the Chief Project Manager of HPP. The main energy meter and the back-up energy meter are installed and working according properly as per technical staff of the Feke-II HPP. The meters feel right to TEİAŞ. It was confirmed that the calibration authority and responsibility for the meters goes to TEİAŞ. It was also asserted that meter maintenance and other responsibilities also belong to TEİAŞ. Therefore, it was acknowledged that the "first index determination protocol" /19/ regarding the meters was made between TEİAŞ and PP.

In order to measure the electricity exported to the grid, the information of the installed meters was obtained from the power plant authority. Prior to the monitoring period the meters were installed, in 20/05/2010. The Initial Index Protocol includes installation information and Brand-Model information of the meters is verified during interview and document review related to meters . As per TEİAŞ mandates the energy meters to be replaced every 10 years, and accordingly new pre-calibrated meters have been introduced from 23/04/2020. The calibration document of the energy meters was verified during this monitoring period /19/. Thereafter, it was stated that calibration was carried out at determined periods according to the calibration frequency set by regulations. Calibration frequency as per PD is 10 years after the installation which will remain same.

Table 1. Technical Information of First Meters

Brand	Type	Serial Number	Accuracy Class	Cal Date	Validity	Calibration Frequency
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ELSTER	A1500	00416326 (main- unit 1)	0.5S	20-May-2010	19-May-2020	10 years
ELSTER	A1500	00416327 (spare- unit 1)	0.5S	20-May-2010	19-May-2020	10 years
ELSTER	A1500	00416328 (main- unit 2)	0.5S	20-May-2010	19-May-2020	10 years
ELSTER	A1500	00416329 (spare- unit 2)	0.5S	20-May-2010	19-May-2020	10 years

Change or calibration of the metering devices has been necessary during the monitoring period between 01-October-2018 to 31-December-2020. Thus, test of all the meters were done in 14-November-2017 and 17-November-2018 and later, all the meters were changed in 23-August-2020. Technical information of new meters can be found below:

Table 2. Technical Information of Meters After Change

Brand	Type	Serial Number	Accuracy Cl a s s	Calibration Date	Validity	Calibration Frequ ency
EMH	LZQJ-XC	9420176 (main- unit 1)	0.5S	23-March- 202 0	22-March-2030	10 years
EMH	LZQJ-XC	9420177 (spare Unit 1)	0.5S	23-March- 202 0	22-March-2030	10 years
EMH	LZQJ-XC	9420178 (main-unit 2)	0.5S	23-March- 202 0	22-March-2030	10 years
EMH	LZQJ-XC	9420179 (spare Unit 2)	0.5S	23-March- 202 0	22-March-2030	10 years

Testing of all meters were provided in the following dates: 25-November-2013, 29-September-2015, 27-September-2016, 14-November-2017, 17-November-2018. After the change of all meters in 23-April-2020, no testing has been conducted.

No change or calibration of the metering devices has been necessary during the monitoring period of 01-January-2021 to 31-December-2021.

CCIPL checked EPIAS recorded data /24/ in ER sheet /02/ with Metering records data i.e., monthly facility reports /25/ of back up and main meter also.

During interview with PP, it was confirmed that, the daily electricity generation logbook and common meter reading records are being followed between Energy Markets Management Inc. (EPIAŞ) and Feke-II HPP over the system. It was also evidenced as "hourly meter reading report form - OSF". In addition to it, within the framework of the agreement between Feke-II HPP and TEİAŞ /05/, it was indicated that instantaneous production values were monitored by using the remote reading system OSOS belonging to TEİAŞ. Also, the technical staff of the HPP keep the note via Excel format Daily Electricity generation logbook. The operator fills up the data hourly basis through SCADA system and adding in Excel - Daily Electricity generation logbook. It was confirmed that, the electricity generation records by the SCADA systems is being monitored by PP, the same is used for comparison purpose, before feeding data in EPIAŞ. PP monitors data from TEİAŞ OSOS Dashboard and EPIAŞ Dashboard regularly for record and crosscheck purpose before generating invoice for electricity sale to grid.

The Power Plant is operated as per the production plan given to Power Plant Control Operator one day before. He records the amount of energy produced every hour in the "Daily Production Sheet" by providing remote access to the Control meter by the Central Control Operator. At the same time, these values are processed into the relevant excel table in the computer environment. At the end of the month, it is compared with the production values in the main meter of TEİAŞ and back up meter. If there is an error or mistake, it will be reported to TEİAŞ. No such error recorded during the current monitoring periods.

The main meter of the power plant is read by TEİAŞ, and their monthly production values are officially reported to EPIAŞ. With this notification, monthly production values are reconciled between EPIAŞ and the Power Plant. The record images share by Manager of HPP of EPIAŞ /24/, on the basis of these values ER is calculated /02/.

The above-mentioned information flow for generating, aggregating, and reporting the electricity generation values were confirmed by the Chief Project Manager of HPP.

Electricity generation values in the SCADA system are controlled and recorded by the power plant authorities. In addition, the data that TEİAŞ receives via OSOS, which is the remote reading system, is reported to the EPIAŞ system and uploaded to the "Conciliation Page". In this way,

official records are finalized /24/. Also, this information is checked by SCADA Dashboards for information purpose.

The Technical Chief of the Feke-II HPP provided the information of the operational and data collection procedures. According to him, the accuracy of the set values is checked every hour by pressing the button on the main energy meter, which is located in the substation. These values are recorded in the "daily production sheet". At the end of the month, these data are verified by comparing the main meter values read by TEİAŞ /24/.

According to PP, the quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring period . The hourly values previously received by the Control Operator of the Power Plant are compared with the counter values sent by TEİAŞ. The difference between the two values is checked for measurement accuracy. If there is any data error, TEİAŞ officers and HPP Officers meet together on the site, try to figure out the predicament. When they find the troubles, TEİAŞ officers and HPP Officers correct the errors. After the correction process, they send this information to the EPIAŞ to correct the data of the previous production values. According to the Power Plant Chief Manager, there has been no error process so far. If an error occurs, TEİAŞ notifies EPIAŞ of the erroneous data received from the Power Plant Directorate within a reasonable time and ensures that the values are corrected and verified.

Therefore, from the document review and onsite inspection, it is confirmed that all the parameters were monitored in accordance with the registered monitoring plan during the monitoring period. Following are the details of monitoring in accordance with the monitoring plan of the registered VCS PD /B04/:

Data - Parameter	$EG_{\text{facility}, y}$
Data unit	MWh
Description	Electricity
Source of data	EPIAŞ records generated by electricity meters. EPIAŞ records /24/ are used for main calculation where "Monthly Facility Reports" /25/ (signed by the project owner) are used for cross-check

Description of measurement methods and procedures to be applied	Data is measured directly from meters and records on TEIAS readings. The Primary source of data is the TEIAS meter readings Data is measured directly and continuously by meters and records on EPIAS web portal /24/. The same has been checked for each month by the Verification team during onsite inspection and complete checking of data has also been carried out of the same provided by the PP /24/. Verification team confirms that the data has been measured directly from meters. The meter readings accessible via an Automatic Meter Reading Software, were cross checked remotely by the verification team during the onsite visit inspection. Monthly screen outputs obtained from automatically recorded data at EPIAS /24/ were checked by the verification team, for the entire monitoring period. The net electricity exported to grid is calculated as difference between export and import values provided EPIAS screenshot /24/. Which conforms the methodology requirement As confirmed from the meter snapshots and its technical specifications, back up meter has been installed in case there is main meter failure. However, only the main meter readings are used for ER calculations /02/.
Frequency of monitoring-recording	Annually Recorded continuously, read remotely by TEIAS, and accessible monthly via EPIAS /24/ and cross checked with the monthly facility reports /25/. Reported annually on the VCS Monitoring Report as verified by the verification team through onsite assessment.
Value monitored	During the monitoring period between 01-October-2018 and 31-December-2020, for 27 months period, total generation has been 385,602.425 MWh. Average monthly generation corresponds to 14,281.5 MWh and 12 months generation of the plant corresponds to 171.387 MWh. During the monitoring period between 01-January-2021 and 31-December-2021, for 12 months period, total generation has been 105,723.839 MWh. Average monthly generation corresponds to 8,810.319 MWh and 12 months generation of the plant corresponds to 105,723.839 MWh.
Monitoring equipment	During the onsite inspection and through review of generation data from TEİAŞ – EPIAS web site /24/, it has been confirmed that the data has been monitored continuously by bi-directional metering devices, which provides the data for the monthly invoicing to TEİAŞ. All meters were found to

	follow the communiqué for Metering Devices /12/ to be used in the Electricity Market. The calibration details of energy meters provided in Table 1 and 2 above verified during previous verification: The meters are factory calibrated and tested at installation and tested periodically by the grid operator . The calibrations are valid for 10 years as per National standard requirements /12/ and the same has been confirmed through the registered VCS-PD /B04/ and the previous verification report . Hence both the meters follow the host country calibration regulations and had valid calibrations during the entire monitoring period.
QA-QC procedure to be applied	There are two bi-directional meters, 2 main and 2 check meter at each units, and the monthly reported meter reading by the main meter, is cross-checked against the back up meter by a technician as confirmed during onsite inspection and through snapshot. Imported electricity was also monitored by the operator using software for internal monitoring, which was again confirmed during the onsite inspection.
Purpose of the data	Data to be used for the calculation of Baseline Emissions
Calculation method	Direct Continuous Measurement
Comments	As confirmed during the onsite inspection, the collected data will be kept by PP during the crediting period and until two years after the last issuance of VERs for the Hydro Power Plant project activity for that crediting period.

Data - Parameter	Cap _{PJ}
Data unit	W
Description	Installed capacity of the hydro power plant after the implementation of the project activity
Source of data	Project site computers with SCADA system and the turbine name plates verified by verification team along with EPDK license /07/
Description of measurement methods and procedures to be applied	SCADA system and turbine name plates of the project activity checked during onsite visit
Frequency of monitoring-recording	Once for each monitoring period
Value monitored	69.58 MWe
Monitoring equipment	SCADA System of the Project activity and name plate /04/
QA-QC procedure to be applied	Turbine labels checked with SCADA System reading /04/ by verification team during onsite visit
Purpose of the data	To monitor capacity of the project
Calculation method	N/A
Comments	–

Data - Parameter	A _{PJ}
Data unit	m ²
Description	Area of the reservoir measured in the surface of the water, after the implementation of the Project Activity, when the reservoir is at its maximum fullness.
Source of data	Surface area determined using the FEKE II Hepp Reservoir Map /B04/, the same is verified by verification team

Description of measurement methods and procedures to be applied	The reservoir area corresponding to maximum operational level has been determined via the topographic satellite images showing the reservoir area
Frequency of monitoring-recording	Once during each monitoring period
Value monitored	2,477,000 m ²
Monitoring equipment	–
QA-QC procedure to be applied	Checked and compared to satellite imagery available by Google Earth /26/ by verification team
Purpose of the data	Data to be used for the calculation of Baseline Emissions.
Calculation method	N/A
Comments	–

Remaining Issues from Previous Verification:

This is the third periodic verification of the registered project activity and from the review of the 1st verification report , verification team confirms that No FAR were raised during the last verification of the project activity. The second verification report is submitted by PP to VCS for approval purpose.

4.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

Accuracy of GHG Emission Reduction and Removal Calculations

The assessment team has reviewed the emission reduction (ER) spread sheet /02/ and checked all the formulae and verified them to be correct and in line with the monitoring plan and the applied monitoring methodology /B02/.

All relevant monitoring parameters of the monitoring plan have been verified with regard to the appropriateness of the verification method; the correctness of the values applied for ER calculation, the accuracy and applied QA/QC measures. All monitoring parameters have been measured / determined without material misstatements and are in line with all applicable standards and relevant requirements. It is confirmed that the monitoring mechanism is effective and reliable.

Therefore, from the document review and onsite inspection, it is confirmed that all the parameters were monitored in accordance with the monitoring plan during the monitoring period.

Baseline emissions:

The baseline emissions (BE_y) are calculated based on the following formula: $BE_y = (EG_y - EC_y) \times EF_{grid,CM,y}$

Where,

BE_y = Baseline Emissions (tCO₂/year)

EG_y = Electricity exported to grid in year y (MWh)

EC_y = Electricity Imported from grid in year y (MWh)

EF_{grid, CM, y} = Baseline Emission Factor (Combined margin CO₂ emission factor for grid)

The calculation of yearly baseline emissions is provided below:

$BE_y = 385,602.425 \times 0.547 = 210,923 \text{ tCO}_2\text{e}$ (01-October-2018 and 31-December-2020)

$BE_y = 105,723.829 \times 0.4616 = 48,802 \text{ tCO}_2\text{e}$ (01-January-2021 to 31-December-2021)

It is noted that the formula and calculation used for baseline emission calculation in the Joint PD & MR and ER sheet /02/ is in compliance with the monitoring plan. Hence, acceptable to the assessment team.

Project Emissions:

As per the applied methodology /B02/ the power density of PA is greater than 4 W/m² and less than is greater than 10 W/m². The project activity has a power density of 28.09 W/m². Hence, PE_y= 0 is acceptable to the validation verification team. Refer section 3.4.6 above for power density calculations.

Leakage:

As per the methodology ACM0002- Version 21, no leakage is considered in the project activity and the same is followed in this monitoring period also.

According to the applied methodology, the conservativeness of the achieved emission reduction was checked and the detailed emission reduction calculation has been transparently provided in the ER sheet /02/. All the formulae and the calculation procedure were checked by the assessment team. In the opinion of assessment team, the assumptions, emission factors and default values that were applied in the calculations have been justified. Also, it is confirmed that there were no manual transposition errors between the data sets in the ER Sheet/02/ during the current monitoring period. It is confirmed that the data has been measured directly from meters.

Opinion: The assessment team confirms;

- The monitoring plan has been implemented as per the VCS PD;
- The monitoring complies with the requirement of the applied methodology;
- The information inflow (from data generation, aggregation, to recording, calculation and reporting) is included above under each parameter and confirms to the requirement of the PD;

The values included in the monitoring part of the joint VCS PD & MR/01/ and corresponding emission reduction sheet /02/ are verified and included under each monitoring parameter, wherever appropriate.

Quality of Evidence Determine GHG Emission Reductions and Removals

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

All records needed for monitoring are archived in line with the requirements of the monitoring plan. No significant lack of evidence and missing data were detected during onsite visit audit discussion. Hence, the assessment team confirms that the monitoring system ensures required quality of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures. The monitoring parameters have been measured / determined without material misstatements and is in line with all applicable standards and relevant requirements. The information inflow (from data generation, aggregation, to recording, calculation and reporting) is included in section 6.1 under each parameter and confirms to the requirement of the monitoring plan. The export and import data is measured by the electricity meters, recorded continuously and the invoices are generated monthly. The data is then reported annually on the VCS Joint PD & MR as verified by the assessment team through onsite assessment.

The % fall in emission reduction in current monitoring period as compared to estimated emission reduction is -31,41%. Further the reduction in achieved emission reductions with respect to estimated emission reductions for the current monitoring period are attributed to reduced water flow and scheduled maintenance/ breakdowns and thus were not in control of project owner. The same is accepted by validation and verification team.

It was also verified through onsite audit inspection that the plant's team involved in the monitoring of project activity is well experienced. Hence, the assessment team concludes that competent staff is employed by the project proponent to carry out the relevant tasks with sufficient accuracy. Furthermore, it was confirmed during onsite audit discussion that internal training program for the monitoring staff is conducted on regular basis.

5 VALIDATION AND VERIFICATION CONCLUSION

CC IPL has been commissioned by 'Akenerji Elektrik Üretim A.Ş.' to perform Validation for renewal of crediting period (RCP) and verification and certification for the greenhouse gas (GHG) emission reductions reported from 'FEKE II 69.58 MW HYDROELECTRIC POWER PLANT' for the monitoring period 01-October-2018 and 31-December-2020 (Inclusive of both days), under the first crediting period (01-January-2011 to 31-December-2020) and 01-January-2021 and 31-December-2021 (Inclusive of both days), second crediting period 01-January-2021 to 31-December-2030), with regard to the relevant requirements of VCS Standard Version 4.3.

The project correctly applies the methodology ACM0002 - Version 21. It is demonstrated that the project is not a likely baseline scenario. The emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project for the 2nd crediting period are estimated to be 103,126 tCO₂e (annual average) over 10-year crediting period starting from 01/01/2021, which will be renewed once after end of 2nd CP. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achievable given the underlying assumptions do not change.

The project will hence be recommended by CC IPL for request for renewal of the crediting period of the project activity with the VCS.

The management of the 'EKI ENERGY SERVICES LIMITED.' (Other Entity) is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project final Joint PD & MR Version 5 and dated 05/07/2023. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the 'EKI ENERGY SERVICES LIMITED.'. The development and maintenance of records and reporting procedures are in accordance with the Joint PD & MR Version 5 and dated 05/07/2023.

It is our responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project during the 3rd monitoring period of 1st CP i.e., from 01-October-2018 to 31-December-2020, it has generated 385,602.425 MWh net electricity, thereby resulting in emission reduction of 210,923 tCO₂e, also during the 1st monitoring period of 2nd CP i.e., from 01-January-2021 and 31-December-2021, it has generated 105,723.839 MWh net electricity, thereby resulting in emission reduction of 48,802 tCO₂e based on the reported emission reductions in the final Joint PD & MR Version 5 dated 05/07/2023 for the same period.

As a result of the RCP validation and verification, the assessment team confirms that:

- All operations of the project are implemented and installed as planned and described in the project description.
- The monitoring system is in place and functional.
- The installed equipment essential for generating emission reductions runs reliably.
- The GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

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

During the Monitoring Period of 01-October-2018 and 31-December-2020:

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)
01-October-2018 to 31-December-2018	15,816	0	0	15,816
01-January-2019 to 31-December-2019	110,396	0	0	110,396
01-January-2020 to 31-December-2020	84,711	0	0	84,711

Total	210,923	0	0	210,923
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During the Monitoring Period of 01-January-2021 to 31-December-2021:

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)
01-January-2021 to 31-December-2021	48,802	0	0	48,802
Total	48,802	0	0	48,802

The verification team is of the opinion that the project has been implemented in accordance with the registered project description and the MP which complies with the approved monitoring methodology, the monitoring complies with the MP and the monitored data and calculation of ERs are assessed and confirmed as correct.

APPENDIX 1: REFERENCES

SN	Document
/01/	- VCS Joint PD-MR Ver 01 dated 06/11/2022 - VCS Joint PD-MR Ver 05 dated 05/07/2023
/02/	Emission reduction calculation spread sheet
/03/	Power purchase Agreement of Project
/04/	Technical specifications/photographs of turbines, generators, electricity meters, transformers etc. as provided in PD
/05/	- Connection Agreement of Project - System usage agreement of Project - Water Usage agreement of project
/06/	Single line diagram for the flow of electricity from generation point to feed in grid including meter locations
/07/	Electricity production/generation license
/08/	Commissioning document of project (Provisional Acceptance Letter)
/09/	Proof of Number of recruited staff and contract employees in project activity
/10/	Turkey's National Electricity Network Emission Factor (Grid EF calculations) 2022- Republic of Turkey Ministry of Energy and Natural Resources released them on 20.09.2022
/11/	- Proof of right - Program Ownership
/12/	Communiqué for Metering Devices
/13/	Location Proof of coordinates in KML file
/14/	Training records of staff
/15/	EPDK regulations defining the accuracy class of the meters as 0.2 or 0.5
/16/	Sample of Social Security Records of staff and contract salaries
/17/	Sample records of disposal of wastewater

/18/	Renewable Energy Law and Environmental Law for regulatory surplus of project
/19/	First index protocol and calibration records of all energy meters
/20/	Sample records of Hazardous-waste generated
/21/	Waste records of E-waste
/22/	Local stakeholder ongoing mechanism proof
/23/	Invoices raised by PP to TEIAS
/24/	Proof of monthly reported meter readings of EPIAS
/25/	Proof of monthly reported meter readings of TEIAS meter i.e. "Monthly Facility Reports" (signed by the project owner)
/26/	Proof of Area of the reservoir measured i.e., Surface area determined using the lake surface area map
/27/	Proof of installed capacity of the Project Activity i.e., showing in SCADA system
/28/	EIA letter
/29/	Joint Validation and Verification contract in between CCIPL and PP

Background documents

Ref	Document
/B01/	VCS Requirements a. VCS Standard (v4.3, dated 22/06/2022) b. VCS Program Guide (v4.2, dated 22/06/2022) c. VCS Validation and Verification Manual version (v3.2, dated 19/10/2016) d. Registration & Issuance Process (v4.2, dated 22/06/2022) e. VCS Program Definitions version (v4.1, dated 20/01/2022) f. VCS MR template version 4.1 g. CDM validation and verification standard for project activities Version 03
/B02/	Applied baseline and monitoring methodology: ACM0002 "Large-scale Consolidated Methodology; Grid-connected electricity generation from renewable sources." Version 21
/B03/	The Approved Methodology refers to the following tools:

	• “Tool for the demonstration and assessment of additionality”(Version 7) • “Tool to calculate the emission factor for an electricity system”. (Version 4) • "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" (Version 2) • “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” (Version 3.0.1)
/B04/	• Registered VCS PD version 3.1 dated 15/06/2010 • Registered Validation Report dated 26.07.2010 • 1st Monitoring Report version 5 dated 24/12/2012 • 1st Verification Report version 1.1 dated 24-December-2012
/B05/	Website and links: 1. IPCC (http://www.ipcc-nggip.iges.or.jp) 2. http://cdm.unfccc.int 3. https://verra.org/project/vcs-program/rules-and-requirements/

APPENDIX 2: ABBREVIATIONS

CDM	Clean Development Mechanism
BE	Baseline Emission
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CL	Clarification Request
CO₂	Carbon Dioxide
CO_{2e}	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DPR	Detailed project report
DVR	Draft Validation Report
EB	CDM Executive Board
EF	Emission Factor
ER	Emission Reduction
FAR	Forward Action Request
FVR	Final validation Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
IPCC	Intergovernmental Panel on Climate Change
MW	Mega Watt
MWh	Mega Watt Hour
NA	Not Applicable
OSV	On Site Visit
PD	Project Description

PP	Project Proponent
QC/QA	Quality control/Quality assurance
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
VB	Validation Verification Body
VVM	Validation and Verification Manual
VVS	Validation and Verification Standard

APPENDIX 3: CERTIFICATES OF COMPETENCE



Carbon Check (India) Private Limited

Certificate of Competency

Mr. Dinesh Mane

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC 14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

☒ Validator	☒ Verifier	☒ Team Leader	☒ Technical Expert
☐ Technical Reviewer	☐ Health Expert	☐ Gender Expert	☐ Plastic Waste Expert
☒ SDG+	☒ Social no-harm(S+)	☒ Environment no-harm(E+)	☐ CCB Expert
☐ Financial Expert	☒ Local Expert for India		

in the following Technical Areas:

☐ TA 1.1	☒ TA 1.2	☐ TA 2.1	☒ TA 3.1	☐ TA 4.1
☐ TA 4. n	☐ TA 5.1	☐ TA 5.2	☐ TA 7.1	☐ TA 8.1
☐ TA 9.1	☐ TA 9.2	☐ TA 10.1	☒ TA 13.1	☐ TA 13.2
☐ TA 14.1	☐ TA 15.1			

Issue Date
14th June 2023



Mr. Vikash Kumar Singh
Compliance Officer

Expiry Date
13th June 2024



Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023



Carbon Check (India) Private Limited

Certificate of Competency

Mr. Shivaji Chakraborty

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC 14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|--|--|---|--|
| ☐ Validator | ☐ Verifier | ☐ Team Leader | ☒ Technical Expert |
| ☒ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☒ SDG+ | ☒ Social no-harm(S+) | ☒ Environment no-harm(E+) | ☐ CCB Expert |
| ☒ Financial Expert | ☒ Local Expert for India | | |

in the following Technical Areas:

- | | | | | |
|--|--|----------------------------------|--|----------------------------------|
| ☒ TA 1.1 | ☒ TA 1.2 | ☐ TA 2.1 | ☒ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☐ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☐ TA 13.1 | ☐ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | | | |

Issue Date

1st January 2023

Expiry Date

31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

APPENDIX 4: FINDINGS LOG

Table 1. CARs from this verification

Finding	CAR 01		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding (VVB)	CAR being raised for the following corrections related to VCS-Joint-Validation-Verification-Template-v4.1 /B01-f/ and other VCS rules: 1) PP is requested to provide source of estimated electricity generation value 223.410 GWh provided in Joint PD-MR. 2) PP is requested to add location of project and a brief description of the scenario existing prior to the implementation of the project in section 1.1 of Joint PD-MR. 3) PP is requested to clarify the status of verification for the monitoring period starting from 01/10/2012 to 30/09/2020 in section 1.1 of Joint PD-MR. 4) Kindly provide dates of first and second CP for clarity purpose in section 1.1 of MR. 5) PP is requested to refer section 2.1 of VCS standard Ver 4.3, which requires VCS Joint PD-MR to justify project eligibility criteria in section 1.3 of Joint PD-MR for VCS new projects to qualify under VCS standard. As it is RCP project, hence such eligibility criteria are not applicable for this project. 6) PI provide proof of project start date in footnote of section 1.8 of Joint PD-MR. 7) PI provide dates of first CP in section 1.9 of Joint PD-MR, as it consist of joint verification of first CP monitoring period also. 8) PI provide applied methodology Ver 10 in section 3.1 of Joint PD-MR, as it is used for first CP monitoring Period which is used in this joint PD-MR. 9) PI remove Tool 01 from section 3.1 of Joint PD-MR, as it is not required for RCP and add tool of "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 in same section and justify its applicability conditions in section 3.2 of Joint PD-MR.		

	10) PI provide comparison of ER and Electricity generation with the annual values provided in Joint VCS PD- MR and registered VCS PD in section 6.5 of Joint VCS PD-MR.
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	1. The source of estimated generation is considered to be from generation license issued for the project activity, the same is provided in section 1.1 of Joint PD-MR. 2. The brief location of the project and scenario prior to project implementation has been included in section 1.1 of the Monitoring report. 3. The monitoring period from 01/10/2012 to 30/09/2018 has been submitted to Verra on 07/12/2022 and the same has been mentioned transparently in the MR Section 1.1. 4. The dates of the first and second crediting period has been updated in the MR. 5. The requested correction has been done in the monitoring report Section 1.3. 6. The proof of project start date being commissioning certificate is indicated in the MR. 7. Date of first CP is indicated in section 1.9 of MR as requested. 8. Methodology version 10 has been updated in the relevant section as requested by the VVB. 9. The applicability of the relevant tool has been updated in section 3.2 of the monitoring report. 10. ER and Electricity generation with the annual values provided in Joint VCS PD- MR and registered VCS PD was provided under section 6.5 of Joint PD-MR and also inserted to ER Sheet (Sheet Name: Actual ER (total)).
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.	The corrections made in revised Joint PD-MR is found to be acceptable to Validation verification team, hence this CAR is closed.
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 02		
Classification	☒ CAR	☐ CL	☐ FAR

Description of finding (VVB)	As per registered PD and First monitoring period MR name of PP is "Akkur Enerji Uretim Sanayi ve Ticaret A.S"., however in Joint PD-MR name of PP is mentioned as " Akenerji Elektrik Üretim A.Ş ." PP needs to clarify the same.
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	PP name changed following required steps in the past. Current PP name as "Akenerji Elektrik Üretim A.Ş ." can be confirmed from verra registry through following link: https://registry.verra.org/app/projectDetail/VCS/534 Also, a document provided showing the merging of Akkur Enerji with Akenerji.
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.	The corrections made in revised Joint PD-MR is found to be acceptable to Validation verification team, hence this CAR is closed.
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 03		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding (VVB)	Following queries are raised by validation verification team related to baseline scenario of PA: 1. PP is requested to use exact para numbers of applied methodology and tool to justify applicability of methodology in section 3.1 of Joint PD-MR. 2. PP is requested to justify the choice of the selected methodologies and, where applicable, the selected standardized baseline by showing that the Project Activity meets all applicability conditions of the methodology(ies) and, where applicable, the standardized baseline. Explain/describe any documentation that has been used in the justification and provide references to it or include the documentation in Appendix 3 below as per PSF filling guidelines. 3. PI use latest available version of the applied methodology i.e. ACM0002 version 21 for RCP in Joint PD-MR. 4. Tool 07 last 2 applicability conditions (3-4) in section 3.2 of Joint PD-MR is not properly justified by PP.		

	5. Refer para of applied methodology to quote the baseline scenario applied for PA in section 3.4 of Joint PD-MR.
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	1. Exact para. Numbers was inserted into the table under section 3.2 based on methodologies mentioned in section 3.1. 2. It was shown that Project Activity meets all applicability conditions of the methodology(ies) in detail under section 3.1. 3. Version number of applied methodology has been updated as the latest version i.e. ACM0002 version 21. 4. The last 2 applicability conditions are now explained transparently in the revised MR submitted. 5. Para of applied methodology was inserted under section 3.4.
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.	The corrections made in revised Joint PD-MR is found to be acceptable to Validation verification team, hence this CAR is closed.
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 04		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding (VVB)	The total SDG 13 and SDG 7 contributions indicated in the last column of Table 1 in Section 1.17.2 are incorrect. The achieved emission reductions for the first three monitoring periods of first CP and 1 st monitoring period of 2nd CP to be provided here. Also distinguish two monitoring periods CP in same table. For SDG 8 a project's self-defined measure for tracking a benefit is not align with an official SDG indicator, hence do not provide an indicator number. Instead, write a project-specific indicator that relates to the most appropriate SDG target.		
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or	SDG 13 and SDG 7, Last column of Table 1 under section 1.17.2 were corrected and distinguish between different monitoring periods and crediting periods were provided.		

further information for clarification as per finding)	For SDG8, revisions have been done in the Joint PD-MR.
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.	The corrections made in revised Joint PD-MR is found to be acceptable to Validation verification team, hence this CAR is closed.
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 05		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding (VVB)	CAR being raised for the following editorial corrections in the MR: 1) Build margin CO2 emission factor for the project electricity system provided in section 3.4 is wrong. Also the date of published by the same by Ministry is not provided in same section tables. 2) Change name of PMUM to EPIAS in all sections of Joint PD-MR. 3) PI correct the value of EF used for first CP monitoring period from 0.5470 to 0.547 tco2.		
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	1) Build margin CO2 emission factor for the project electricity system provided in section 3.4 was corrected and date of publish were added. 2) Name of PMUM were updated as EPIAS in all sections of the Joint PD-MR. 3) The value of EF used for first CP monitoring period from was changed from 0.5470 to 0.547 tco2		

Finding	CAR 05
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.	The corrections made in revised Joint PD-MR is found to be acceptable to Validation verification team, hence this CAR is closed.
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 06
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	Section 3.8.9 (1) of VCS standard Version 4.3 requires that "A full reassessment of additionality is not required when renewing the project crediting period. However, regulatory surplus shall be demonstrated in accordance with the requirements set out in the VCS Program rules and the project description shall be updated accordingly.". Accordingly, PP is requested to provide the information on regulatory surplus of the project in section 3.5 in Joint VCS PD-MR.
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	The regulatory surplus has been demonstrated in section 3.5 of the Joint PD/MR as per VVB's comments.
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.	The corrections made in revised Joint PD-MR is found to be acceptable to Validation verification team, hence this CAR is closed.
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 07		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding (VVB)	CAR being raised for the following corrections related to Monitoring and ER section (5 & 6) of the Joint PD-MR: 1) No need to provide parameters in section 5.1 of Joint PD-MR, related to EF, as it is calculated by Ministry, hence only provide one parameters i.e. CM_{EF}. Cap_{BL} and A_{BL} can remain provide for transparency purpose. 2) PI clarify in title of section 5.2 of Joint PD-MR that. these parameters are all data and parameters to be monitored during the project crediting period in RCP. 3) In “Value applied” row of parameter “ $EG_{facility, y}$ ” in section 5.2 only provide value of estimated derived value from generation license, as this section is for all data and parameters to be monitored during the project crediting period. 4) The test frequency of energy meters is not provided in parameter “ $EG_{facility, y}$ ” in section 5.2. As during onsite audit discussion with PP it is clear that the frequency of meters testing of all 4 meters of TEIAS is once in a year since 2015 as per TEIAS protocol. PP is requested to provide all the dates of meters testing in section 5 of Joint PD-MR for monitoring period. 5) For parameter in section 5.2 “ Cap_{PJ} ” source of data can be added as SCADA system & EPDK website as a crosscheck reference for the same parameter. 6) The parameter from section 5.2 “ $PE_{FF, y}$ ” needs to be removed as this section is for all data and parameters to be monitored during the project crediting period. Also pl clarify in comments section of same parameter in section 6.1 that, this data is only used for first CP as per version 10 of applied methodology. 7) The value of “A_{PJ}” used for calculation of power density in Joint PD-MR is not consistent with value provided in tables of section 5.2 and 6.1. PI clarify.		
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	1) Irrelevant parameters were removed from section 5.1. 2) Statement of “ Parameters given below reveals all data and parameters to be monitored during the project crediting period in RCP.” were added below the title of section 5.2. 3) In “Value applied” row of parameter “ $EG_{facility, y}$ ” in section 5.2, estimated electricity generation value based on generation license is added.		

Finding	CAR 07
	4) The required corrections has been done in section 5.2 of the PD/MR as per the comment received from VVB. 5) The required corrections for Cap_{PJ} has been done in section 5.2 of the PD/MR as per the comment received from VVB 6) The parameter of “PE_{FF,y}” was removed from section 5.2 and required explanation was inserted for the parameter in section 6.1. 7) Values of “A_{PJ}” under section 5.2 and 6.1 used for power density calculation is corrected.
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.	The corrections made in revised Joint PD-MR is found to be acceptable to Validation verification team, hence this CAR is closed.
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 08
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	PP is requested to clarify that why project emissions generated from fossil fuel used (Diesel Generator) during monitoring period for the first crediting period is not calculated in line with version 10 of the applied methodology (ACM0002) and first monitoring period verification and monitoring report.
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	The project emissions is not required to be calculated for the first crediting period inline with the applied methodology version 10.
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and	The corrections made in revised Joint PD-MR is found to be acceptable to Validation verification team, hence this CAR is closed.

Finding	CAR 08
VVB assessments (#2, #3, etc.) shall be added.	
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 09
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	The project proponent shall provide information on mechanism to be used for on-going communication with local stakeholders and in respect of ongoing communications as part of each subsequent verification (3.16.4 of VCS Standard Ver 4.3) and Joint VCS PD-MR template requirements in section 2.2 of VCS PD. The same mechanism of ongoing communication also needs to provide in section 5 i.e., monitoring plan of the VCS Joint PD-MR.
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	The corrections as per the comment raised by the VVB has been included in section 2.2 and section 5 of joint PD/MR Version 2
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.	The corrections made in revised Joint PD-MR is found to be acceptable to Validation verification team, hence this CAR is closed.
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 10
Classification	☒ CAR ☐ CL ☐ FAR

Finding	CAR 10
Description of finding (VVB)	Following queries raised by validation and verification team related to ER spread sheet provided by PP: 1) The name of 1st sheet need to be revised as MP3 for 1st CP instead of MP2. 2) The 1st sheet showing the dates of complete year 2014 in 1st column and date 31/01/2029 repeated in 3rd column of same sheet. 3) Name change required in all sheets from PMUM to EPIAS. 4) The electricity export value for the month of Aug. 2021 is "5403.467" MWh, as per EPIAS records, however in ER sheet it is mentioned "5403.476".MWh Kindly correct the net calculated electricity value accordingly for the month of Aug. 2021 and corresponding total value of whole MP in 2nd CP.
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	1) Correction was provided in revised ER spreadsheet. 2) Corrections were provided in revised ER spreadsheet. 3) Corrections were provided in revised ER spreadsheet. 4) EPIAS value of export of Aug. 21 is corrected in revised ER spreadsheet.
VVB Assessment #1 The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.	The corrections made in revised ER spreadsheet is found to be acceptable to Validation verification team, hence this CAR is closed.
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed