Akinci Hydroelectric Power Plant

By KBS Certification Services Pvt. Ltd.

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Prepared By	KBS Certification Services Pvt. Ltd.
Contact	Registered Office: KBS Certification Services Pvt. Ltd. 414-424, Om Shubham Tower, Neelam Bata Road, N.I.T. Faridabad, Haryana-121001, India Tel: +91 129 4034513, 4054513

	Website: www.kbscertification.com
Approved By	Kaushal Goyal Managing Director
Work Carried Out By	Team Leader & Technical Expert (TA 1.2): Rohit Badaya Team Leader (Trainee): Shikha Sharma Technical Reviewer (TA 1.2): Sanjay Kandari Manager (T & C): Tushar Eknath Chaudhari

Summary:

KBS Certification Services Pvt. Ltd. has been contracted by, "Aydem Yenilenebilir Enerji A.Ş." to undertake 1st verification and certification for the greenhouse gas (GHG) emission reductions reported from 'Akinci Hydroelectric Power Plant' VCS ID 1380, for the monitoring period 24/10/2018 to 30/09/2020, under the crediting period 24/10/2018 to 23/10/2028, in the initial monitoring report version 1.01 dated 13/06/2020, with regard to the relevant requirements of VCS Standard Version 4.

Akinci Hydroelectric Power Plant (HPP) is a run-off river based HPP with a total capacity of 99 MWe, utilizing the water of the Kelkit River in the Black Sea region, of Reşadiye-Tokat Province, Turkey. The hydroelectric power plant is designed to convert the potential energy of the Kelkit Stream into electricity by means of 3 turbines of 33 MWe capacity each. The electricity generated is sold to the Turkish National Electricity Grid.

The project activity has been operational since commissioning (24/10/2018) and during the first monitoring period i.e. from 24/10/2018 to 30/09/2020, it has generated 734,652.19 MWh net electricity, thereby resulting in emission reduction of 377,610 tCO2e. The monitoring period subject to this monitoring report is inclusive of first and last day of period.

The verification is based on the VCS PD, Monitoring report (MR), Emission reduction calculation spread sheet (ER sheet), proof of title, proof of right, additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and supporting documents made available to the verification team by project proponent.

A risk based approach has been followed to perform the verification of the project activity. In the course of verification, 01 Clarification Request (CL) and 06 Corrective Action Requests (CARs) have been raised. All the CARs and CLs have been closed out successfully. Along with that, 06 Forward Action Requests (FARs) raised during the registration of project activity have been addressed and successfully closed.

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 for the period 24/10/2018 to 30/09/2020 based on the reported emission reductions in the final monitoring report version 1.04 dated 09/12/2020 for the same period.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, KBS planned and performed 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.

As a result of the verification, the verification team confirms that:

- The project fulfils criteria of VCS Standard Version 4.
- The project is in line with all relevant VCS requirements.
- Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board

and VCS Association;

- All information and references relevant to the project activity resulting in emission reductions;

The monitoring is transparent, adequate and in line with applied baseline and monitoring methodology of ACM0002: Grid-connected electricity generation from renewable sources version 15.0.0.

Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 377,610 tCO_2e emission reductions during the 1st monitoring period (24/10/2018 to 30/09/2020), under the first crediting period (24/10/2018 to 23/10/2028).

Contents

1 INTRODUCTION

1.1 Objective

KBS Certification Services Pvt. Ltd. has been contracted by, "Aydem Yenilenebilir Enerji A.Ş." to undertake 1st verification and certification for the greenhouse gas (GHG) emission reductions reported from 'Akinci Hydroelectric Power Plant' VCS ID 1380 for the monitoring period 24/10/2018 to 30/09/2020, under the crediting period 24/10/2018 to 23/10/2028, in the initial monitoring report version 1.01 dated 13/06/2020 /1.1/, with regard to the relevant requirements of VCS Standard Version 4 /4/. 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 this verification exercise are, by review of objective evidence, to establish that:

- The project activity has been implemented and operated as per the registered project description (PD) /3.1/ and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- Monitoring report/1.2/ and other supporting documents are complete;
- The data is recorded and stored as per the monitoring methodology/10/ and approved monitoring plan/3.1/.
- To confirm that the monitoring system is implemented and fully functional to generate Certified Emission Reductions (CERs) 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.

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1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of monitoring report/1.2/, VCS project description (VCS PD) /3.1/, including the monitored data and other relevant documents made available to verifier and information collected through performing interviews during remote assessment of the project activity.

The project is assessed against the requirements of VCS standard version 04 /4/ and related rules and guidance /5/. KBS has, based on the recommendations in the latest version of Verified Carbon standard /4/, 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 registered VCS PD/3.1/ 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 remote audit;
- Ensure that the monitoring report/1.2/ 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 /10/;
- Evaluate the data recorded and stored are as per the monitoring methodology /10/.

1.3 Level of Assurance

☑ Reasonable level of assurance

The verification is based on the VCS PD /3.1/, MR /1.2/, proof of title, proof of right, additional documents related to baseline and monitoring methodology /10/, the subsequent background investigation /3.1//3.2/, monitoring plan /3.1/, follow-up interviews /11/ and supporting documents made available to the verification team by project proponent. The information in these documents is reviewed against the requirements of VCS Standard Version 4.0. KBS has employed a risk-based approach in the verification, focusing on the identification of significant risks for project implementation and the generation of Emission Reductions.

The items covered in the verification are described below:

- Criteria of VCS Version 04 (VCS Program guide Version 04 & VCS Standard Version 04) /4//5/
- Criteria of CDM approved methodology, ACM0002 version 15.0.0 /10/
- VCS Monitoring Report /1.2/
- Monitoring Plan /3.1/
- Background investigation and follow up interviews (Section 2.4 of this report)
- Registered VCS-PD/3.1/ and Validation Report /3.2/
- Project's compliance with other relevant rules, including the project country (Turkish) legislation and assurance to stakeholders of the quality

Furthermore, the verification 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)
- Proof of title /8/ /9/
- Single line diagram and site location map /7/
- Technical specifications /6/
- Start date supportive /9/

- Ownership documents /8//9/
- Remote auditing (04/11/2020) for verification
- Calibration Certificates /12/
- Export/Import data records /16/
- Operation & Maintenance / Maintenance/Shut down records

The Verification team has checked all the above-mentioned details and confirms that all the information provided is accurate.

Through the remote interviews host country rule and regulations related to project activity, Project description, technological measures, Implementation, Operation, Management of project activity and Training of personnel, Baseline and Monitoring plan, Stakeholder consultation etc. has been checked and found appropriate.

KBS applies the risk-based approach aimed at focusing on high risk issues to the verification results whilst not omitting any part of the mandatory processes. A few discrepancies were found during the verification and the findings were submitted to the project proponent, indicated under the titles corrective action requests (CARs) and clarification requests (CLs). CARs and CLs required PP to take relevant actions, based on which the Monitoring report was revised and re-submitted to the verification team.

Hence, the above steps were followed for achieving the level of assurance in verification report. Based on the process and procedures conducted, KBS confirms that the information in the MR /1.2/:

- is materially correct and is a fair representation of the actual project details, and
- is prepared in accordance with VCS requirements /4//5/ and the applied CDM methodology /10/ for information pertaining to GHG qualification, monitoring and reporting.

The verification work is carried out as per this requirement and the verification opinion is assured, provided the credibility of all above. Details are presented in the Verification statement in section 5 below.

1.4 Summary Description of the Project

Project activity is the operation of 99 MWe run-of-the-river hydroelectric power plant in the Black Sea region, of Reşadiye-Tokat Province, Turkey. The project activity involves electricity generation using potential energy of the Kelkit Stream by means of 3 turbines of 33 MWe capacity each and supply of this the generated electricity to the Turkish National Electricity Grid. The project displaces the electricity produced by 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.

As per the registered VCS- PD /3.1/, the start date of the project was considered as 12/02/2017, which was the expected date of commissioning of the project activity based on the provisional acceptance letter[1] by the Ministry of Energy and Natural Resources. However, the actual date of commissioning based on the provincial acceptance letter is 24/10/2018 /9.1/. Therefore, the start date of the project activity is identified as 24/10/2018. The same can be confirmed from the elaborated response provided in FAR 05.

The project activity has a 10 year (twice renewable) crediting period, with the duration of first 10 year crediting period from 24/10/2018 to 23/10/2028[2]/3.1/. The first monitoring period (24/10/2018 to 30/09/2020) considered for verification falls under the first crediting period of the project activity, with its start date aligned with the start date of the crediting period.

During the remote audit inspection, location (as mentioned in Table, section 1.7 of MR) and all the technical aspects of the project activity (equipment, serial no., type, date of calibration etc.) mentioned in the PD /3.1/ have been verified. The same was also crosschecked during the desk review of technical specifications /6/, Single line diagram and meter location /7/, Provisional acceptance letter/9/, review of data during remote audit/11/ and calibration certificates for meters /12/.

It was also confirmed (through remote interviews) that the project activity has been operational since commissioning (24/10/2018) /9/ and during the first monitoring period i.e. from 24/10/2018 to 30/09/2020, it has generated 734,652.19 MWh net electricity, thereby resulting in emission reduction of 377,610 tCO2e.

Project entity information as verified is presented below:

Item	Data
Project Entities	AYDEM YENİLENEBİLİR ENERJİ A.Ş. (Project Owner) [3][4]
	Ekobil Environmental Services and Consultancy Limited [5] (Project developer: Responsible for development of emission reduction through the Verified Carbon Standard)

[1] Expected to be received by 12/02/20170, but was actually received on 24/10/2018.

[2] Due to the revision in start date of the project activity, date of crediting period has been revised. Please see FAR 05 for details.

[3] In the registered VCS PD, the PP is Fırat Elektrik Üretim ve Ticaret A.Ş. Details of revised ownership have been elaborated in CAR 02 below.

[4] The name of the company has changed. Therefore, the contact person also changed.

[5] Registered to the Ankara Chamber of Commerce with the registration number of 145009 and with the full tittle of Ekobil Çevre Hizmetleri Danışmanlık Eğitim Tarım Hayvancılık Madencilik İnşaat İthalat İhracat Turizm ve Ticaret Limited Şirketi

2 VERIFICATIONPROCESS

2.1 Method and Criteria

The verification process was carried out in line with the requirements of VCS Version 04 /4/. Standard auditing techniques and KBS's CDM Procedures were also applied during the verification. A risk-based approach was followed to carry out verification and assess all the factors and concerns that relate to the issuance of emission reductions from a project activity.

They include:

- The review of the calculation of the carbon emission factor for the electricity grid.
- 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.

KBS follows a risk-based verification approach, wherein a desk review of the project documentation is undertaken, which is followed by a remote audit by the members of verification team. The verification protocol is filled by the verification team that is based on standard auditing practices and VCS requirements. The verification protocol provides transparent means to record the observations by the verification team members and the non-conformities, if any. The verification protocol is an internal document, and available on request.

Duration of Verification:

Verification Contract	19/05/2020
On site verification	NA (Justification section 2.4 below)
Draft Verification Report	05/12/2020
Final Verification Report	11/12/2020

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/3.1/ and monitoring methodology /10/, 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 'References'.

2.3 Interviews

Please refer section 2.4, where complete list of interviewed personnel and key points discussed is provided.

2.4 Site Inspections

As a result of the COVID-19 pandemic, taking into account the rules of relevant national and local authorities (local to the VVB offices as well as to locality of the site visits), World Health Organization (WHO) recommendations, policies of the VVB, email clarification for Verra guidance on site visits, notification of Covid-19 Travel Guidance for Projects https://verra.org/covid-19-travel-guidance/ and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return from specific countries), the VVB has skipped the on-site visit.

Further Email from VERRA dated 24/03/2020 from "Andrew Beauchamp" has been referred as per which "*The VCS Program does not explicitly mandate site visits as part of the validation and verification process, only that VVBs must achieve a reasonable level of assurance on all validations and verifications (per Section 4.1.2 of the VCS Standard, v4.0). Therefore, where a VVB can achieve a reasonable level of assurance without conducting a site visit, or through a remote site visit, this is in conformance with the VCS rules, and no request for an exemption or pre-approval from Verra is required. However, where a validation/verification has been conducted without a site visit, or through a remote site visit, please ensure that the applicable section of the validation/verification report includes a discussion of how a reasonable level of assurance was achieved without an in-person site visit*".

Hence, the VVB has used other standard auditing techniques for validation or verification as referred to in VCS Rules/requirements, VCS Validation and Verification Manual version 3.2.

Verification team has used the following alternative means for its assessment and to justify that they are sufficient for the purpose of verification. Along with desk review, audit team has conducted remote audit interview as follows:

- A complete desk review of the MR /1.2/, registered documents, as well as all applicable country legal requirement and supportive evidences have been checked by the verification team.

- Verification team has performed Zoom interview with PP in order 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 /1.2/ and supporting documents.
- A check of the monitoring equipment including performance and observations of monitoring practices against the requirements of the registered VCS PD /3.1/ and the selected methodology /10/.

Details of interviewees, topics covered and additional information are presented below:

Dates:	04/11/2020 and 04/12/2020 (Zoom Video inspection and interview)	
Key points discussed:	**Name of person, interviewed**	**Designation, Organization**
Operational data Calibration Data collection QA/QC procedures Calculation of ERs VCS requirements	Durmuş Görkem Kurt	Coordination Engineer, Aydem Yenilenebilir Enerji A.Ş.
	Haşim Bedir	Black Sea Regional Manager, Aydem Yenilenebilir Enerji A.Ş.
	Dr. G. Asli Sezer Ozcelik	Manager, Ekobil Environmental Services and Consultancy Ltd.
	Zeynep Artac	Climate Change and Sustainability Assistant Specialist, Ekobil Environmental Services and Consultancy Ltd.

2.5 Resolution of Findings

KBS applies the risk-based approach aimed at focusing on high risk issues to the verification results whilst not omitting any part of the mandatory processes. A few discrepancies were found during the verification and the findings were submitted to the project proponent, indicated under the titles corrective action requests (CARs) and clarification requests (CLs). CARs and CLs require the PP to take relevant actions. Criteria for judging items as CAR or CL are as follows:

Corrective action request (CAR):

- the project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions
- the Voluntary Carbon Standard's requirements have not been met, or

- there is a risk that emission reductions cannot be monitored or calculated.

Clarification request (CL):

- Information is insufficient or not sufficiently clear to determine whether the applicable VCS requirements have been met.

Forward Action Request (FAR):

FAR is to be raised to highlight issues related to project implementation that require review during the verification of the project activity. FARs do not relate to VCS requirements for registration.

CARs and CLs are to be resolved or closed out if the PP modifies the project description, rectifies the MR or provides adequate additional explanations or evidence that satisfies the concerns. If this is not completed, the project activity cannot be recommended for issuance under VCS registry.

The monitoring report /1.1/ was revised addressing the CARs & CLs issued by KBS. After reviewing the revised and resubmitted MR /1.2/; resolving the CARs & CLs raised and outstanding concerns, KBS issues this final verification report and opinion.

01 CL and 06 CARs were found during verification and closed satisfactorily. The list of CARs/CLs raised and the response provided, the means of verification, reasons for their closure and references to correction in the MR are provided in appendix 2 of this report. The revised MR with changes incorporated as per the issues raised were rechecked with the documentary evidences and found to be inline.

2.5.1 Forward Action Requests

No FAR has been raised during this Verification.

However, 06 FARs were raised during the time of registration of the project activity, which have been closed out successfully. Refer to appendix 2 for further details.

2.6 Eligibility for Validation Activities

KBS is conducting the verification activity, the validation was performed by another VVB. KBS has a valid UNFCCC accreditation in the sectoral scope from UNFCCC.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project is not registered or seeking registration under any other GHG programs. The project has not participated under any other GHG programme.

3.2 Methodology Deviations

The verification team confirms that the registered project, under the current monitoring period (i.e. first monitoring period from 24/10/2018 to 30/09/2020), complies with the requirements of the applied monitoring methodology ACM0002 version 15.0.0 /10/. Therefore, no methodology deviations are applied during the monitoring period.

However, during the registration of the project activity a deviation for monitoring parameter A_{PJ} was applied, as checked from section 2.6 of the registered VCS PD /3.1/ and section 3.2.2, 3.2.7 of the validation report. The deviation was applied as the power density of the project activity is very large, and the area flooded due to the project activity cannot exceed the given amount i.e 314,579 m^2 (as can be seen from the Map Showing the Reservoir Area, on Page 80 of the registered PD /3.1/). Therefore, the parameter related to the reservoir area i.e "A_{PJ}" has not been be monitored, and the parameter has not been added. The same was confirmed by the verification team during the remote audit and accepted.

Finding: CAR 04 was raised and successfully closed. Refer to appendix 2 for further details.

3.3 Project Description Deviations

No deviation in the project description has been applied to the project activity during the monitoring period. However, it was noticed that the project proponent ("Fırat Elektrik Üretim ve Ticaret A.Ş.") as per registered PD was changed to AYDEM YENİLENEBİLİR ENERJİ A.Ş. As confirmed during the remote interviews, Fırat was a company set up for the purpose of license obtaining, by the management of Bereket Enerji Üretim A.Ş. (which is the major shareholder/mother company). The title of the mother company then changed from Bereket Enerji Üretim A.Ş. to AYDEM YENİLENEBİLİR ENERJİ ANONİM ŞİRKETİ as confirmed from the title change[6] newspaper article of 'TURKIYE TICARET SICILI GAZETESI' dated 27 December

[6] Based on Order No: 5265, Mersis No: 0165003740400011, Trade Registry / File Number: 13798 of Denizli Trade Registry

2019. This change in title of the mother company led to the dissolution of all the sister companies as per company policy. Therefore, the name of PP is now AYDEM YENİLENEBİLİR ENERJİ A.Ş..

Finding: No findings were raised.

3.4 Grouped Project

Not applicable, as the project activity is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity is in operation stage as evidenced by the remote inspection (zoom video inspection) of the site. All the physical components and project boundary are in conformity with the description in registered VCS PD /3.1/, and validation report /3.2/. The capacity of project equipment's have been confirmed during the remote inspection (through review of installed capacity by SCADA System), also through the technical specifications /6/, electricity generation licence /8/, commissioning certificate /9/ and found in-compliance with the registered VCS PD /3.1/. FAR 04 raised during the validation of project activity was raised in this regard, please see the elaborated response in provided for the same in Appendix-2 of this report.

On the basis of the remote inspection /11/ and the review of technical specifications /6/, Single line diagram and meter location /7/, Electricity production license /8/, Provisional acceptance letter/9/, calibration certificates for meters /12/ project documentation, invoices /13/, organization structure /14/, Electricity generation data /16/, and fuel purchase receipts /17/, the verification team confirms that the project was implemented and operated as described in the registered VCS PD /3.1/. The construction of the project activity started in 29/07/2013, as confirmed from the evidence of construction start date /19/. The project activity was commissioned on 24/10/2018[7] as verified from the commissioning certificate /9.1//9.2/ of the project activity. As confirmed during the remote audit /11/ (Zoom video inspection and interview), the project activity is in continuous operation since commissioning and there is no such incident reported during the current monitoring period which may impact the operation & capacity design of the project activity. The calibration of monitoring equipment i.e. bi-directional meters (main and backup) was checked and it was confirmed that the meters are factory calibrated, tested at installation and also tested periodically by the grid operator /12/. calibrations are valid for 10 years and the same has been confirmed through the registered VCS-PD /3.1/ and the validation report /3.2/. The validity of calibration for 10 years

[7] The project activity involves electricity generation using potential energy of the Kelkit Stream by means of 3 turbines of 33 MWe capacity each. Generation unit 1 and 2 were commissioned in 24/10/2018. However, unit 3 was commissioned on 24/01/2019.

is also as per the host country requirements[8]. The regulation[9] which dictates the validity of the calibration for 10 years, also mandates the meters to be replaced every 10 years. Since the calibration of meters is valid till 2027 /12/, no replacement of the meters was undertaken during the current monitoring period. Therefore, no events have happened that may impact the GHG emission reductions or removals and monitoring in this monitoring Period. Same has been checked from the operational data during remote auditing /11/ and from the PMUM/MFRC website (using the project owner's access)/16/.

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 /3.1/. Thus emission reductions generated by 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 /3.2/. Hence, there is no possibility of double counting.

Sustainable Development Contributions:

As confirmed during the remote 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 12, SDG 13, SDG 14, SDG 15 and SDG 17). Under SDG 7, the project supplies clean, affordable and renewable energy (734,652.19 MWh net electricity under the monitoring period) without reliance on fossil fuels for generation of electricity to meet the growing demands in the region. For SDG 8, the implementation of project is providing trainings (occupational and health related) to locals with a decent and secure work environment by reducing emissions otherwise generated by the operation of fossil fuel based power plants. The emissions (consisting of gases such as sulphur dioxide) are generally responsible for damaging the quality of agricultural produce and therefore, result in economic harm. The electricity generated during the operation of project activity results in emission reductions i.e. sustainable production and consumption of this electricity, which corresponds to SDG 12. The emission reductions generated due to the project activity are accounted under SDG 13 (emission reduction of 377,610 tCO2e achieved under the monitoring period). For SDG 15 (i.e. supporting life on land), the project has avoided destruction of environmental sensitive areas.

[8] The latest version of the communiqué (in Turkish) can be found in the following link: http://www.epdk.gov.tr/web/elektrik-piyasasi-dairesi/44

[9] https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=6381&MevzuatTur=7&MevzuatTertip=5

Under SDG 17, the project activity strengthens the implementation and revitalizes the global partnership through sustainable development by the means of significant environmental and socio-economic benefits.

Management and operational system:

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 first monitoring period from 24/10/2018 to 30/09/2020.

The allocation of the responsibilities is documented in a written form /14/and is followed as described in the registered VCS PD /3.1/. Routines for the archiving of data are defined and documented. The electricity generation records /16/ were verified during remote audit and from the PMUM/MFRC website (using the project owner's access)/16/. It was observed that the data is consistent with the provided in the final MR /1.2/ and ER sheets /2.2/. The current status of the project activity was verified through the video observation during the remote audit /11/ and through the video evidence submitted by the PP, the PMUM/MFRC website (using the project owner's access)/16/ 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 4.3 of the MR /1.2/ is 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 4.3 of the MR, have been confirmed through the snapshots /11/ and the technical document /6/ submitted by the PP .

The verification team has remotely interviewed the plant personnel involved in the monitoring of the parameters that are used to determine the emission reductions of the CER project. It is confirmed based on the interviews and review of roles and responsibilities as per organizational structure /14/, that the plant's team is competent enough to monitor the parameters as described in the monitoring plan /3.1/.

As discussed above, the verification team concludes that management and operational system of the project is implemented and operated well. 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 remote inspection (refer to section 2.4 for details) /11/ and from the document review of technical specifications /6/, Single line diagram and meter location /7/, Electricity production license /8/, Provisional acceptance letter/9/, calibration certificates for meters /12/ project documentation, invoices /13/, organization structure /14/, Electricity generation data /16/, and fuel purchase receipts /17/, that the actual monitoring system complies with the monitoring plan mentioned in the registered VCS PD /3.1/.

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.

Therefore, from the document review /6//7//8//9//12//13//14//16/, and remote inspection, it is confirmed that all the parameters were monitored in accordance with the registered monitoring plan /3.1/ during the monitoring period. Following are the details of monitoring in accordance with the monitoring plan of the registered VCS PD /3.1/:

Data - Parameter	$EG_{PP\text{-}Gross\ Generation,\ y}$
Data unit	MWh
Description	Quantity of electricity exported by the power plant to the Grid in year y
Source of data	The Primary source of data is the TEIAS meter readings recorded remotely and accessible via the PMUM/MFRC web site. The same has been checked for random months by the Verification team during remote video inspection /16/ and complete checking of data has also been carried out through the screenshots /11/ of the same provided by the PP.
Description of measurement methods and procedures to be applied	Verification team confirms that the data has been measured directly from meters. The meter readings accessible via an Automatic Meter Reading Software, were checked remotely by the verification team during the video inspection /11/. Monthly screen outputs /17/ obtained from automatically recorded data at PMUM/MFRC were also checked by the verification team, for the entire monitoring period. As confirmed from the meter snapshots and its technical specifications /6/, back up meter has been installed in case there is main meter failure. However, only the main meter readings are accessible.
Frequency of monitoring-recording	Recorded continuously, read remotely by TEIAS, and accessible monthly via the PMUM/MFRC web site, Reported annually on the VCS Monitoring Report /1.2/ as verified by the verification team through remote assessment.
Value monitored	734,752.98 MWh The verification team cross checked the data from Monthly screen outputs /16/ of automatically recorded data at PMUM/MFRC and was able to verify the same.
Monitoring equipment	During the remote inspection /11/ and through review of generation data from TEİAŞ – PMUM web site /16/, it has been confirmed that the data has been monitored continuously by bi-directional metering devices, which provides the data for the monthly invoicing /13/ to TEİAŞ. All meters were found to be in compliance with the communiqué

<table>
<tr><td></td><td>for Metering Devices to be used in the Electricity Market[10].

The Calibration dates of the meters and their validity is as follows:

<table>
<tr><th>Meter Serial number</th><th>Manufacturer</th><th>Accuracy class</th><th>Calibration Date</th><th>Valid Until</th></tr>
<tr><td>Main Meter:7019918</td><td>EMH</td><td>0.2s</td><td>14.11.2017</td><td>14.11.2027</td></tr>
<tr><td>Spare Meter :7019919</td><td>EMH</td><td>0.2s</td><td>14.11.2017</td><td>14.11.2027</td></tr>
</table>

The meters are factory calibrated and tested at installation and tested periodically by the grid operator. The calibrations are valid for 10 years and the same has been confirmed through the registered VCS-PD /3.1/ and the validation report /3.2/. The validity of calibration for 10 years is also as per the host country requirements[11].

Both the meters are in compliance with the host country calibration regulations and had valid calibrations during the entire monitoring period.</td></tr>
<tr><td>QA-QC procedures to be applied</td><td>There are two bi-directional meters, 1 main and 1 check meter, and the monthly reported meter reading by the main meter, is cross-checked against the Main back up meter by a technician as confirmed during remote inspection /11/ and through snapshot/6/. Imported electricity was also monitored by the operator using software for internal monitoring, which was again confirmed during the remote inspection /11/.</td></tr>
<tr><td>Purpose of the data</td><td>Data is used to calculate net electricity supplied to the grid.</td></tr>
<tr><td>Calculation method</td><td>Direct Continuous Measurement</td></tr>
<tr><td>Comments</td><td>As confirmed during the remote inspection, the collected data will be kept by AYDEM YENİLENEBİLİR ENERJİ A.Ş. during the crediting period and until two years after the last issuance of VERs for the “Akinci Hydroelectric Power Plant” project activity for that crediting period.</td></tr>
</table>

[10] The latest version of the communiqué (in Turkish) can be found in the following link: http://www.epdk.gov.tr/web/elektrik-piyasasi-dairesi/44

[11] The latest version of the communiqué (in Turkish) can be found in the following link: http://www.epdk.gov.tr/web/elektrik-piyasasi-dairesi/44

Data - Parameter	$EG_{PP\text{-self consumption, y}}$
Data unit	MWh
Description	Quantity of electricity imported by the power plant from the Grid for self consumption, in year y
Source of data	The Primary source of data is the TEIAS meter readings recorded remotely and accessible via the PMUM/MFRC web site. The same has been checked for random months by the Verification team during remote video inspection /11/ and complete checking of data has also been carried out through the screenshots /16/ of the same provided by the PP.
Description of measurement methods and procedures to be applied	Verification team confirms that the data has been measured directly from meters. The meter readings accessible via an Automatic Meter Reading Software, were checked remotely by the verification team during the video inspection. Monthly screen outputs /16/ obtained from automatically recorded data at PMUM/MFRC were also checked by the verification team, for the entire monitoring period. As confirmed from the meter snapshots and its technical specifications /6/, back up meter has been installed in case there is main meter failure. However, only the main meter readings are accessible.
Frequency of monitoring-recording	Recorded continuously, read remotely by TEIAS, and accessible monthly via the PMUM/MFRC web site, Reported annually on the VCS Monitoring Report /1.2/ as verified by the verification team through remote assessment.
Value monitored	100.8 MWh The verification team cross checked the data from Monthly screen outputs /16/ of automatically recorded data at PMUM/MFRC and was able to verify the same.
Monitoring equipment	During the remote inspection /11/ and through review of generation data from TEİAŞ – PMUM web site /16/, it has been confirmed that the data has been monitored continuously by bi-directional metering devices, which provides the data for the monthly invoicing /13/ to TEİAŞ. All meters were found to be in compliance with the communiqué for Metering Devices to be used in the Electricity Market[12].

[12] The latest version of the communiqué (in Turkish) can be found in the following link: http://www.epdk.gov.tr/web/elektrik-piyasasi-dairesi/44

<table>
<tr><td></td><td>The Calibration dates of the meters and their validity is as follows:

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<tr><td>Spare Meter :7019919</td><td>EMH</td><td>0.2s</td><td>14.11.2017</td><td>14.11.2027</td></tr>
</table>

The meters are factory calibrated and tested at installation and tested periodically by the grid operator. The calibrations are valid for 10 years and the same has been confirmed through the registered VCS-PD /3.1/ and the validation report /3.2/. The validity of calibration for 10 years is also as per the host country requirements[13].

Both the meters are in compliance with the host country calibration regulations and had valid calibrations during the entire monitoring period.</td></tr>
<tr><td>QA-QC procedures to be applied</td><td>There are two bi-directional meters, 1 main and 1 check meter, and the monthly reported meter reading by the main meter, is cross-checked against the Main back up meter by a technician as confirmed during remote inspection /11/ and through snapshot/6/. Imported electricity was also monitored by the operator using software for internal monitoring, which was again confirmed during the remote inspection /11/.</td></tr>
<tr><td>Purpose of the data</td><td>Data is used to calculate net electricity supplied to the grid.</td></tr>
<tr><td>Calculation method</td><td>Direct Continuous Measurement</td></tr>
<tr><td>Comments</td><td>As confirmed during the remote inspection, the collected data will be kept by AYDEM YENİLENEBİLİR ENERJİ A.Ş. during the crediting period and until two years after the last issuance of VERs for the “Akinci Hydroelectric Power Plant” project activity for that crediting period.</td></tr>
</table>

Data - Parameter	Cap_{PJ}
Data unit	W

[13] The latest version of the communiqué (in Turkish) can be found in the following link: http://www.epdk.gov.tr/web/elektrik-piyasasi-dairesi/44

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
Description of measurement methods and procedures to be applied	Observed via SCADA system during remote audit inspection /11/. Also, technical specifications of the turbines have been checked during the video inspection /11/ and through the name plate capacity /6/ of turbine provided by the PP.
Frequency of monitoring-recording	once for each monitoring period The same has been confirmed during the remote audit inspection /11/.
Value monitored	99,000,000 The value has been checked through the name plate capacity of turbine /6/, and also through the technical details mentioned on the Provisional Acceptance letter (commissioning certificate) /9/.
Monitoring equipment	SCADA System of the Project activity. The same has been evidenced during the remote audit inspection /11/.
QA-QC procedures to be applied	Turbine labels checked with SCADA System reading. Verification team has evidenced the capacity via SCADA system during remote audit inspection /11/ and cross checked the same through the name plate capacity /6/of turbine provided by the PP.
Purpose of the data	To monitor capacity of the project
Calculation method	Not applicable.
Comments	Not applicable.

Remaining Issues from Validation or Previous Verification:

This is the first verification of the registered project activity and from the review of validation report and the previous verification reports, verification team confirms that 06 FARs raised during the registration of the project activity were to be addressed during this verification.

Finding: CL 01, CAR 01, CAR 02, CAR 04, CAR 05 were raised (related to project implementation status) during the verification and successfully closed. Further, FARs (01, 02, 03, 04, 05, 06) raised during the registration of the project activity were addressed and closed. Refer to appendix 2 for further details.

Opinion:

The verification team confirms that

- The project activity has been implemented and operated as per the registered VCS PD /3.1/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 /6//7//8//9//12//13//14//16/ and remote audit inspection /11/.

- The monitoring complies with the requirement of the applied methodology /10/;
- 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 /3.1/; The values included in the monitoring report and corresponding emission reduction sheets /2.2/ are verified and included under each monitoring parameter.

4.2 Safeguards

4.2.1 No Net Harm

The project activity is the generation of electricity from a clean renewable energy source i.e. hydro and does not involve any negative environmental and socio-economic impact. However, in accordance with "Environmental Law" No. 2872 (Issued in 1983), Annex 2 of Environmental Impact Assessment (EIA) Regulation (issued in 1993 and revised in 2001), run-of-river type HPPs with an installed capacity of more than 50 MW are subject to a full EIA investigation or report preparation. Since, the installed capacity of the project is 99MWe, the project has undergone Environmental impact assessment in compliance with the laws and regulations of Turkey and has achieved EIA affirmative certification on 18 March 2008, as confirmed from the registered validation report /3.2/. However, due to the change in Project owner, re-application of licence was carried out and the same was received on 09 July, 2012 /18/ as confirmed during the remote audit.

As confirmed through the remote interviews /11/, PP has adopted mitigation measures to minimise the impact of construction and operation as per the Project Presentation Report submitted to the authorities. Necessary precautions have been taken for the minimization of dust, discharge of wastewater in accordance with Water Pollution Control regulations, collection of waste oil Hazardous Waste Control Regulations and Waste Oil Control Regulations, and disposal of waste to waste treatment facilities. During the remote investigation /11/, PP confirmed that no such accident had occurred during the current monitoring period, which could be responsible for negative environmental and socio-economic impact.

4.2.2 Local Stakeholder Consultation

The local stakeholder consultation meeting for the project activity was conducted on project site on 21/11/2007 and the process was validated during the registration of project activity in VCS. VCS validation report /3.2/ 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.

During the monitoring period there were no complaints about or demands from the project. The same was confirmed through the remote audit conducted during the monitoring period.

4.3 AFOLU-Specific Safeguards

This is not an AFOLU project, as can be confirmed from the registered VCS PD /3.1/.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The verification team has reviewed the emission reduction (ER) spread sheet /2.2/ and checked all the formulae and verified them to be correct and in line with the monitoring plan of the registered VCS PD and the applied monitoring methodology /10/.

All the monitored parameters are described above in section 4.1. All the ex-ante parameters which are used in the calculation of emission reduction are presented in section 4.1 of the MR /1.2/ transparently. It is confirmed that all the ex-ante parameters have been correctly used in the emission reduction calculation.

Baseline emissions:

The baseline emissions (BEy) are calculated based on the following formula:

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

Where:

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

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

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

And

$EG_{PJ,y} = EG_{Facility,y}$

$EG_{Facility,y}$ = Quantity of net electricity generation supplied by the project plant to the grid in year y (MWh/y)

The Combined margin CO_2 emissions factor in year y (tCO_2/MWh), $EF_{grid,CM,y}$, is fixed ex-ante for the duration of the crediting period, and is 0.5140016 tCO_{2e}/MWh.

Therefore,

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

$BE_y = (734,652.19) \times 0.5140016$

$BE_y = 377,610\ tCO_2$ (rounded down)

It is noted that the formula and calculation used for baseline emission calculation in the monitoring report /1.2/ and ER sheet /2.2/ is in compliance with the registered VCS PD /3.1/. The default values and data used in the monitoring report is in-line with the registered PD /3.1/. Hence, acceptable to the verification team.

Project Emissions:

The Project emissions (PEy) are calculated based on the following formula:

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

Where:

PE_y= Project emissions in year y (tCO2e/yr)

$PE_{FF,y}$ = Project emissions from fossil fuel consumption in year y (tCO2e/yr)

$PE_{GP,y}$= Project emissions from the operation of geothermal power plants due to the release of non-condensable gases in year y (tCO2e/yr)

$PE_{HP,y}$= Project emissions from water reservoirs of hydro power plants in year y (tCO2e/yr)

There has been diesel consumption during the monitoring period, as confirmed from the fuel purchase reciepts. However, as per the paragraph 31 of the applied methodology /10/, *"or all renewable energy power generation project activities, emissions due to the use of fossil fuels for the backup generator can be neglected."*

Therefore, PE_{FF} = 0, which is acceptable to the verification team.

$PE_{GP,y}$ is not applicable to the project activity, as the registered project is a hydro power plant /3.1/.

As per the methodology /10/ the PEy in case of a hydro power project is Emissions from water reservoirs of hydro power plants ($PE_{HP,y}$)

> *"For hydro power project activities that result in new reservoirs and hydro power project activities that result in the increase of existing reservoirs, project proponents shall account for CH_4 and CO_2 emissions from the reservoir, estimated as follows:"*

The project has a power density of 314.517m^2 (as can checked from the section 3.2.2 of registered validation report /3.2/). The parameter "A_{PJ}" has not been monitored due to the deviation aaccepted during registration of the project activity (explained in detail in section 3.2 of this report).

As per paragraph 39 of the applied methodology /10/, if the power density of the project activity is greater than 10 W/m2

Then, $PE_{HP,y}$= 0

Hence, as per the calculation checked by the verification team,

PE_y= 0

Leakage:

As per the methodology ACM0002, version 15.0.0 /10/ and as defined in the registered VCS PD /3.1/ no leakage is considered in the project activity and the same is followed in this monitoring period also. Thus, it is in compliance with the registered VCS PD /3.1/.

The following are the ex-ante parameters used in the ER calculation which are in compliance with registered VCS PD/3.1/:

Parameter	Description	Justification
FCi,y cubic meter	Amount of fuel i consumed by relevant power plants in Turkey in years, 2010, 2011, 2012.	The value is used in the calculation of the Emission factor (0.5140016 tCO_{2e}/MWh). The emission factor has already been calculated ex-ante as 0.5140016 tCO_{2e}/MWh. The value data on the parameter is available in the Annex-2-Table-1@validated PDD version 2.0 /3.1/, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.
NCVi,y	Net Calorific Values	The value is used in the calculation of the Emission factor

GJ/Mass	for fossil fuel type *i* in year, for the years 2010, 2011 and 2012	(0.5140016 tCO_{2e}/MWh). The emission factor has already been calculated ex-ante as 0.5140016 tCO_{2e}/MWh. The value data on the parameter is available in the Annex-2-Table-5@validated PDD version 2.0 /3.1/, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.
EFCO2,i,y tCO2/GJ	CO2 emission factor of fossil fuel type i in year y	The ex-ante value (0.5140016 tCO_{2e}/MWh) has been determined in the registered VCS-PD /3.1/ and the validation report has been checked and the emission factor is found to be correct. The value data on the parameter is available in the Annex-2-Table-2@validated PDD version 2.0 /3.1/, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.
EGy MWh	Net electricity generated in the project electricity system in other words, net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost / must-run power plants / units, in year y	The value is used in the calculation of the Emission factor (0.5140016 tCO_{2e}/MWh). The emission factor has already been calculated ex-ante as 0.5140016 tCO_{2e}/MWh. The value data on the parameter is available in the Annex-2-Table-3 and Table 4@validated PDD version 2.0 /3.1/, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.
EGm,y MWh	Net electricity generated and delivered to the grid by power unit m in year y	The value is used in the calculation of the Emission factor (0.5140016 tCO_{2e}/MWh). The emission factor has already been calculated ex-ante as 0.5140016 tCO_{2e}/MWh. The value data on the parameter is available in the Annex-2-Table-8@validated PDD version 2.0 /3.1/, which has been checked. Hence it is confirmed that the ex-ante details presented on the ex-ante parameter is found appropriate.
ηm,y	Average net energy conversion efficiency of power unit m in year y	The value is used in the calculation of the Emission factor (0.5140016 tCO_{2e}/MWh). The emission factor has already been calculated ex-ante as 0.5140016 tCO_{2e}/MWh. The value data on the parameter is available in the Annex-1 of the "Tool to calculate emission factor for an electricity system" /15/, which has been checked. Hence it is confirmed that the ex-ante details presented on the

		ex-ante parameter is found appropriate.

According to the applied methodology /10/, the conservativeness of the achieved emission reduction was checked and the detailed emission reduction calculation has been transparently provided in the ER sheet /2.2/. All the formulae and the calculation procedure were checked by the verification team. In the opinion of verification team, the assumptions, emission factors and default values that were applied in the calculations have been justified. Also, the verification team confirms that there were no manual transposition errors between the data sets in the ER Sheet/2.2/ during the current monitoring period. It is confirmed that the data has been measured directly from meters and it was cross checked from the TEİAŞ – PMUM web site /16/.

Finding: CAR 05 was raised and successfully closed. Refer to appendix 2 for further details.

Opinion: The verification team confirms that

- The complete data set for the identified and required parameters for the operational days in the current monitoring period was available, as indicated in section 4.1 above;
- The reported data has been cross checked with available records, as indicated in the section 4.4 above under each monitored data, wherever appropriate;
- The baseline, project and leakage emissions have been determined in accordance with the requirement of the applied methodologies, as contained in the final monitoring report/1.2/ and corresponding emission reductions spreadsheet /2.2/;
- The assumptions, emission factors and default values used are justified, as indicated in the section 4.4 above.

4.5 Quality of Evidence to 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 registered monitoring plan /3.1/. No significant lack of evidence and missing data were detected during remote audit interview and video inspection /11/. Hence, the verification team confirms that the monitoring system ensures required quality of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures. The monitoring parameters 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 4.1 under each parameter and confirms to the requirement of the PD /3/. The export and import data is measured by the electricity meters, recorded continuously on the TEİAŞ – PMUM web site /16/ and the invoices are generated monthly/13/. The data is then reported annually on the VCS Monitoring Report as verified by the verification team through remote assessment.

It was also verified through remote audit interview of responsible personnel, that the plant's team involved in the monitoring of project activity is well experienced. Hence, the verification team concludes that competent staff, as mentioned in the organizational structure is employed by the project proponent to carry out the relevant tasks with sufficient accuracy. Furthermore, it was confirmed during remote audit discussion that internal training program for the monitoring staff are conducted on regular basis.

4.6 Non-Permanence Risk Analysis

Not applicable to the project activity.

5 VERIFICATION CONCLUSION

KBS Certification Services Pvt. Ltd. has been contracted by, "Aydem Yenilenebilir Enerji A.Ş." to undertake 1st verification and certification for the greenhouse gas (GHG) emission reductions reported from 'Akinci Hydroelectric Power Plant' VCS ID 1380 for the monitoring period 24/10/2018 to 30/09/2020, under the crediting period 24/10/2018 to 23/10/2028, in the initial monitoring report version 1.01 dated 13/06/2020 /1.1/, with regard to the relevant requirements of VCS Standard Version 4 /4/.

The verification is based on the validated and registered VCS PD/3.1/and the monitoring report/1.2/ for this project. Our verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakech accord, as well as those defined by the CDM Executive Board and the VCS Standard Version 04.

The management of the 'Ekobil Environmental Services and Consultancy Limited.' 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 Monitoring Report Version 1.04 and dated 09/12/2020. The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the 'Ekobil Environmental Services and Consultancy Limited'. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report Version 1.04 and dated 09/12/2020.

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 for the period 24/10/2018 to 30/09/2020 based on the reported emission reductions in the Final Monitoring Report Version 1.04 dated 09/12/2020 for the same period.

As a result of the verification, the verification team confirms that:

- All operations of the project are implemented and installed as planned and described in the project description /3.1/.
- 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, KBS 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.

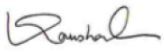
Verification period: From 24/10/2018 to 30/09/2020

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

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
24/10/2018 to 31/12/2018	16,400	0	0	16,400
01/01/2019 to 31/12/2019	231,006	0	0	231,006
01/01/2020 to 30/09/2020	130,204	0	0	130,204
TOTAL	337,610	0	0	337,610

Location: Faridabad

Date: 11/12/2020



Authorized Signatory: Kaushal Goyal

Designation: Managing Director

KBS Certification Services Pvt. Ltd.

APPENDIX 1: REFERENCES

/1/	/1.1/ Monitoring Report, Version 1.01, dated 13/06/2020 (Initial Version) /1.2/ Monitoring Report, Version 1.04 dated 09/12/2020 (Final Version)
/2/	/2.1/ Emission Reduction calculation sheet, Version 1.01 dated 13/06/2020 (corresponding to initial Version of VCS MR) /2.2/ Emissions Reduction calculation Sheet, Version 1.04 dated 09/12/2020 (corresponding to final Version of VCS MR)
/3/	/3.1/ Registered VCS-PD version 2.00 dated 26/10/2014 /3.2/ Validation report dated 08/12/2014
/4/	VCS Standard Version 4
/5/	VCS Programme guide Version 4
/6/	Technical specifications/photographs of turbines, electricity meters etc.
/7/	Single line diagram and meter location / Layout
/8/	Electricity production license dated 24/10/2019 (Valid for 36 years 5 months 19 days)
/9/	/9.1/ Commissioning document (Provisional Acceptance Letter) of Unit 1,2 dated 24/10/2018 /9.2/ Commissioning document (Provisional Acceptance Letter) of Unit 3 dated 24/01/2019
/10/	ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources --- Version 15.0.0
/11/	Remote auditing (04/11/2020) for verification of measuring and monitoring procedure, • Video recordings & snapshots of the project site/equipment's • Interviews and data/log
/12/	Calibration Certificates and meter test report for main meter and check meter
/13/	Invoices raised during the monitoring period
/14/	Organization structure/chart
/15/	Tool to calculate the emission factor for an electricity system, Version 04.0
/16/	Review of Electricity generation data from TEİAŞ – PMUM web site (monthly screenshots were also submitted)
/17/	Diesel fuel purchase reciepts for the monitoring period
/18/	EIA affirmative certification dated 09 July 2012
/19/	Evidence for construction start date 29/07/2013

APPENDIX 2: FINDINGS

Summary of findings	CL	CAR	FAR
	01	06	06

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

Remaining FARs from validation

FAR ID	01	Section no.	4.1	Date: 07/12/2020
Description of FAR				
The location of the weir as visited and confirmed to be correct during the site visit. The DOE shall verify the location of the power house and the connection to this project to identify the project clearly.				
PP response				**Date:** 08/12/2020
The location of the weirs and the power house added under the section 1.7 Also a KMZ file that shows the exact location of the powerhouse is added in the Box.				
Documentation provided by PP				
https://app.box.com/s/y28yvg1f5tdglkkhae67s8f5umhkm7lo				
VVB assessment				**Date:** 09/12/2020
The location of weir point 1 and 2 and the powerhouse has been checked by exporting the KMZ file provided by PP on Google earth engine software. The location of the weirs as mentioned in the section 1.7 of the revised MR, is also consistent with the details mentioned in the registered PD. However, the actual coordinates of the powerhouse are inconsistent from the coordinates mentioned in the VCS PD. This has been revised in the section 1.7 of MR, based on the actual coordinates of powerhouse in the KMZ file. Hence, FAR 01 is closed.				

FAR ID	02	Section no.	4.1	Date: 07/12/2020
Description of FAR				

No metering devices for monitoring of electricity could be identified because of the projects early stage. The DOE shall identify: - the meter location - the meter serial numbers - the meter connection to the plant by verifying the single line diagram.

PP response	**Date:** 08/12/2020
Meters information(Manufacture,Calibration date,Validation,Accuracy class) is added under the section 4.3 Single line diagram is added in the MR.	
Documentation provided by PP	
Please see version 1.03 Meter information https://app.box.com/s/h9jyo4gv08hf9t2q1jqerj89i4h4n2n8 Single line diagram https://app.box.com/file/749801754393	
VVB assessment	**Date:** 09/12/2020
Verification team has checked the meter serial numbers during the remote audit and through the meter snapshots, calibration documents provided by the PP. The meter layout and connection of the project activity to grid has also been verified through the single line diagram. All the information has been confirmed to be in compliance with the monitoring plan of the registered VCS PD. Hence, FAR 02 is closed.	

FAR ID	03	**Section no.**	4.1	**Date:** 07/12/2020
Description of FAR				
The monitoring procedures implementation shall be verified by the DOE to be applied according to the Monitoring Plan and methodology requirements.				
PP response				**Date:** 08/12/2020
Under the monitoring plan section (under section 4.3) single line diagram and detailed information about the meters are added.				
Documentation provided by PP				
Please see version 1.03 of the MR.				
VVB assessment				**Date:** 09/12/2020

The implementation of monitoring procedures as per monitoring plan mentioned in VCS PD has been checked by the verification team during the remote audit. The details related to meter location and information has been discussed in the FAR 02 above. The connection of project activity to the grid, details of operation and organizational responsibilities etc. have been confirmed during the remote audit. The generation data for electricity has been checked from the PMUM/MFRC web site, using the project owner's access, calibration documents, meter test reports for the bi-directional main and backup meter has also been checked. Therefore, the verification team confirms that the project activity is operational during the entire monitoring period since the commissioning. Hence, FAR 03 is closed.

FAR ID	04	**Section no.**	4.1	**Date:** 07/12/2020
Description of FAR				
The power generation capacity shall be verified by physical evidence of the turbines in the power house.				
PP response				**Date:** 08/12/2020
Physical evidence of the turbines are added under the box link.				
Documentation provided by PP				
https://app.box.com/s/0joownhn3rnn4f6ln3tcmsm5kj8eihso				
VVB assessment				**Date:** 09/12/2020
The physical evidence of the turbine wasn't possible due to the travel restrictions posed by the COVID-19 pandemic. However, during the remote interviews, installed capacity as per SCADA system and the name plate capacity of the turbines was evidenced, screenshots of the same have also been provided by the PP. Through the screenshots, and the technical details mentioned on the commissioning certificate, verification team was able to confirm the power generation capacity i.e 99 MWe. Hence, FAR 04 is closed.				

FAR ID	05	**Section no.**	4.1	**Date:** 07/12/2020
Description of FAR				

The project start date shall be verified in consistency with the description in the PDD. The real project start date as well as the crediting period shall be recorded (and amended if necessary) both in the Monitoring Report and the Verification Report.

PP response	**Date:** 08/12/2020
In PDD its written that the expected date to be 12 February 2017. However the Provisional Acceptence letter by the Ministry of Energy and Natural Resources is taken on 24 October 2018. This can be crosschecked by checking the acceptance letter under the link below.	
Documentation provided by PP	
https://app.box.com/s/l78s3dbiv9i22bsa3tta61usywxic7de	
VVB assessment	**Date:** 09/12/2020
As per section 3.7 of the VCS standard version 4, the project start date is the date on which the project began generating GHG emission reductions, which is the date of commissioning of the project activity and has been verified by the provisional acceptance letter dated 24/10/2018. The date mentioned in the registered PD i.e. 12/02/2017 was the expected date of commissioning whereas the actual date of commissioning is 24/10/2018. Therefore, the start date of the project activity is 24/10/2018. Accordingly, the crediting period of the project activity has been amended, and is now from 24/10/2018 to 23/10/2028. Hence, FAR 05 is closed.	

FAR ID	06	**Section no.**	4.1	**Date:** 07/12/2020
Description of FAR				
The electricity meter calibration shall be checked initially for the first MP.				
PP response				**Date:** 08/12/2020
Calibration of electricity meters are checked and corrected.				
Documentation provided by PP				
Please see version 1.03 of the MR.				
VVB assessment				**Date:** 09/12/2020

Calibration details have been checked from the meter test reports and calibration document provided by the PP and the verification team confirms that the calibration covers the entire monitoring period (Please see section 4.4 of this report for more details. Hence, Far 06 is closed.

Table 2. CL from this verification

CL ID	01	**Section no.**	4.1	**Date:** 10/11/2020
Description of CL				
Under section 1.5 of the submitted MR, start date of the project activity has been mentioned as 24/10/2018. However, as per the registered VCS-PD, expected start date (12/02/2017) was chosen as the expected date when the project will be commissioned by a provisional acceptance letter by the Ministry of Energy and Natural Resources." Accordingly, PP needs to submit the evidence regarding the commissioning of project activity, so that the start date could be verified.				
PP response				**Date:** 24/11/2020
Necessary document is uploaded.				
Documentation provided by PP				
https://app.box.com/s/7dw30sqrtym23k5ue32i5ucncgt8yw0r				
VVB assessment				**Date:** 03/12/2020
The Provisional acceptance document *"Akıncı HES Ünite-1,2 Geçici Kabul Tutanağı"* dated 24/10/2018 submitted by the PP has been checked by the verification team and it has been verified that the start date of 24/10/2018 is in accordance with the document. Hence, CL 01 is closed.				

Table 3.CAR from this verification

CAR ID	01	Section no.	4.1	Date: 10/11/2020
Description of CAR				
Under section 1.1, as per the template filling instructions of Monitoring Report version 4.0, PP Shall "provide a summary description of the implementation status of the project, including the following (no more than one page): • *A summary description of the implementation status of the technologies/ measures (e.g., plant, equipment, process, or management or conservation measure) included in the project.* • *The relevant implementation dates (e.g., dates of construction, commissioning, and continued operation periods).* • *The total GHG emission reductions or removals generated in this monitoring period."*				
PP response				Date: 24/11/2020
Necessary arrengements are made. An extra table showing important dates and the amount of total GHG emission reduction are added.				
Documentation provided by PP				
Please see version 1.02 of the Monitoring Report.				
VVB assessment				Date: 03/12/2020
The revised monitoring report submitted by PP has been checked by the verification team and it has been confirmed that the necessary information has been added as per the requirement of the template. Hence, CAR 01 is closed.				

CAR ID	02	Section no.	4.1	Date: 10/11/2020
Description of CAR				
Under Section 1.3 and 1.4 of the submitted MR, name of the project proponent and the other parties involved in the project activity was found to be inconsistent with the registered VCS-PD.				
PP response				Date: 24/11/2020
Required explanation is added as a footnote: Title of the company changed from Bereket Enerji Üretim San. ve Tic. A. Ş. to Aydem Yenilenebilir Enerji A.Ş. Therefore, the contact person also changed. Also, under the section 3.1 in Table 2 relevant dates of the change is added.				

Documentation provided by PP	
Please see version 1.02 of the Monitoring Report.	
VVB assessment	**Date:** 03/12/2020
As per the registered VCS-PD, the name of the PP is “Fırat ElektrikÜretim Ve TicaretA.Ş”. The change seems inconsistent. Finding Open.	
PP response	**Date:** 08/12/2020
Inconsistency is corrected by giving the right information in footnote. Bereket Energy was the major shareholder of Fırat Elektrik Uretim and as the Bereket Changed tittle as a company policy they have disolved all the individual sister companies that hold licences of facilities (like the Akıncı HPP) and changed the ownership as Aydem Yenilenebilir A.Ş.	
Documentation provided by PP	
Please see version 1.03 of the MR.	
VVB assessment	**Date: 09/12/2020**
The justification provided by PP is acceptable to the verification team based on the remote audit discussion. Therefore, the revision in the footnote is acceptable. CAR 02 is closed.	

CAR ID	03	**Section no.**	-	**Date:** 10/11/2020
Description of CAR				
Under section 2.1 and 2.2, Annex-3 and 4 have been referred, however no such annex was found in the submitted MR. PP needs to revise the sections accordingly.				
PP response				**Date:** 24/11/2020
It is corrected by giving correct references.				
Documentation provided by PP				
Please see version 1.02 of the Monitoring Report.				
VVB assessment				**Date:** 03/12/2020
The revisions were found to be acceptable. Hence, CAR 03 is closed				

CAR ID	04	**Section no.**	3.2, 4.1	**Date:** 10/11/2020

Description of CAR	
PP shall revise the following under section 3 of the submitted MR: 1. Under section 3.1, the start date of the project activity mentioned was found to be inconsistent with the start date mentioned in the section 1.5 of the project activity. 2. Under section 3.1 of the submitted MR, details of shutdown/ failure are required under the significant details for the project monitoring period. 3. Under section 3.2.1, PP needs to mention the deviation related to parameter A_{PJ} undertaken during the registration of the project activity. 4. Under section 3.2.2, the date of the registered validation report was found to be inconsistent.	
PP response	**Date: 24/11/2020**
1. The start date mentioned under the section 3.1 is corrected. 2. Under section 3.1, Table 2 is revised. 3. Under section 3.2, 3.2.1 is corrected. Parameter A_{PJ} is added. 4. The date of the registered validation report is corrected.	
Documentation provided by PP	
Please see version 1.02 of the Monitoring Report.	
VVB assessment	**Date:** 03/12/2020
Verification team has checked the revised MR and confirms the following: 1. The start date of the project activity in section 3.1 is now consistent with section 1.5 and Provisional acceptance document *"Akıncı HES Ünite-1,2 Geçici Kabul Tutanağı"* dated 24/10/2018. 2. It has been confirmed during the remote audit that no major shut down/ failure were evidenced and the revised significant details are found to be consistent. 3. The deviation has been appropriately mentioned in the section 3.2.1. 4. The date of registered validation report i.e. 08/12/2014 is now correctly mentioned in section 3.2.2. Hence, CAR 04 is closed.	

CAR ID	05	Section no.	4.1, 4.4	Date: 10/11/2020
Description of CAR				
PP shall revise the following under section 4 of the submitted MR: 1. Under section 4.1, for all the data parameters available at the time of validation, PP needs to provide the "values applied" as per the registered VCS-PD. In most of the parameters, reference to annex has been provided however, no such annex was found in the submitted MR. 2. Under section 4.2, for the monitored parameters "$EG_{PP\text{-}Gross\ Generation,\ y}$" and "$EG_{PP\text{-}self\ consumption,\ y}$", the values monitored in the monitoring period needs to be provided. 3. Under section 4.3 of the submitted MR, details of monitoring equipment and related shutdown/ failure details are required.				
PP response				**Date:** 24/11/2020

1. Values applied section is corrected. 2. Values monitored in the monitoring period are provided. 3. Details of monitoring equipment and meters are provided.
Documentation provided by PP
Please see version 1.02 of the Monitoring Report.
VVB assessment **Date:** 03/12/2020
1. The revisions have been checked by the verification team and found acceptable. 2. The mentioned values are inconsistent. Finding Open. 3. The revised section 4.3 has been checked and the verification team confirms that monitoring equipment and their calibration details have been mentioned. The details are consistent with the photographic evidence, technical document for meter details and calibration certificates provided.
PP response **Date:** 08/12/2020
2. The mentioned values are corrected by checking the ER sheet.
Documentation provided by PP
Please see version 1.03 of the MR.
VVB assessment **Date:** 09/12/2020
2. The revision has been checked and the values are consistent with the ER sheet. Hence, CAR 05 is closed

CAR ID	06	**Section no.**	-	**Date:** 10/11/2020
Description of CAR				
PP Shall revise the following throughout the MR: 1. Data separator (comas, full stop) should be added as per the international format (1000 separated) in the calculated values. 2. Refer to the minor comments related to formatting in the MR.				
PP response				**Date:** 24/11/2020
1. Data separators are corrected as to fit the international format. 2. Minor comments are referred and corrected.				
Documentation provided by PP				
Please see version 1.02 of the Monitoring Report.				
VVB assessment				**Date:** 03/12/2020
Some inconsistencies are still observed. Hence, finding open				

PP response	Date: 08/12/2020
Data seperators are corrected as to fit the international format and minor comments are referred.	
Documentation provided by PP	
Please see version 1.03 of the MR.	
VVB assessment	**Date:** 09/12/2020
The corrections have been checked in the revised MR and are found acceptable. Hence, CAR 06 is closed.	

Table 4.FAR from this verification

No FAR raised from this verification.

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

APPENDIX 3: COMPETENCE OF TEAM MEMBERS

Personnel Name:		Rohit Badaya	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☒
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
	TA 1.2: Energy generation from renewable energy sources		
Energy distribution	TA 2.1: Energy distribution		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Solid waste and wastewater TA 13.2 Manure		
Approved By	Manager Competency & Training		
Approval date:	29/12/2018		

Personnel Name:		Ms. Shikha Sharma	
Qualified to work as:			
Team Leader (Trainee)	☒	Technical Expert	☐
Validator/Verifier	☒	Financial Expert	☐
Technical Reviewer	☐	Local Expert	☐

Area(s) of Technical Expertise	
Sectoral Scope	Technical Area
-	-
Approved by (Manager C & T)	Sanjay Kandari
Approval date:	03/11/2020

Personnel Name:	Sanjay Kandari		
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☒
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal TA 13.2 Manure		
Approved by (Manager C & T)	Akhilesh Joshi		
Approval date:	11/12/2015		