



**Verified Carbon
Standard**

DARICA-1 99 MW HYDRO POWER PLANT



Document Prepared By: LGAI Technological Center, S.A. (Applus+ Certification)

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Summary:

Verification purpose: The main purpose of this project activity is to generate clean form of electricity through Hydro power source. The project activity is run-of-river project, located in Mesudiye district, Ordu province, Turkey. The generation capacity of the project was initially designed as 99 MW. However, during operation phase the capacity of project was increases to 112.42 MW (2 x 56.21 MW turbines consisting 2 turbines of 56.21 MW each and the generator capacity was increased to 110.32 MWe (2 x 55.16 MW). The Unit 1 and Unit 2 of project activity was commissioned on dated 10/10/2009 and dated 23/12/2009, respectively. The electricity generated from the project activity is fed into the National Turkish Grid. which is mainly dominated by thermal power plant.

Start date of the project activity is 10/10/2009. This is the day on which the Unit 1 was commissioned and began generating GHG emission reductions or removals which is in line with the paragraph 3,7 of VCS standard, version 4.1. An undertaking has been submitted by PP for double counting would never happens with the any other GHG program. During the current monitoring period, project activity undergoes continued operation and no major breakdown had taken place.

This is 4th monitoring period which covers the activity from 01/01/2013 to 31/12/2017(inclusive both days). During this monitoring period, the project activity has supplied 1,132,269.60MWh of electricity, and thus contributing to the GHG reductions of 724,399 tCO₂e(rundown).

Thus, VCS crediting period is of 10 years. The start date of crediting period is 10/10/2009¹ and 09/10/2019 is the end date of the crediting period.

A risk-based approach has been followed to perform this verification activity. In the course of verification, 05 Corrective Action requests (CAR), 01 Clarification Requests (CLs) and 00 Forward action requests (FARs) were raised and successfully closed. The review of the Monitoring report and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and PP have provided DOE with sufficient evidence to verify the fulfilment of the stated criteria of VCS.

LGAI Technological Center S.A. (Applus+ Certification) (Hereafter referred as Applus+ Certification) has been appointed by “Bilgin Güç Santralleri Enerji Üretim A.Ş.” to perform the 4th periodic verification of the “DARICA-1 99 MW Hydro Power Plant” under VCS guideline version 4.0 and VCS standard version 4.1. The objective of this verification activity is to have an independent third party for the assessment of the project design, monitoring report and Final Verification report and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- the project's baseline is assessed against “ACM0002 version 7.0”
- the project's monitoring plan is assessed against “ACM0002 version 7.0”

¹ As per VCS-2 guidelines

- the projects compliance with, the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline version 4.0 and VCS standard version 4.1
- CDM Validation and Verification Standard for project activities, version 03.0
- CDM Project Standard for project activities, version 03.0
- CDM project cycle procedure for project activities, version 03.0
- VCS guideline, version 4.0
- VCS standard, version 4.1

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

The scope of the verification is the independent and objective review of the monitoring report (MR). The MR is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board and VCS executive board, including the approved baseline and monitoring methodology. The verification was based on the guidance given in the CDM Validation and Verification Standard for the project activities, version 03.0, review against registered PD and Final Validation report, CDM Project Standard for project activities, version 03.0; CDM Project Cycle Procedure for project activities, version 03.0 and VCS program guideline version 4.0 and standard version 4.1.

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

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

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

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (Hereinafter referred as Applus+ Certification) has been appointed by “Bilgin Güç Santralleri Enerji Üretim A.Ş.” to perform the 4th periodic verification of the project entitled “DARICA-1 99 MW Hydro Power Plant” under VCS guideline version 4.0 and VCS standard version 4.1. The objective of this verification activity is to have an independent third party for the assessment of the project design, monitoring report and final verification report and to ensure a thorough assessment of the proposed project activity against the applicable CDM and VCS requirements. In particular;

- the project's baseline is assessed against “ACM0002 version 7.0”
- the project's monitoring plan is assessed against “ACM0002 version 7.0”
- the project's compliance with the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS guideline version 4.0 and standard version 4.1
- CDM Validation and Verification Standard for project activities, version 03.0
- CDM Project Standard for project activities, version 03.0
- CDM project cycle procedure for project activities, version 03.0
- VCS guideline, version 4.0
- VCS standard, version 4.1

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

1.2 Scope and Criteria

The scope is defined as an independent and objective review of the Monitoring report (MR) prepared as per the registered PD and registered approved methodology ACM 0002, version 7.0. The MR is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board and VCS standard Version 4.1 and guideline version 4.0, including the approved baseline and monitoring methodology ACM0002, version 7.0. The verification was based on the requirements in the CDM validation and verification standard for project activities, Version 03.0, CDM Project Standard for project activities, version 03.0, CDM project cycle procedure for project activities, version 03.0 and VCS program guideline version 4.0 and VCS standard version 4.1.

The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the Monitoring report. In line with Guidelines for Application of materiality in verifications, the verification team has conducted a complete verification of all the information presented in the monitoring report and data monitored as presented in the emission reduction calculation spread sheet. It invoices follows the paper trail back to the raw data such as meter reading records and invoices. There are no material errors, overestimation of ER, omission or misstatement. The verification team has reviewed all the documents like commissioning certificates, Monthly Meter Readings, electricity sales records etc.

1.3 Level of Assurance

The verification has been planned and organized to achieve a Reasonable Level of assurance as per the requirement of VCS. The entire documents checked/Power plant verification conducted to arrive at positive verification conclusions

1.4 Summary Description of the Project

The main purpose of this project activity is to generate clean form of electricity through Hydro power source. The project activity is run-of-river hydro power project, located on the Melet River in the Mesudiye District of Ordu Province in the Northern Black Sea region of Turkey. The generation capacity of the project was initially designed as 99 MW, however during the operation phase the capacity of the project was increased to 112.42 MW (2 x 56.21 MW turbines) and the generator capacity was increased to 110.32 MWe (2 x 55.16 MW). The increased capacity of the project has been verified with the “Energy Generation License” issued by Energy market Regulatory Authority (EPDK) dated: 22/06/2006 and found correct. The capacity of the project activity has been changed during the 1st monitoring period. The same has been verified by the assessment team from the 1st period verification report of RINA (Report No. 2010-DG-11-MD, issued date: 19/10/2011).

The 1st turbine was commissioned on 10/10/2009 and 2nd was on 23/12/2009. The Geo coordinate of power house is latitude 40° 43' 51 N and longitude 37° 51' 30 E

The Project activity is a new facility (Greenfield) and the electricity delivered by the project activity is exported to the national Turkish grid. The project will therefore displace an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The generated power is being fed to grid under an incentive mechanism with a purchase guarantee for the electricity produced by renewable energy plants in Turkey.

During the current monitoring period from 01/01/2013 to 31/12/2017(First and last date included) the project activity has supplied 1,132,269.60 MWh of electricity, and thus contributing to the GHG reductions 724,399 tCO₂e.

2 VERIFICATION PROCESS

2.1 Method and Criteria

Verification Process: The project assessment is based on the Clean Development Mechanism Validation and Verification Standard for project activities, version 03.0 and VCS standard Version 4.1 and VCS guideline, version 4.0 and is conducted using standard auditing techniques to assess the correctness of the information provided by the project participants. Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS project activity are appointed.

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

- I. A desk review of the monitoring Report against the registered PD;
- II. Follow-up interviews with project participant;
- III. The resolution of outstanding issues and the issuance of the final verification report and opinion.

The prepared verification report and other supporting documents then undergo an internal quality control at the HQ (Accredited office) before being submitted to the VCS executive board.

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

Appointment of the assessment team

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

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

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

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

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

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Jitendra Mohan Singh	LA/TE	YES	YES	NA	YES
Mr. Denny Xue	TR	YES	YES	NA	NA

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

Document review

The Monitoring Report version 1 submitted by the PP was reviewed against the approved methodology, registered PD, final validation report, previous verification report and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information. Furthermore, a cross-check between information provided and information from other sources has been done. A complete list of all documents and evidence material reviewed is included in this report below in Appendix 1.

Follow-up interviews

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

Resolution of Clarification and Corrective Action Request

The objective of this phase of the Verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for Applus+ Certification positive conclusion on the Monitoring report. The Corrective Action Requests and Clarification Requests raised by Applus+ Certification were resolved during communications between the Client and Applus+ Certification to guarantee the transparency of the verification process, the concerns raised and responses given are summarized below in the Appendix 2.

The final MR Version 04 dated 18/02/2022 submitted by PP serves as the basis for the final assessment presented. Additional changes to the project during the verification process are not considered to be significant with respect to the main CDM/VCS objectives. The CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country

Internal quality control

As final step of a verification of the final documentation including the final verification report and the checklist have to undergo an internal quality control by the technical review committee, i.e. each report has to be finally approved either by the head of the technical review committee or

the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one to avoid any conflict of Interest.

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

2.2 Document Review

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

2.3 Interviews

Due to ongoing COVID-19 pandemic situation, verification audit was conducted remotely via video conferencing on dated:25/10/2021. 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 and other relevant travel restrictions and guidance (for example, a requirement to self-isolate upon return). Moreover, 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, v4.1.

The VVB has taken alternative measures to reach reasonable level of assurance and conducted remote audit through Skype/Telephone with site personal & consultant (refer section 2.3) with the PP representative. This is also in line with the COVID-19 travel guidance for projects of VERRA².

Technical details & metering/monitoring arrangement verified through onsite photographs/name plates and calibration certificates shared by PP. All the documents were cross checked to ensure conservative estimation of emission reduction.

During the remote audit, the PP representatives were questioned about the implementation of the project activity. Several topics like the verification of commissioning date of meters, the generation, recording, and monitoring of the data and the error accountability were discussed. To cross check the information provided by PP, various documents like technical specifications, commissioning certificates, EPIAS records (screenshots) (used as main source for calculation of amount of net electricity generation), TEİAŞ Meter Protocols(for cross check), calibration certificates(Meter test report), etc. were also verified. The names of the persons interviewed during remote audit through zoom is given below;

² <https://verra.org/covid-19-travel-guidance/>

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Yenici	Funda	PP representative	25/10/2021 (Via zoom)	Project Implementation, JMR & invoicing procedure, calibration, grievance mechanism	Jitendra Mohan Singh
2.	Alkan	Osaman Firat	Plant Manager (PP representative)			
3.	Bilir	Irem	Carbon Consultant, Life Iklim ve Enerji Ltd. Sti..		Monitoring Report, Emission Reductions calculation	
4.	Demirtas	Ogulcan	Carbon Consultant, Life Iklim ve Enerji Ltd. Sti.			

2.4 Site Inspections

Duration of Remote Audit: 15/10/2021				
No.	Activity performed on-site	Site location	Date	Team member
1.	Assessment team checked the implementation of the project, Baseline emission, Emission reduction calculation, technical description of the project and Monitoring. Assessment team also checked that whether the monitoring plan as described in the VCS PD is actually practised onsite. Also assessment team checked any change in host country criteria which may affect the baseline of the project activity.	Remote Audit (via Zoom)	25/10/2021	Jitendra Mohan Singh

2.5 Resolution of Findings

The objective of this phase of the verification was to resolve the requests for corrective actions and clarification and any other outstanding issues which need to be clarified for LGAI Technological Center S.A. (Applus+ Certification)'s positive conclusion on the project design and Monitoring report. The Corrective Action Requests and Clarification Requests raised by LGAI Technological Center S.A. (Applus+ Certification) were resolved during communications between the Client and LGAI Technological Center S.A. (Applus+ Certification) to guarantee the transparency of the validation process, the concerns raised and responses given are summarized below in the Appendix 2.

The final MR Version 04, dated 18/02/2022 submitted by project participants serves as the basis for the final assessment presented. Additional changes to the project during the verification

process are not considered to be significant with respect to the main CDM/VCS objectives. The two CDM/VCS main objectives are the reduction of anthropogenic GHG emissions and the contribution of sustainable development to the host country.

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Project design document and Monitoring report	00	00	00
Description of project activity	01	01	00
Application of selected baseline and monitoring methodology and selected standardized baseline			
- Applicability of methodology and standardized baseline	00	00	00
- Deviation from methodology	00	00	00
- Clarification on applicability of methodology, tool and/or standardized baseline	00	00	00
Project boundary	00	00	00
Establishment and description of baseline scenario	00	00	00
Demonstration of additionality	00	00	00
Emission reductions	00	02	00
Calibration details	00	01	00
Monitoring plan	00	00	00
No Net harm assessment	00	00	00
Local stakeholder consultation	00	01	00
Others (please specify)	00	00	00
Total	01	05	00

The list of findings and their resolution is presented in Appendix 2 of this report.

2.5.1 Forward Action Requests

This is 4th periodic verification of the project activity and no FAR was raised from validation or previous verification.

2.6 Eligibility for Validation Activities

This section is not applicable for present verification, as Applus+ holds the necessary accreditation to perform validation activities under this Sectoral Scope

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

Project activity is not participated under other GHG programs. Hence, this section is not applicable for present verification. The same is confirmed by the PP during the remote audit. Assessment team also conducted independent review of website of other programs and confirms that project is not involved in any other kind of GHG trading. PP also has given a written declaration (Dated: 27/10/2021) that project has not claimed other form of GHG credit for the concerned monitoring period for the present verifications/monitoring period.

3.2 Methodology Deviations

The project activity used ACM0002 version 7.0 which is as per the registered VCS PD and thus no deviation is sought regarding the methodology. The project complies with all the requirement of the methodology and thus deviation to the methodology is not a requirement for the present project activity.

3.3 Project Description Deviations

PP had applied project description deviation in during 1st verification. The generation capacity of the project was initially designed as 99 MW, however during the operation phase the capacity of the project was increased to 112.42 MW (2 x 56.21 MW turbines) and the generator capacity was increased to 110.32 MWe (2 x 55.16 MW) which is verified by the assessment team with “Electricity Generation Licence” of project activity. The project description deviation was approved during the 1st periodic verification. Assessment team confirms that there is no changes in project design during the current monitoring period.

Now PP has requested another project description deviation. For the parameter EG_y (Net Electricity generated and delivered to the grid by the power plant in year y), the monitoring plan in the validated VCS PD implies the use of “Metering devices measuring the electricity generated at the exit of the plant and cross checked with invoices prepared for billing the transmission company”. However due to a regulatory change the invoices no longer contain data regarding the quantity of electricity produced. Therefore in lieu of the invoices, the data output of the official Market Financial Reconciliation Center (MFRC/PMUM) is utilised. The MFRC/PMUM is a unit within TEİAŞ that is responsible for the financial settlement system (on this and other grid-connected privately held power facilities in Turkey) by calculating amounts payable/receivable for market participants via a complex mechanism. The electricity generated is metered by TEİAŞ by two meters placed on the switchgear station, where the plant is connected to national grid. Those meters provide official data which is read and recorded monthly by TEİAŞ officers for invoicing (as of January 2012, this data recording is done automatically and processed by

MFRC/PMUM (Market Finance Reconciliation Centre). Till December 2011, an authorized person from TEİAŞ was coming to the project site to read the main meters and back up meters at the end of each month; and accordingly create a protocol which clearly stated the net electricity generation and plant's energy consumption values. Starting from January 2012, the meter data is recorded electronically. This new system is called OSOS (Automatic Meter Reading System). In this system, TEİAŞ is not coming to the site to read the meters but has a remote connection to the main meter which is still sealed at the project site. However, every month (till July 2012) project owner's representative went to TEİAŞ at the end of the month to take the originally signed hard copy of the meter protocol.

However, starting from August 2012, TEİAŞ no longer provide any originally signed hard copy but provides access to OSOS database from where the monthly generation details can be located. Thus, duly signed hard copies of the monthly meter protocols till the end of July 2012 and the screenshots of OSOS (Automatic Meter Reading System) which shows the monthly meter records from August 2012 are used to substantiate the electricity generation by the project activity.

The project description deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario for this monitoring period. Thus acceptable to VVB.

3.4 Grouped Project

The project does not involve any addition of new project activity and thus the project do not fall under grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

During the remote audit (via Zoom) with PP & Plant site Manager and subsequent document verification; commissioning Certificate, Monthly EPIAŞ screenshots meter readings, TEİAŞ Meter Protocols Reading, it was concluded that the project is implemented as per the instruction of the VCS PD and the same has been verified from the commissioning certificate. During the current monitoring period it was observed that no unforeseen situation evolved which can impact the operation of the project activity. The same was verified through the monthly generation records (EPIAS records) of the project activity.

Project location is confirmed by the assessment team through interview with PP and monitoring report. Assessment team also checked with the photograph of project site containing latitude and longitude of the project site and confirmed that the details as mentioned in the registered PD are correct. The Geo coordinate of turbine house is latitude 40° 43' 51 N and longitude 37° 51'30 E.

The technical specifications have been verified with the photographs of sites and name plates as well as with the technical specifications of hydro turbine. DARICA-1 99 MW Hydro Power Plant is a hydropower plant with total installed capacity of 112.42 MW consisting of two turbines each with an installed capacity of 56.21 MW and two synchronous generators with a total rated output of 112 MVA. The Project is constructed on the Melet River in the Mesudiye district, Ordu Province, 4 km Northeast of Topçam District, on the tail water downstream of the Topçam Hydroelectric Power Plant. The Melet River flows in a Northerly direction and has a length of ca. 165 km. The annual mean flow rate, fed by snow and rain water, is 27 m³/sec. The region has steep topography and the altitude of the catchment area extends to 1,469 meters. The river itself falls from 650 meters to 335 meters at the Project site. The technical specification of Turbine and generator is given below:

Turbines	
Turbine type	Vertical Francis Spiral Turbine
Number of units	2
Rated Speed	600 rpm
Generator	
Type	Synchronous Generator
No of Unit	2
Capacity	56 MVA
Power factor	0.9

Frequency	50 Hz
Rated speed	600
No. of Pole	10

The start date of the project activity (date on which the project reached financial closure) in line with the approved VCS PD are given below for all four units:

S. No.	Unit	Date of commissioning
1	Unit I	10/10/2009
2	Unit II	23/12/2009

Assessment team checked the commissioning certificate of all units and confirms that the commissioning dates are correct.

There are no changes in the project design and monitoring plan during this monitoring period. The same has been confirmed during interview with the O & M personal. It was found that the monitoring plan was implemented as per the requirement of the VCS PD & approved monitoring Plan and approved methodology ACM0002 version 7. The organisational role and responsibility as mentioned in the registered VCS PD is followed onsite. The calibration of energy meter is done as per the required frequency mentioned in the VCS PD. All the emergency preparedness as mentioned in the registered VCS PD is followed onsite and no discrepancies were found regarding the same.

The sustainable development goals outcomes and the actual results of the contributed sustainable development indicators by the project during the monitoring period has been discussed in Section 1.11 of MR.

It was observed during the verification process is that project is not registered in any other mechanism nor rejected by any other GHG program around the world.

The project is not involved in any other form of GHG emission program and VERs generated from this verification will not be used for other trading program to avoid any kind of double counting. The same is confirmed by the PP during the remote audit. Assessment team also conducted independent review regarding the same and found that the statement of the PP is accurate and project is not involved in any other kind of GHG trading for the present verifications/monitoring period.

The company name “Yapısan Elektrik Üretim A.Ş.” has been changed as Bilgin Güç Santralleri Enerji Üretim A.Ş. The same has been verified with the Turkish Trade Registry Gazette, dated:27-March-2019 . Yapısan Elektrik Üretim A.Ş. has transferred its rights to Bilgin Güç Santralleri Enerji Üretim A.Ş. Thus, the project proponent is now “Bilgin Güç Santralleri Enerji Üretim A.Ş.”

Further, Verification team confirms that “JP Morgan Ventures Energy Corporation was responsible for the previous verification processes of the Project”. For this monitoring period, carbon consultant of the Project, responsible of the project development, is Life İklim ve Enerji Ltd. Şti. Which is in line with the “Contract of the other entity with the VVB”.

The assessment team observed that the project is implemented is in line with the registered VCS PD and applied methodology. There is no deviation applied during this monitoring period. CL 01 and CAR 01 were raised during the verification process and closed successfully. Please refer below Appendix 2 for the detail closure of the CL and CAR.

Assessment team confirms following during the verification remote audit.:

1. Start date of the project is 10/10/2009. This is the date when project activity started emission reduction.
2. An undertaking letter dated: 27/10/2021 has been submitted by PP for no double counting with any other GHG program. PP also has given a written declaration that project has not claimed other form of GHG credit for the concerned monitoring period.
3. Assessment team confirms that this is the 4th monitoring under VCS and covers the activity from 01/01/2013 to 31/12/2017(inclusive of both dates). Thus, VCS crediting period should be maximum of 10 years till end date of crediting period. 10/10/2009 is the start date and 09/10/2019 will be the end date of the crediting period.

The GHG credits from 01/01/2013 to 31/12/2017 will be claimed under VCS only. At any point of time during the crediting period, the project proponent will abide by the “Double Counting”.

4. Assessment team checked and found that the Project proponent of the project activity is as below for the current monitoring period:

Organization name	Bilgin Güç Santralleri Enerji Üretim A.Ş.
Contact person	Funda Yenici
Title	Electricity Trading Specialist
Address	Kuleli Sokak No.87/1 G.O.P. Çankaya/Ankara TURKEY
Telephone	+90 (0312) 446 30 23
Email	contact@bilgin.com.tr

5. Assessment team also checked the details of other entity and found correct. The details are as below:

Organization name	Life İklim ve Enerji Ltd. Şti.
Role in the Project	Project Developer
Contact person	İrem Bilir
Title	Carbon Consultant
Address	Oğuzlar Mahallesi, 1377. Sk. No:19, 06520 Çankaya/Ankara/ TURKEY
Telephone	+90 312 481 2142
Email	irem.bilir@lifeenerji.com

6. The quantified emission reduction calculation for the monitoring period is correct and conservative. Assessment team also compared actual VERs with the estimated VER and found

that the actual VERs is 724,399 tCO₂e which is 31% lower than the estimated emission reduction 1,049,185 tCO₂e (209,722 tCO₂e/ 365 days*1826 days) during this monitoring period which is due to climatic conditions and low PLF attained by the wind power plant during the current monitoring period.

4.2 Safeguards

4.2.1 No Net Harm

No potential environment or socio-economic matter was found during the documents review of VCS PD and grievance register etc. The project is renewable energy project and thus no negative impact observed due to project activity. There same has been verified with the EIA positive certificate issued on 28/07/2010. Projects activity not only contributes emission reduction through use of renewable resources and creating job opportunities.

4.2.2 Local Stakeholder Consultation

All the stakeholders are happy with the implementation and operation of the project activity and no negative comments envisaged for the project activity. There was no change in project description from the VCS PD during current monitoring period. However, project description deviation was approved during 1st periodic verification. PP has submitted a declaration signed by the village head as well as face to face communication with residents has been maintained, For stakeholder consultation, there is a logbook sent to the coffeeshouse for comment which include necessary information including phone number and email address of the project owner. Further, company's phone line at site was available 7/24 Hrs during the monitoring period as a part of ongoing communication with stakeholders in line with clause 3.16.17 of VCS Standard, ver. 4.1 and appropriate actions taken time to time by PP as confirmed during the remote audit and document review. Further, PP has also conducted a stakeholder meeting on Dated:25/10/2021 which confirms the ongoing communication process with stakeholders. No negative comment or feedback received. CAR 02 was raised on this section and closed successfully. Please refer Appendix 2 for further details.

4.3 AFOLU-Specific Safeguards

Not applicable

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Means of verification	The verification team assessed whether the data and calculations of GHG emission reductions achieved resulting from the MR. The verification team has checked whether calculations of baseline GHG emissions, project GHG emissions and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the monitoring plan of the VCS
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	PD and MR.
Findings	CAR 03 and CAR 04 were raised on this section and closed successfully. Please refer Appendix 2 for further details
Conclusion	Baseline emission: The baseline Emissions for a given year is calculated by multiplying the energy baseline (EB) with the regional grid emission factor of the grid. Formula Used: $BE_y = (EG_{y-} - EG_{\text{baseline}}) \times EF_{\text{grid,CM,y}}$ Where BE_y = Baseline Emissions (tCO₂/year) EG_{y-} = Electricity supplied by the project activity to the grid (MWh). Since the project activity was installation of new power plant, hence EG_{baseline} was considered zero. Hence: $BE_y = EG_y \times EF_{\text{grid,CM,y}}$ $EF_{\text{grid,CM,y}}$ = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the “Tool to calculate the emission factor for an electricity system” (tCO₂/MWh) Parameters available at validation and data fixed Ex-ante: The baseline emission factors are taken ex-ante in line with the registered VCS PD as well as cross checked with validation report and found correct. Combined margin CO₂ emission factor ($EF_{\text{grid,CM,y}}$) is equal to 0.640 tCO₂/MWh. The calculation approach was in line with the VCS PD. Parameter which are used to calculate grid emission factors ($EF_{\text{grid,OM,y}}$, $EF_{\text{grid,BM,y}}$, $EF_{\text{grid,CM,y}}$) Cap_{BL} and A_{BL}, FCi,y, $NCVi,y$, $EF_{CO2,I,y}$, $EF_{CO2,y}$, EG_y and $G_{m,y}$ only. As project activity was installation of new hydro power, therefore in accordance with the applied methodology the value of Cap_{BL} and A_{BL} was considered zero. The Operating Margin ($EF_{\text{grid,OM,y}}$) is calculated using three years data:2004, 2005 and 2006 which is calculated = 0.655 tCO₂/MWh and fixed ex-ante for the entire crediting period of 10 years. Build Margin emission factor of the grid is The Build Margin emission factor $EF_{\text{grid,BM,y}}$ is calculated as the generation-weighted average emission factor of a sample of power plants m for a specific year 2006. PP has sourced Build Margin Emission factor from the Registered PDD. The Build Margin emission factor ($EF_{\text{grid,BM,y}}$) is calculated to be = 0.624 tCO₂/MWh Combined Margin Emission Factor ($EF_{\text{grid,CM,y}}$) is calculated as follows: $= (EF_{\text{grid,OM,y}} \times 0.5) + EF_{\text{grid,BM,y}} \times 0.5$ $= 0.655 \text{ tCO}_2/\text{MWh} \times 0.5 + 0.624 \text{ tCO}_2/\text{MWh} \times 0.5$ $= 0.640 \text{ tCO}_2/\text{MWh}$ Grid emission factor i.e. $EF_{\text{grid,CM,y}}$ is fixed ex-ante for the crediting period. .

Verification team confirms that the combined emission factor which has been sourced from the VCS PD are correct.

Parameter and data monitored:

As per the registered monitoring plan and requirement of the registered methodology following parameters needs to be monitored:

EGy (Quantity of net electricity generation supplied by the project plant/unit to the grid in year y).

The amount of electricity is measured by grid electricity main meter and backup meter (TEIAS meter protocol). TEIAS, using a GSM device, reads the electricity generation / imports remotely using a GSM device and reads the electricity export and import imports remotely. The PP has sourced the data from the records of TEIAS meter protocol. The generated electricity generated by the project activity is supplied to nation grid of Turkey. The electricity export and import are measured by following meters:

Name	Serial Number	Brand & Model	Accuracy Class
Main Meter 1	361509	ELSTER & A1500	0.2S
Back-up Meter 1	361510	ELSTER & A1500	0.2S
Main Meter 2	364713	ELSTER & A1500	0.2S
Back-up Meter 2	364714	ELSTER & A1500	0.2S

Net electricity supplied to the grid is calculated by subtracting the amount of electricity imported from the grid from the electricity exported to the grid.

During this monitoring period, quantity of net electricity generation supplied by the project plan/unit is 1,132, 269.60 MWh which is verified by the assessment team with monthly of TEIAS meter protocol records.

Assessment team checked the electricity exported and Imported with the TEIAS meter protocol records and the same is crosschecked with the monthly EPIAŞ screenshots. PP has used conservatives' values for emission reductions calculation.

Fossil Fuel Use

During the current monitoring period the auxiliary diesel generator's consumption is monitored by volume of fuel consumed which is as per monitoring plan in registered VCS PDD. 76.89 tonnes Diesel Fuel was used in diesel generator. The same has been checked with the plant logbook and cross checked with the fuel invoices.

Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin (OM) and build margin (BM) factors.

Baseline emissions (tCO₂e)

$$\begin{aligned} \text{BEy} &= 1,132,269.60 \text{ MWh} \times 0.64 \text{ tCO}_2\text{e/MWh} \\ &= 724,399 \text{ tCO}_2\text{e (round down values)} \end{aligned}$$

Project Emission:

	The auxiliary diesel generator's consumption is monitored by volume of fuel consumed. The project emissions is calculated in accordance with the "Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion" (Version 03).		
	Parameter	Value	Unit
	Total Diesel Consumption	90.996	L
	Density of Diesel	0.845	kg/L
	M = dV	76,892	kg
	FC_{i,j,y}	76.89	Ton
	NCV_{i,y}	43.3	TJ/kt
	EF_{CO₂,i,y}	74.8	kgCO ₂ /TJ
	COEF_{i,y}	3.24	tCO ₂ /tonne
	PE	251.00	tCO ₂
Leakage: As per registered VCS PD and applied methodology ACM 0002, version 7. The leakage emission are considered zero. Thus, Emission Reductions are: The emission reductions (ER_y) by the Project activity during a given year y is the difference between baseline emissions (BE_y) and project activity emissions (PE_y) as follows $ER_y = BE_y - PE - LE_y$ $= 724,650 - 251 - 0$ $= 724,399 \text{ tCO}_2\text{e (rundown value)}$ Verification team confirms that the monitoring has been carried out in accordance with the monitoring plan contained in the registered VCS PD. Assessment team confirmed that the GHG emission reductions and removals have been quantified correctly in line with the registered VCS PD.			

³ Please see:

https://tprstaticfilessa.blob.core.windows.net/assets/uploads/urunler/TPR.%C3%9CPM.%C3%9CSP.0403_DE_17%20%20%20%C3%9CR%C3%9CN%20SPES%C4%B0F%C4%B0KASYONU%20MOTOR%C4%B0N.pdf

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

Means of verification	The verification team checked the break down log for the monitoring period. During the verification remote audit, the energy meters are also checked. The Calibration details of the monitoring meters are also checked with calibration certificates.																				
Findings	CAR 05 was raised on this section and closed successfully. Please refer Appendix 2 for further details																				
Conclusion	The generated electricity fed to grid will be measured by two main meter and two backup meter. The details of meters located at power plan are as follows: <table><tr><th>Name</th><th>Serial Number</th><th>Date of last calibration</th><th>Validity of calibration</th></tr><tr><td>Main Meter 1</td><td>361509</td><td>06/02/2008</td><td>05/02/2018</td></tr><tr><td>Back-up Meter 1</td><td>361510</td><td>06/02/2008</td><td>05/02/2018</td></tr><tr><td>Main Meter 2</td><td>364713</td><td>02/04/2008</td><td>01/04/2018</td></tr><tr><td>Back-up Meter 2</td><td>364714</td><td>02/04/2008</td><td>01/04/2018</td></tr></table> As per the VCS PD, the calibration frequency of meters is once in 10 years. This is in accordance with the article 9.b, Regulation on Inspection of Meters and Metering Devices” published on official gazette No:22000 dated 24/07/1994⁴. Assessment team has checked the calibration certificate of meters and confirms that meters are calibrated as per calibration frequency i.e. one in 10 years mentioned in registered VCD PD. There is no delay in calibration. The accuracy of meters is deemed appropriate and in compliance with the national regulation on Inspection of Meters and Metering Devices” published on official gazette No:22000 dated 24/07/1994. During conference call on zoom with PP representatives, it was confirmed that the meters are in place and functions well and there is no brake down has been recorded. It is reported that the data will be kept for 2 years following the end of the crediting period or till the last issuance of VERs for the project activity whichever occurs later. The responsibilities and authorities of project management, data handling and recording, measurement methods and QA/QC procedure have been systematically established and formalized and the same was verified during the remote audit. Remote audit and interview with site personnel also confirms that the operational and organizational chart as mentioned in VCS PD is as per the	Name	Serial Number	Date of last calibration	Validity of calibration	Main Meter 1	361509	06/02/2008	05/02/2018	Back-up Meter 1	361510	06/02/2008	05/02/2018	Main Meter 2	364713	02/04/2008	01/04/2018	Back-up Meter 2	364714	02/04/2008	01/04/2018
Name	Serial Number	Date of last calibration	Validity of calibration																		
Main Meter 1	361509	06/02/2008	05/02/2018																		
Back-up Meter 1	361510	06/02/2008	05/02/2018																		
Main Meter 2	364713	02/04/2008	01/04/2018																		
Back-up Meter 2	364714	02/04/2008	01/04/2018																		

⁴ <http://www.mevzuat.gov.tr/Metin.Aspx?MevzuatKod=7.5.6381&MevzuatIliski=0&sourceXmlSearch>

	site practice and thus assessment team confirms that the details are correct. No unforced error observed.
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4.6 Non-Permanence Risk Analysis

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Not applicable	Not applicable	Not applicable	Not applicable

5 VERIFICATION CONCLUSION

Applus+ Certification has been engaged by Bilgin Güç Santralleri Enerji Üretim A.Ş. to perform the 4th periodic verification of the “DARICA-1 99 MW Hydro Power Plant”.

The management of the project participant/owner is responsible for the preparation of the GHG emissions data and the reported/estimated GHG emissions reductions on the basis set out within the project’s Monitoring Plan in the VCS PD and MR and the approved methodology ACM0002 version 7.

Our Verification approach was based on the requirements as defined under the Kyoto Protocol, Marrakesh accord, as well as those defined by the CDM Executive Board and VCS Standard version 4.1. Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is operated as planned and described in the project document;
- the monitoring plan is as per the applied methodology;
- the monitoring process in Monitoring Report is as per the PD
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan
- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately”;
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.
- A reasonable level of assurance was achieved during the verification.
- No limitation observed for the present verification

Verification period: From 01/01/2013 to 31/12/2017 (first and last date included).

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

Year		Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01/01/2013	to	126,627	67	0	126,560
31/12/2013					
01/01/2014	to	79,833	51	0	79,782
31/12/2014					
01/01/2015	to	170,097	50	0	170,047
31/12/2015					
01/01/2016	to	197,986	56	0	197,930
31/12/2016					
01/01/2017	to	150,107	27	0	150,080
31/12/2017					
Total		724,650	251	0	724,399

The estimated emission reduction to be achieved from the project activity for the current monitoring period⁵ is 1,049,185 tCO₂e, whereas actual emission reductions achieved are 724,399 tCO₂e, which is 31% lower than the estimated emission reductions. This is due to climatic conditions and low PLF attained by the plant during the current monitoring period.

⁵ This estimation is based on annual (365 days) estimation of ER and current monitoring period days i.e. 1826 days.

APPENDIX I: DOCUMENTS REVIEWED DURING VERIFICATION

No.	Author	Title	References to the document	Provider
1.	NA	Commissioning certificate	Commissioning of the Hydro turbine unit	Project participant
2.	NA	Contract between Project proponent and VVB for verification work	Contract between Project proponent and VVB for verification work	Project participant
3.	NA	Technical specifications	Technical specifications of turbines	Project participant
4.	NA	Electricity Production License issued by Energy Market Regulatory Authority (EMRA)	Generation License dated 22/06/2006	Project participant
5.	NA	VCS Project Description	Version 04 Dated:18/04/2009	Project participant
6.	NA	Verification Report of 3 rd Periodic Verification (Report ID 8000417042- 12/634) by TÜV NORD CERT GmbH	Version 01 Dated:01/02/2013	VERRA Web site
7.	NA	Initial Monitoring report Final Monitoring Report	Version 01, dated 27/09/2021 Version 04, dated 18/02/2022	Project participant
8.	NA	Emission Calculation sheet (Initial)	Version 1, dated 27/09/2021	Project participant
9.	NA	Emission Calculation sheet (Final)	Version 03, dated 03/11/2021	Project participant
10.	NA	Tools/ guidelines used in the project activity - UNFCCC Methodology: ACM0002 version 13.0.0 - VCS verification report template Version 4.0 - VCS Standard, version 4.1	UNFCCC CDM web site VERRA website	UNFCCC & VERRA
11.	NA	Calibration details of the project activity undergoing verification	Calibration certificate	Project participant
12.	NA	Monthly TEİAŞ Meter Protocols	TEİAŞ Meter Protocols data from 01/01/2013 to 31/12/2017	Project participant
13.	NA	Monthly EPIAŞ Screenshots for cross check	Data from 01/01/2013 to 31/12/2017	Project participant
14.	NA	Diesel consumption /purchase receipts	Data from 01/01/2013 to 31/12/2017	Project participant
15.	NA	Declaration dated 27/10/2021 from PP for Participation under Other GHG Programs	VCS Declaration dated: 27/10/2021	Project participant
16.	NA	Village head declaration of ongoing stake holder consultation	Village head declaration dated 01/11/2021	Project participant

No.	Author	Title	References to the document	Provider
17.	NA	Single Line Diagram	-	Project participant
18.	NA	Logbook/site photographs	-	Project Participant
19.	NA	EIA positive Certificate	28/07/2010	Project Participant
20.	NA	Turkish Trade Registry Gazette	Dated:27-March-2019	Project Participant
21.	NA	Technical Specification of generator	-	Project Participant

APPENDIX 2: CORRECTIVE ACTION REQUESTS, CLARIFICATION REQUESTS AND FORWARD ACTION REQUESTS (CAR/CL/FAR)

CL ID	01	Section no.	4.1	Date: 26/10/2021
Description of CL				
During desk review, assessment team found that PP has not submitted the declaration regarding avoidance of double counting of emission reductions in the other GHG programmes. PP is requested to clarify the same.				
Project participant response				Date: 03/11/2021
Declaration which includes confirmation the avoidance of double counting of emission reductions in the other GHG programmes has been signed by the deputy general manager.				
Documentation provided by project participant				
Declaration document is provided to VVB now.				
DOE assessment				Date: 05/11/2021
PP confirmed that project activity has not registered any other GHG program and also submitted the declaration regarding avoidance of double counting of emission reductions in the other GHG programmes. CL closed.				

CAR ID	01	Section no.	4.1	Date: 26/10/2021
Description of CAR				
During review of MR, verification team observed following inconsistencies:				
- Date Format in MR are not in line with the guidance mentioned in VCS MR template - The limited of summary description of the implementation status of the project in Section 1.1 is not in line with the guidance in VCS MR template. - Line diagram provided in Section 3.1 of is not clear - Title of Appendix provided in MR is not clearly mentioned. Corrective action is sought.				
Project participant response				Date: 03/11/2021
- Format of the dates has been revised. - Summary description of the implementation status of the project was revised as it was requested. Now it is in line with the guidance in VERRA template. - Line diagram is now provided in Section 3.1. - Title of Appendix is now provided in MR.				
Documentation provided by project participant				
Monitoring Report				
DOE assessment				Date: 05/11/2021
- Format of dates has been corrected in line with the requirement of VCS MR template. - PP has revised the summary description in line with the VCS MR template.				

- Line diagram of metering arrangement is now added in Section 3.1 of revised MR. - PP has now added the title of Appendix in revised MR.
CL Closed.

CAR ID	02	Section no.	4.2.2	Date: 26/10/2021
Description of CAR				
In Section 2.2 PP has mentioned the local stakeholder consultation held during the project construction stage. However, PP has not described the process for, and the outcomes from, ongoing communication with local stakeholders as per requirement of Para 3.16.3 and 3.16.4 of the VCS standard V.4.1. PP is requested to clarify the same and also provide supporting evidence				
Project participant response				Date: 03/11/2021
Requested information was provided for the ongoing communication with local stakeholders in section 2.2 of the MR. A supporting document stating that the contact information is available has been signed by the Headman. A logbook has been sent to the coffeehouse for providing stakeholders to comment if needed. On-site photos showing that the logbook was sent is now provided to VVB. In addition, document indicating that stakeholders can reach the plant manager in case of need, and that there has been no negative comment so far has been signed by the Pinarlı Youth Association President.				
Documentation provided by project participant				
Headman Letter Logbook on-site photos Pinarlı Youth Association President Letter				
DOE assessment				Date: 05/11/2021
PP has submitted signed document by village head dated 04/10/2021 which confirms ongoing communication with Local Stakeholder and the same is in line with the requirement para 3.16.3 and 3.16.4 of the VCS standard V.4.1. Thus, CAR is closed.				

CAR ID	03	Section no.	4.4	Date: 26/10/2021
Description of CAR				
During the review of monitoring report, it was observed that the value of OM and BM is not provided in MR. PP is requested provide the information in monitoring report. Further, monitoring parameters considered in monitoring report are not consistent with the VCS PD. PP is requested to clarify the same.				
Project participant response				Date: 03/11/2021
The value of OM and BM which were calculated in register PD is now provided in section 5.4 Net GHG Emission Reduction and Removals part in the MR. The registered PD is given as a reference for these values.				
Documentation provided by project participant				
Monitoring Report				
DOE assessment				Date: 05/11/2021

PP has now included the ex-ante value of OM, BM and CM in Section 5.4 of revised MR. However, as per registered VCS PD, only two monitoring parameter i.e. EG_y and “Fossil Fuel Use” are mentioned for monitoring but in MR, PP has included more than two parameter. CAR Open.	
Project participant response	Date: 08/11/2021
Parameters other than these two parameters, which are EG_y and “Fossil Fuel Use”, has been omitted from the MR to provide consistency with VCS PD.	
Documentation provided by project participant	
Monitoring Report (Report ID: 03)	
DOE assessment	Date: 09/11/2021
PP has not rectified the monitoring parameter in line with the registered VCS PD in Section 5.4 of revised MR. CAR closed.	

CAR ID	04	Section no.	4.4	Date:26/10/2021
Description of CAR				
- As per registered VCS PD, Data will be monitored continuously by redundant metering devices, which will provide the data for the monthly invoicing to TEİAŞ. Monthly invoices will be used for cross-check. However, PP has not provided the information in ER sheet transparently. Also, invoices for cross check are not submitted. PP to clarify the same. - Further, PP is requested to clarify how data used for calculation of emission reductions are conservative				
Project participant response				Date: 03/11/2021
EPIAŞ screenshots and TEİAŞ meter protocols have been used for emission reduction and crosscheck. TEİAŞ meter protocols has already been provided, and EPIAŞ screenshots are now provided to VVB. ER excel sheet has been revised to be conservative, and it is now provided to VVB.				
Documentation provided by project participant				
EPIAŞ Screenshots				
DOE assessment				Date: 05/11/2021
- PP clarified that TEİAŞ data is used for cross check and the same has been added in Emission reduction calculation sheet. - PP has calculated the minimum of two data sources and used for emission reduction calculation which is conservatives and thus accepted by assessment team. CAR closed.				

CAR ID	05	Section no.	4.5	Date:26/10/2021
Description of CAR				
PP has submitted the meter test protocols and found that the certificate is issued on 18/03/2013. However, calibration date of meter is dated in 2008. PP is requested to clarify the same.				
Project participant response				Date: 03/11/2021
The meters test protocols are considered different from the meters initial test report. The meters test protocols are carried out at certain intervals depending on the request of the project owner. These				

protocols are dated in 2013, 2014, 2015, 2016 and 2017 during the Monitoring Period. However, the meters initial test report is dated 06-02-2018 in the previous MR. According to the national regulations and legislations, “The meter devices will be calibrated once in 10 years to ensure compliance with the national regulations and legislations of “article 9.b, Regulation on Inspection of Meters and Metering Devices” published on official gazette No: 22000 dated 24.07.1994.” and calibration of meters will be valid 10 years after the meters are sealed by authorized institutions. After 10 years, it needs to be repeated and recalibrated. Therefore, valid till date was stated as 01-04-2018 while last calibrated date was 02-04-2008. However, the meters initial test report has been requested from the project owner to verify this information, and dates have been revised. Also, documents are provided to VVB now.

Documentation provided by project participant

Meters Initial Test Report

DOE assessment

Date: 05/11/2021

The calibration dates have been corrected in revised MR. Assessment team has also checked the previous verification and confirms that calibration of meters are in compliance with the calibration frequency in monitoring plan of VCS PD. CAR closed

APPENDIX 3: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interview(s)	Verification findings
1.	Lead Auditor/Technical Expert	OR	Singh	Jitendra Mohan	TQC-Outsourced entity	Yes	No	Yes	Yes

Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer (TR)	EI	Xue	Denny	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustin	Applus+ Certification

Short CVs of the Team:

1. **Jitendra Mohan Singh**, has done Advanced MSc in Sustainable Energy Systems and Management from International Institute of Management, University of Flensburg, Germany and B.Tech. in Agricultural Engineering from Allahabad University, India. He has more than (18) years of working experience in different organizations like IARI, IIT Delhi, ICAR, IRADe, CAPART, SMEC and Perenia Carbon and M B Power (Madhya Pradesh) Ltd. in the area of Agriculture, Energy & Environment and Climate Change. He also worked on contract basis (adhoc) as a RIT expert in UNFCCC from 2010 to 2013. Currently, he is associated with True Quality Certifications Private Limited and is Applus+ Certification to carry out validation and verification related to GHG reductions projects.

2. **Denny Xue** has a Bachelor's Degree on Thermal Energy Engineering and Master's Degree on Environmental Engineering. He has more than 10 years of experience on CDM project development. Before he joined Applus+ LGAI, he has been worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development. He is working with Applus+ since 2011 carrying out Validation and verification for CDM/GS/VCS project under scope 1 and 13 as auditor, lead auditor, technical expert and technical reviewer.

APPENDIX 4: ABBREVIATIONS

Abbreviations	Full texts
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction(s)
CL	Clarification request
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reductions
EPIAS	Energy Market Management Inc
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GWP	Global Warming potential
PP	Project Participant