VERIFICATION REPORT OF THE CEVIZLIK RUN-OF-RIVER HYDROELECTRIC POWER PLANT

BUREAU VERITAS CERTIFICATION

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Project Title	The Cevizlik Run-of-River Hydroelectric Power Plant
Version	02

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Summary:

Bureau Veritas Certification has made the initial and 1st periodic verification of the "The Cevizlik Run-of-River Hydroelectric Power Plant", VCS Project of Akim Enerji Uretimi San. ve Tic. A.S. located on the Iyidere River Basin in the Eastern Black Sea Region of Turkey, within the province of Rize and applying the methodology ACM0002 Version 10, on the basis of UNFCCC criteria for the CDM Methodology, Voluntary Carbon Standard Version 2007.1 as well as criteria given to provide for consistent project operations, monitoring and reporting.

The verification scope is defined as a periodic independent review and ex post determination by the Designated Operational Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CR, CAR and FAR), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in validated and registered project design documents. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the project is already generating GHG emission reductions. The GHG emission reduction is calculated without material misstatements, and the VER issued totalize 199,710.84 tons of CO_2eq for the monitoring period between 29/05/2010 – 30/06/2011.

Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the valid and registered project baseline and monitoring, and its associated documents.

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Abbreviations List

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DSI	General Directorate Of State Hydraulic Works (Devlet Su Isleri Genel Mudurlugu)
DOE	Designated Operational Entity
EMRA	Energy Market Regulatory Authority (EPDK – Enerji Piyasasi Denetleme Kurulu)
GHG	Green House Gas(es)
HEPP	Hydroelectric Power Plant
MP	Monitoring Plan
PD	Project Description
PP	Project Participant
TEIAS	Turkish Electricity Transmission Company (Turkiye Elektrik Iletim A.S.)
UNFCCC	United Nations Framework Convention for Climate Change
VCS	Voluntary Carbon Standard
VCU	Voluntary Carbon Unit
VER	Voluntary Emission Reductions
VVM	Validation and Verification Manual

1 INTRODUCTION

1.1 Objective

Verification is the periodic independent review and ex post determination by the DOE of the monitored reductions in GHG emissions during defined verification period. The objective of verification can be divided in Initial Verification and Periodic Verification. The verification is based on criteria set by Voluntary Carbon Standard Version 3.0, the CDM Methodology ACM0002, Version 10 requirements and the country criteria.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan, monitoring report and other relevant documents. The information in these documents is reviewed against Voluntary Carbon Standard Version 3.0, the CDM Methodology ACM0002 Version 10 requirements and the country criteria.

The verification is not meant to provide any consulting towards the Akim Enerji Uretimi San. ve Tic. A.S. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 Level of assurance

The level of assurance of the Verification Report is defined as high.

1.4 Summary Description of the Project

The project activity involves the installation of a 92.96 MW hydroelectric power plant on the Iyidere River Basin in the Eastern Black Sea Region of Turkey, within the province of Rize. In the powerhouse, two vertical Francis type Alstom turbines were installed each with the capacity of 51.21 MW; the total capacities of the turbines are 92.96 MW. The installed capacity of the turbines is 51.21 MW if only one turbine works. The project has one energy tunnel and one penstock to serve the two turbines. In the case of two turbines work together, there are some hydraulic losses due to water speed, the total guaranteed mechanical output diminishes to 92,96 MW. The installed capacities of the turbines were verified through the Provisional Acceptance Certificate dated 28/05/2010 that is given by the Ministry of Energy and Natural Resources.

The project activity generates electricity to supply the national grid using a renewable resource. The project activity reduces greenhouse gas emissions that would have otherwise occurred in the absence of the project activity by avoiding electricity generation from fossil fuel sources. Since the project producing electricity from a renewable source, it provides emission reduction for the grid, which is mainly fed by fossil fuels.

2 VALIDATION PROCESS, FINDINGS AND CONCLUSION

2.1 Validation Process

Please refer to the VCS Validation Report dated dd.21/06/2010 by Bureau Veritas and submitted to VCSA.

2.2 Validation Findings

2.2.1 Gap Validation

Not applicable.

2.2.2 Methodology Deviations

There is not any deviations in the monitoring plan of PD.

2.2.3 New Project Activity Instances

Not applicable.

2.3 Validation Conclusion

The Cevizlik Run-of-River Hydropower Plant was successfully validated to VCS 2007.1 as stated in the Validation Report dated dd. 21/06/2010 prepared by Bureau Veritas and submitted to VCSA.

3 VERIFICATION PROCESS

3.1 Method and Criteria

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was for the project, according to the version 01.2 of the Clean Development Mechanism Validation and Verification Manual, issued by the Executive Board at its 55 meeting on 30/07/2010. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a VCS project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed verification protocol is enclosed in Appendix A to this report.

To address Bureau Veritas Certification corrective action requests and clarification requests, the monitoring report is revised, Monitoring Report version 03 dated 06/10/2011 being the last version, which was submitted to the verification team on 06/10/2011. After further clarifications, all corrective action requests and clarification requests were closed on 10/10/2011. The verification of the Project resulted in 3 Corrective Action Requests and 10 Clarification Requests. The verification consisted of the following steps:

- A desk review of the of the project design, baseline and monitoring plan, and the monitoring report which were submitted by the client. The client uses ACM0002, Version 10 that is

approved during validation of the project. Generated electricity parameter was the only parameter that has been monitored as in line with the monitoring plan. It is confirmed that monitoring plan is correctly applied during verification of this project.

- A visit to the project site was done on 03.08.2011. During site visit all production records, accuracy of the monitoring equipment, management system have been verified. It was verified during the site visit that the installed equipments are in line with the validated PD.
- Interviews with the personnel of Akim Enerji Uretimi San.
- Clarification, Corrective Action (CL, CAR) requests regarding to the gained information during site visit and desk review.
- Resolution of CLs, CARs and FARs by the client.
- Preparation of the Verification Report.

3.2 Document Review

The verification of the project documentation provided by the project participant is based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the monitoring report submitted to the DOE. Qualitative information comprises information on internal management controls, calculation procedures, procedures for transfer of data, frequency of emissions reports, and review and internal audit of calculations.

In addition to the monitoring documentation provided by the project participants, the DOE reviews:

(a) The registered PDD, including the monitoring plan and the corresponding validation report;

(b) Previous verification reports, if any;

(c) Previous monitoring reports, if any;

(d) The revised monitoring plan, if any, and its impact on the current verification;

(e) The applied monitoring methodology;

(d) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;

(e) Any other information and references relevant to the project activity's resulting emission reductions (e.g. IPCC reports, data on electricity generation in the national grid or laboratory analysis and national regulations).

3.3 Interviews

On 03.08.2011 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Akım Enerji were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Akım Enerji.	➢ Management and Operational Structure ➢ Sales of Electricity ➢ Trainings ➢ Management of Project Activity ➢ Emission Reduction Calculation

3.4 Site Inspections

During site visit, the monitoring parameters and implementation status of the project has been checked. During site visit it is confirmed by the verification team that the project activity implemented and monitored as per the registered PDD.

3.5 Resolution of Any Material Discrepancy

Not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project is implemented in accordance with the registered project design document that was verified during the initial and first periodic verification.

The project site is located at Iyidere River Basin in the Eastern Black Sea Region of Turkey, within the province of Rize. It was verified during the site visit that the project includes two vertical Francis type Alstom turbines with the capacity of 51.21 MW and the total capacities of the turbines are 92.96 MW. The installed capacity of the turbines is 51.21 MW if only one turbine works. The project has one energy tunnel and one penstock to serve the two turbines. In the case of two turbines work together, there are some hydraulic losses due to water speed, the total guaranteed mechanical output diminishes to 92,96 MW. The installed capacities of the turbines were verified through the Provisional Acceptance Certificate dated 28/05/2010 that is given by the Ministry of Energy and Natural Resources.

The technical properties of the turbines are in accordance with description in the validated PD. The location of the project activity was verified via GPS device during the site visit. The coordinates of the project activity are in accordance with the validated PD.

The parameters required by the monitoring plan and the way the verification team was verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters including the values in the monitoring reports) is described below. The three parameters are defined at the registered monitoring plan:

EGPJ,y : Quantity of net electricity generation supplied by the project to the grid in year y

CapPJ : Installed capacity of the hydro power plant after the implementation of the project activity

APJ : Area of the regulation pond measured in the surface of the water after the implementation of the project activity when the reservoir is full

Quantity of net electricity generation supplied by the project to the grid in year y (EGPJ,y)

Electricity generation was verified through the monthly settlement notification of PMUM that are the basis of the electricity sales invoices and crosschecked with the OSF forms (Measurement System Recording Form in Turkish "Ölçüm Sistemi Kayıt Formu"). All PMUM records and OSF forms were provided for each month that are under the monitoring period (29/05/2010 – 30/06/2011). The electricity generation and internal consumption figure were read from the meters and the monthly meter reading protocols were prepared by the authorized TEIAS personnel, the protocols were signed by each party for May and June 2010. The monthly meter reading protocols were provided to the verification team and were crosschecked with the figures.

The generation data is stored by PMUM on the web site. The Project owner has an ID and password to access this data on the web site. After the Project owner log in to web site, they can access electricity generation and consumption reports of the project. They can export these reports in electronic format and print hardcopies. The Project owner stores also the hardcopies of the monthly meter reading protocols, internal records and PMUM records until at least 2 years after the end of the crediting period.

At the first two months after the commissioning, the electricity generation and internal consumption figure were read from the meters and the monthly meter reading protocols were prepared by the authorized TEIAS personnel, the protocols were signed by each party. After two months, at the current situation, TEIAS reads the electricity generation and internal consumption of the project activity and prepares the OSF forms. The project owner reviews the OSF forms; they apply to TEIAS in the case of discrepancies. The system will be changed and the figures will be read automatically after the configuration works of remote reading system is completed.

Installed capacity of the hydro power plant after the implementation of the project activity (CapPJ)

It was verified during the site visit that there is no increase or decrease in the installed capacity. The installed capacity is verified through the Generation License and Provisional Acceptance Certificate approved by the Ministry of Energy and Natural Resources dated 28/05/2010. Also, during the site visit, the label of the turbines were seen and it was verified that there is no change in the installed capacity.

Area of the regulation pond measured in the surface of the water after the implementation of the project activity when the reservoir is full (APJ)

Area of the regulation pond measured in the surface of the water after the implementation of the project activity when the reservoir is full, APJ, is monitored yearly. The area of the regulation pond was verified through the drawing provided under Annex 1 of the monitoring report. The

verified reservoir area is same with the figure defined at validation stage. There is no change at the maximum water level.

To see how the monitoring procedures were implemented, the whole process was explained to the verifier during the site visit by sampling the monitoring activities realized during a day.

The monitoring plan is in accordance with the approved methodology applied by the proposed VCS project activity and the parameter is monitored as per the monitoring plan.

4.2 Accuracy of GHG Emission Reduction or Removal Calculations

The project activity was implemented on 29/05/2010. The carbon crediting period and therefore the monitoring starts when the plant commences electricity generation. Starting date of the first crediting period 29/05/2010 as verified through the "Provisional Acceptance Certificate" approved by the "Ministry of Energy and Natural Resources". The first monitoring period is from 29/05/2010 until 30/06/2011.

A complete set of data for the specified monitoring period is available.

The critical parameters used for the determination of the Emission Reductions are the official TEIAS data from the PMUM web site dedicated for measuring the electricity exchanged with the grid and the emission factor, which was determined ex-ante in the validated PD of the Project.

The data pertaining to the monitoring parameters are maintained in the archived records. All the data are consistent with the values input in the Monitoring Report. According to the validated PD, the emission reductions of the project are calculated as follows:

$ERy = BEy - PEy - LEy$

Where:

ERy : Emission reductions in year y (tCO_2)

BEy : Baseline emissions in year y (tCO_2)

PEy : Project emissions in year y (tCO_2)

LEy : Leakage emissions in year y (tCO_2)

Y : Refers to a given year

$BEy = (EGy - EGbaseline) \times EFgrid,CM,y$

Where:

BEy : Baseline emissions in year y (tCO_2/year)

EGy : Electricity supplied by the project activity to the grid (MWh)

$EFgrid,CM,y$: Combined Margin CO_2 emission factor (tCO_2/MWh), in the validated PD as 0.559 tCO_2/MWh

Y : Refers to a given year

The projects' internal consumption is taken from the grid when there is no generation in the project activity; this value is deducted from the electricity generation figures to get the net electricity figure.

Two sets of electricity meters were installed which continuously measures electricity generation and consumption of the project activity. The primary electricity meters (main meters) are Actaris SL761A with serial number 53035222 and 53035223. The figures of each meter are given in the Table below:,

Months	Electricity supplied to the grid (kWh)	Electricity consumption from the grid (kWh)	Electricity supplied to the grid (kWh)	Electricity consumption from the grid (kWh)	Net electricity supplied to the grid (kWh)	Baseline Emissions (tCO_2e)
	Meter numbered 53035222		Meter numbered 53035223			
May'10	3,316,760	14,687	2,130,990	27,757	5,405,306	3,021.57
June'10	32,789,172	2,603	32,500,919	1,121	65,286,367	36,495.08
July'10	17,670,471	19,203	20,877,749	7,977	38,521,040	21,533.26
August'10	7,525,846	41,753	6,634,581	23,950	14,094,724	7,878.95
September'10	3,708,390	31,642	6,888,755	29,434	10,536,069	5,889.66
October'10	7,478,101	13,388	10,257,097	13,506	17,708,304	9,898.94
November'10	5,865,640	39,410	5,069,660	20,220	10,875,670	6,079.50
December'10	2,829,010	33,750	3,230,240	28,100	5,997,400	3,352.55
SUM'10	**81,183,390**	**196,436**	**87,589,991**	**152,065**	**168,424,880**	**94,149.51**
January'11	2,460,780	24,040	2,410,890	36,740	4,810,890	2,689.29
February'11	3,259,190	16,750	3,418,240	34,890	6,625,790	3,703.82
March'11	7,527,500	34,110	6,690,380	23,240	14,160,530	7,915.74
April'11	19,368,290	22,890	19,935,890	7,350	39,273,940	21,954.13
May'11	32,352,510	890	32,048,690	600	64,399,710	35,999.44
June'11	29,682,960	940	29,887,320	610	59,568,730	33,298.92
SUM'11	**94,651,230**	**99,620**	**94,391,410**	**103,430**	**188,839,590**	**105,561.33**
Total Sum '10-'11	***175,834,620***	***296,056***	***181,981,401***	***255,495***	***357,264,470***	***199,710.84***

The reported data was crosschecked by PMUM internal records and monthly meter protocols. SCADA records were also reviewed during the site visit.

Project and Leakage Emissions

Since the project is a greenfield project and power density of the project activity is higher than 10 W/m2, both leakage and project emissions are assumed to be negligible. Therefore, the emission reductions are equal to the baseline emissions.

The project has a generator in the project activity site for emergency cases. During the site visit, it was verified that the generator is used for very limited amount of time. The fossil fuel used in the diesel generator is not included in the monitoring plan, which is in line with the applied methodology.

Emission Reductions

The calculation of emission reduction in this reporting period is as shown below.

$ER_y = BE_y - PE_y - LE_y$

$ER_y = 199{,}710.84 - 0 - 0 = 199{,}710.84\ tCO_2e$

Appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed. The assumptions, emission factors and default values that were applied in the calculations have been justified.

The below table shows a summary of the emission reductions generated during the monitoring period and specifically during the years 2010 and 2011:

Emission reductions generated in the year 2010 (from 29/05/2010 to 31/12/2010-both days are included)	94,149.51 tCO_2e
Emission reductions generated in the year 2011 (from 01/01/2011 to 30/06/2011-both days are included)	105,561.33 tCO_2e
Emission reductions generated during the monitoring period (from 29/05/2010 to 30/06/2011-both days are included)	199,710.84 tCO_2e

4.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

All the information made available by the project participants and the project owner to the verification team, including the reliability of the evidence and the source and nature of the evidences (external, internal, oral and documented) were considered sufficient in quantity and appropriate in quality.

All PMUM records that are the basis of emission reduction within the monitoring period were provided to the verification team. The PMUM records were crosschecked with the OSF forms (Measurement System Recording Form in Turkish "Ölçüm Sistemi Kayıt Formu"). All PMUM records and OSF forms were provided for each month that are under the monitoring period (29/05/2010 – 30/06/2011). All sources were sufficient and appropriate for the all records. The Voluntary Carbon Standard Monitoring Report version 03 dated 06/10/2011, was the base utilized for this Verification Report

4.4 Management and Operational System

The operation manager of the Cevizlik HEPP is responsible with all monitoring and reporting issues in general. The electrical engineers read the meters daily and reported to the operation manager monthly.

Each month, the electricity generation and internal consumption figure are read from the meters and the monthly meter reading protocol is prepared based on this reading by the authorized TEIAS personnel. The generation data is also stored by PMUM on the web site. The project owner has an ID and password to access this data on the web site. The project owner stores also the hardcopies of the monthly meter reading protocols until at least 2 years after the end of the crediting period. The generation data is also recorded automatically by the SCADA system. SCADA system automatically records all electricity generation data 7/24. The project participant is able to monitor the electricity generation data by the use of a SCADA system.

The two sets of meters are placed at the project activity. During on site assessment, verification team was able to verify that the metering system consists of two electric energy meters that are in place and functions well. The accuracy of the monitoring equipments is under TEIAS control. During the monitoring period, no brake down has been recorded. The accuracy class of the meters is 0.2S that meets the EMRA's regulations.

It was verified on the site that the serial numbers of the meters are in accordance with the monitoring report. The types and serial numbers of the electricity meters are noted as follows:

Main Meters:

Manufacturer : ACTARIS

Device Model : SL761A

Serial No : 53035222 and 53035223

Backup Meters:

Manufacturer : ACTARIS

Device Model : SL761A

Serial No : 53035224 and 53035225

The initial calibration records prepared by the supplier company of the meters dated 15/05/2010 was provided to the verification team. The first index protocols that were prepared by the TEIAS on 28/05/2010 were provided to the verification team. During the monitoring period, the meters have not been calibrated.

The calibration of the electricity meters are the responsibility of TEIAS and the project owner has no control over this calibration process. It was verified during the site visit that the meters were sealed by TEIAS personnel. The necessary maintenance and calibration are the responsibility of TEIAS.

The technicians received the "Operation Technician Basic Traning" given by the TEIAS. The turbine supplier gave the operations and using system traning to the staff. The trainings given during the monitoring period was verified through the training certificates.

The operational system is in line with the validated PD version 06 dated 17/06/2010.

5 VERIFICATION CONCLUSION

Bureau Veritas Certification has made initial and first periodic verification of the "The Cevizlik Run-of-River Hydroelectric Power Plant", which is located in Rize Province of Turkey.

The verification was performed on the basis of Voluntary Carbon Standard Version 3.0 criteria, Monitoring Methodology ACM0002 Version 10 country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

Bureau Veritas Certification confirms that the project is implemented as planned and described in the Project Design. Installed equipment being essential for generating emission reductions runs reliably and is calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions.

Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion relates to the project's GHG emissions and resulting GHG emission reductions, reported and related to the valid and registered project baseline and monitoring and its associated documents.

Based on the information we have seen and evaluated, we confirm the following statement:

Reporting period: 29/05/2010 to 30/06/2011

GHG Emission Reductions or Removals	tCO_2e
Baseline Emissions	199,710.84
Project Emissions	0
Leakage	0
Net GHG emission reductions or removals	**199,710.84**

6 REFERNCES

6.1 Documents

Documents provided by Akim Enerji that relates directly to the GHG components of the project and other reference documents are given below:

1. Registered VCS PD version 06 dated 17/06/2010
2. Validation Report dated 21/06/2010
3. Monitoring Report Version 01 dated 10/08/2011
4. Monitoring Report Version 02 dated 26/08/2011
5. Monitoring Report Version 03 dated 06/010/2011
6. All PMUM Records with in the monitoring period
7. All Monthly Reading Protocols with in the monitoring period
8. OSF forms (Measurement System Recording Form)
9. Meter Testing and Calibration Records
10. Emission reduction calculation sheet, "Cevizlik HEPP_Emission Reduction Calculation Sheet(proje2).xls"
11. Emission reduction calculation sheet, "Cevizlik HEPP_Emission Reduction Calculation Sheet(proje2.1).xls"
12. Provisional Acceptance Certificate dated 28/05/2010
13. Validation and Verification Manual v01.2
14. Approved consolidated baseline and monitoring methodology ACM0002, Version 10
15. Voluntary Carbon Standard 2007.1

6.2 Persons Interviewed

List persons interviewed during the verification and site visit, or persons that contributed with other information that are not included in the documents listed above.

1. Mr. Taner Sengonul, HEPP Investment Assistant Coordinator, Akim Enerji
2. Mr. Muhsin Dervisogullari, Environmental Engineer, Akim Enerji
3. Mr. Kamil Altas, Operating Manager, Akim Enerji
4. Mr. Esra Mus, Electrical Engineer, Akim Enerji
5. Mr. Niyazi Genc, Technician, Akim Enerji

7 VERIFICATION TEAM COMPETENCY

Internal Technical Reviewer: Mrs. Burcu Mutman – Environmental Engineer

Bureau Veritas Certification SAS - Internal Technical Reviewer

Burcu Mutman is an auditor for environment, safety and quality management systems. She is also lead verifier for GHG Emission Reduction Projects.

Lead Verifier: Mrs. Isil Timuroglu – Environmental Engineer

Bureau Veritas Certification SAS – Lead Verifier

Isil Timuroglu has over 5 years experience in environmental sectors. She worked about calculation of greenhouse gases. She is a lead verifier for GHG Emission Reduction Projects.

APPENDIX A - VERIFICATION PROTOCOL

Table 1 Verification Requirements Based On the Voluntary Carbon Standard 2007.1

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
1 Project implementation in accordance with the registered project design document			
a Are all physical features of the proposed VCS project in the registered PD in place?	All physical features of the VCS project activity, proposed in the validated PD version 06 dated 17/06/2010 are in place. The project activity consists of two Axis Francis type vertical turbines each with the capacity of 51.21 MW; the total capacities of the turbines are 92.96 MW. Since there are some hydraulic losses due to water speed, the total guaranteed mechanical output will diminish to 92.96 MW. The proposed project is located in the Eastern Black Sea Region of Turkey, on Iyidere River Basin in the province of Rize, Turkey. The technical properties of the turbines and location of the project activity were verified during the site visit.	OK	OK
b Have the project participants operated the proposed VCS project as per the registered PD?	The project participants have operated the project activity as per the validated PD version 06 dated 17/06/2010. It has been verified during the site visit that the project includes 2 units of Axis Francis type vertical turbines with an output of 92.96 MW as per the validated PD.	OK	OK
c Was an on-site visit conducted?	An on-site visit was conducted on 03/08/2011.	OK	OK

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
d If not, justify the rationale of the decision.	N/A	OK	OK
e Does the implementation or operation of VCS project conform to the description contained in the registered PD?	The operation of the project activity conforms to the description contained in the validated PD version 06 dated 17/06/2010. The project activity consists of two Axis Francis type vertical turbines each with the capacity of 51.21 MW as described in the validated PD version 06 dated 17/06/2010.	OK	OK
f If not, which are the potential impacts due to these changes?	N/A	OK	OK
2 Compliance of the monitoring plan with the monitoring methodology			
a Is the validated monitoring plan in accordance with the approved methodology applied by the proposed VCS project?	The validated monitoring plan is in accordance with the approved methodology ACM0002 "Grid connected renewable electricity generation", Version 10. According to the methodology, parameters that needs to be monitored are as follows: $EG_{PJ,y}$: Net electricity generation of the plant Cap_{PJ} : Installed capacity of the HEPP after implementation A_{PJ} : Area of the regulation pond measured in the surface of the water after the implementation of the project activity when the reservoir is full In the monitoring plan, this parameter is included as per the methodology. However, the definitions are not in line with the registered monitoring plan and the notations are not included. Please	CL01	OK

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
	clarify.		
b Are there any monitoring aspects of the project that are not specified in the methodology (e.g. additional monitoring parameters, monitoring frequency and calibration frequency)?	There are no monitoring aspects of the project activity that are not specified in the methodology.	**OK**	**OK**
3 Compliance of monitoring with the monitoring plan			
a Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	Project participant has implemented and followed the monitoring plan and the applied methodology. Electricity generation of the plant, $EG_{PJ,y}$, is monitored continuously and recorded monthly. • Two sets of electricity meters were installed which continuously measures electricity generation and consumption of the project activity. The primary electricity meters (main meters) are Actaris SL761A with serial number 53035222 and 53035223. The secondary electricity meters (auxiliary meters) are Actaris SL761A with serial number 53035224 and 53035225. It was verified during the site visit that the serial numbers of the meters are in accordance with the monitoring report. • Each month, the generation data from the measurement devices are read and the monthly meter reading protocol is prepared based on this	**OK**	**OK**

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
	reading. • The generation data is also recorded automatically by the SCADA system. SCADA system automatically records all electricity generation data 7/24. The project participant is able to monitor the electricity generation data by the use of a SCADA system. • The project owner has no control over, or access to the measurement devices and cannot perform any type of maintenance or calibration.		
	It is indicated under section 3.1 of the monitoring report as follows: "*There are two meters installed to the power plant for measurement of the produced electricity.*" However, there are two sets of meters installed. Please clarify the typing error.	**CL02**	**OK**
	Installed capacity of the HEPP after implementation, Cap_{PJ}, is monitored yearly. It was verified during the site visit that there is no increase or decrease in the installed capacity. The installed capacity is verified through the Generation License and Provisional Acceptance Certificate approved by the Ministry of Energy and Natural Resources dated 28.05.2010. Also, during the site visit, the label of the turbines were seen and it was verified that there is no change in the installed capacity.	**OK**	**OK**

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
	Area of the regulation pond measured in the surface of the water after the implementation of the project activity when the reservoir is full, A_{PJ}, is monitored yearly. The area of the regulation pond was verified through the drawing provided under Annex 1 of the monitoring report. The verified reservoir area is same with the figure defined at validation stage. There is no change at the maximum water level.	**OK**	**OK**
	The explanations given under Annex 1 are in Turkish. Please clarify.	**CL03**	**OK**
b Have all parameters stated in the monitoring plan, the applied methodology been sufficiently monitored and updated as applicable, including:	*Please see below.*		
i. Project emission parameters?	Project emissions are assumed zero as per the ACM0002 since the power density of the project is greater than 10 W/m^2.	**OK**	**OK**
ii. Baseline emission parameters?	• The measurement devices give the total gross electricity generated and the total electricity consumed by the power plant. The difference of the total gross electricity generated and the internal consumption give the net electricity generated which is based on the emission reduction calculation. • There are two sets of electricity meters, which continuously measures electricity generation and consumption of the project activity. • Each month, the generation data from the measurement devices are read and the invoice is	**OK**	**OK**

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
	prepared based on this reading. • The generation data is also recorded automatically by the SCADA system. SCADA system automatically records all electricity generation data 7/24. The project participant is able to monitor the electricity generation data by the use of a SCADA system.		
•	It is stated under section 3.1 of the monitoring report as follows: "*In every month, the generated electricity is measured and a protocol is signed between Akım Enerji and the Çoruh Electricity Distribution Company. The monthly measurement of the electricity is an obligatory to sell electricity. The signed protocols are hold and archived by both parties.*" However, during the site visit, it is indicated by the project owner that the electricity generation is read atomically and the monthly meter reading protocols are not signed. Please clarify and give detailed information regarding the reading procedure.	**CAR01**	**OK**
iii. Leakage parameters?	There is no leakage for the project activity. Leakage is negligible regarding to the methodology.	**OK**	**OK**
iv. Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan?	The management and operational system are in accordance with the monitoring plan. The power plant is operated and owned by Akim Enerji Uretimi San. ve Tic. A.S. The plant personnel are responsible for the data cross checking.	**OK**	**OK**

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
c Are equipment controlled and calibrated in accordance with the monitoring plan?	• The accuracy of the monitoring equipments is under TEIAS control. During the monitoring period, no brake down has been recorded. • Two sets of electricity meters were installed which continuously measures electricity generation and consumption of the project activity. The primary electricity meters (main meters) are Actaris SL761A with serial number 53035222 and 53035223. The secondary electricity meters (auxiliary meters) are Actaris SL761A with serial number 53035224 and 53035225. It was verified during the site visit that the serial numbers of the meters are in accordance with the monitoring report. • The calibration of the electricity meters are the responsibility of TEIAS and the project owner has no control over this calibration process. It has been verified on the site visit that the meters were sealed by TEIAS personnel. The necessary maintenance and calibration are the responsibility of TEIAS.	OK	OK
d Are monitoring results consistently recorded as per approved frequency?	• The main and auxiliary electricity meters measure, read and record the electricity generated and consumed. It has been verified on the site visit that the meters record the monitoring results consistently as per monitoring plan. • The primary and secondary electricity meters measure, read and record the electricity generated and consumed. It has been verified on the site visit	OK	OK

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
	that two meters record the monitoring results consistently as per monitoring plan. SCADA system also records the generation data. • The electricity generation is continuously read and monthly recorded by the meters. TEIAS reads the values each month and a meter reading protocol is prepared. The generation data is stored by PMUM on the web site. The Project owner has an ID and password to access this data on the web site. • The project owner stores the hardcopies of the records until at least 2 years after the end of the crediting period.		
e Have quality assurance and quality control procedures been applied in accordance with the monitoring plan?	• There are two sets of electricity meters, which continuously measures electricity generation and consumption of the project activity. Each month, the generation data from the measurement devices are read and the invoice is prepared based on this reading. The generation data is also recorded automatically by the SCADA system. • Electricity generation was verified through the monthly settlement notification of PMUM. All PMUM records under the monitoring period (29/05/2010 – 30/06/2011) were provided to the verification team.	**OK**	**OK**
4 Assessment of data and calculation of greenhouse gas emission reductions			

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
a Is a complete set of data for the specified monitoring period available? (If no, i.e., only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the validator shall make the most conservative assumption theoretically possible in finalizing the verification report).	The monitoring period consists of the data between May 2010 and June 2011. Emission reduction calculations are based on the settlement notification of PMUM. All PMUM records under the monitoring period (29/05/2010 – 30/06/2011) were provided to the verification team.	**OK**	**OK**
b Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	It is indicated in the registered monitoring plan that cross check measurements results with records for sold electricity. However, the figures could not be crosschecked. Please provide the records to crosscheck.	**CAR02**	**OK**
c Have calculations of baseline emissions, proposed project emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	The calculations have been carried out in accordance with provisions of the monitoring plan and applied methodology. The emission reductions are calculated as follows: ***Emission Reductions = Baseline Emissions – Project Emissions – Leakage Emission*** Since the project and leakage emissions are zero as per the methodology and validated PD, the emission reduction is equal to baseline emissions. The baseline emissions are calculated multiplying the net electricity generation with the approved emission factor.	**OK**	**OK**

CHECKLIST QUESTION	• COMMENTS	Draft Concl	Final Conc
	The net electricity generation figures (3,316,760 kWh and 2,130,990 kWh) of May 2010 used in the emission reduction calculation does not match with the PMUM records. Please clarify.	**CAR03**	**OK**
d Have any assumptions used in emission calculations been justified?	The emission and emission reduction calculations are based on the data measured using calibrated meters of adequate accuracy. Apart from the ex-ante emissions factor, no other assumption is used in these calculations, which is in line with the monitoring methodology.	**OK**	**OK**
e Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	The emission factor used was fixed on ex-ante basis during the verification. No other factor or default value is used for the calculation of emission reductions. The combined margin emission factor is given as 0.559 tCO_2/MWh in the validated PD version 06 dated 17/06/2010.	**OK**	**OK**

Table 2 Resolution of Corrective Action / Forward Action / Clarification Requests

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
CAR01 It is stated under section 3.1 of the monitoring report as follows: *"In every month, the generated electricity is measured and a protocol is signed between Akım Enerji and the Çoruh Electricity Distribution Company. The monthly measurement of the electricity is an obligatory to sell electricity. The signed protocols are hold and archived by both parties."* However, during the site visit, it is indicated by the project owner that the electricity generation is read atomically and the monthly meter reading protocols are not signed. Please clarify and give detailed information regarding the reading procedure.	Table 1-3.b.ii	After the ministry acceptance of Plant, meter reading system was as follows, electricity generation of plant was measured and the document was signed mutually. (*related documents are already submitted)* by Akım Enerji and TEİAŞ. This procedure performed a few months, after than electricity generation is measured only by TEİAS and they upload electricity generation figures and then they begin to issue measured values over PMUM (The Market Financial Reconciliation Center) as it is doing now. This system will be changed to remote reading system after configuration works completed. Akım Enerji checks these measuring via internet in PMUM webpage, if there is any dispute occurs Akım Enerji has right to object these figures.	**Review 1:** At the first two months after the commissioning, the monthly meter reading protocols are read by TEIAS and signed by each party. After two months, TEIAS is read the electricity generation and internal consumption of the project activity and is prepared The OSF forms (Measurement System Recording Form in Turkish "Ölçüm Sistemi Kayıt Formu"). The project owner reviews the OSF forms; they apply to TEIAS in the case of discrepancies. The system will be changed and the figures will be read automatically after the configuration works of remote reading system is completed. The corrective action request is closed.
CAR02 It is indicated in the registered monitoring plan that cross check measurements results with records for sold electricity. However, the figures could not be crosschecked. Please provide the records to crosscheck.	Table 1-4.b	Relevant Documents have been attached. **Response 2:** The requested documents have been attached as "TEIAS SAYAC DEGERLERI (2010-2011)"	**Review 1:** The OSF forms were provided to the validation team. However, not all OSF forms including the monitoring period were provided. Please provide the OSF forms of following months: - May 2010

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
			- June 2010 - September 2010 - October 2010 - November 2010 - December 2010 - January 2011 - April 2011 (meter numbered 53035222) - June 2011 The corrective action request is still open. **Review 2:** All OSF forms including the monitoring period were provided to the verification team. The corrective action request is closed.
CAR03 The net electricity generation figures (3,316,760 kWh and 2,130,990 kWh) of May 2010 do not match with the PMUM records. Please clarify.	Table 1-4.c	Only for the first month PMUM records are different than electricity generation figures because during the Ministry acceptance there has been an electricity generation and this electricity generation could not sell to TEIAS therefore this electricity generation was not included the TEIAS reading meter protocol however this difference included to the PMUM records,	**Review 1:** The PP's explanation was found acceptable since it is a conservative approach. The electricity generation, which was generated during the testing phase and not to be sold to TEIAS, was excluded from the calculation. All figures were verified through the provided documents (first index protocol and monthly meter reading protocol).

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		For to find net electricity generation this figure should subtract from PMUM figures. If we formulize this PMUM Figures- Electricity generation during the Ministry Acceptance= TEIAS reading records. In other words PMUM figures: **For First Reading Meter** First Meter's reading figure (from May TEIAS figure): 959,507 Electric Generation during Ministry Acceptance (from first index protocol): 755,073 =959,507-755,073= **204,4 kWh** PMUM Figure: 3,521,113kWh TEIAS Figure: 3,316,7kWh *Difference* :3,521,113- 3,316,7kWh= **204, 4 kWh** **Second Reading Meter** Second Meters Reading Figure: 554,603 kWh Electric Generation during Ministry Acceptance: 550,334 kWh Difference : 554,603-550,334= **4,2 kWh** PMUM Figure: 2,135,179	The corrective action request is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		TEIAS Figure: 2,130,990 *Difference* : 2,135,179- 2,130,990= **4,19kWh**	
CL01 The validated monitoring plan is in accordance with the approved methodology ACM0002 "Grid connected renewable electricity generation", Version 10. According to the methodology, parameters that needs to be monitored are as follows: $EG_{PJ,y}$: Net electricity generation of the plant Cap_{PJ} : Installed capacity of the HEPP after implementation A_{PJ} : Area of the regulation pond measured in the surface of the water after the implementation of the project activity when the reservoir is full In the monitoring plan, this parameter is included as per the methodology. However, the definitions are not in line with the registered monitoring plan and the notations are not included. Please clarify.	Table 1-2.a	Relevant additions have been added into the Monitoring Plan.	**Review 1:** The notations of the parameters are included. The clarification request is closed.
CL02 It is indicated under section 3.1 of the monitoring report as follows: "*There are two meters installed to the power plant for measurement of the*	Table 1-3.a	Relevant changes have been done in the Monitoring Plan.	**Review 1:** It is mentioned under section 3.1 of the monitoring report that there are two sets of meters are installed. The clarification request is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
produced electricity." However, there are two sets of meters installed. Please clarify the typing error.			
CL03 The explanations given under Annex 1 are in Turkish. Please clarify.	Table 1-3.a	Annex 1 has been translated to English.	**Review 1:** The explanations are given in English under Annex 1. The clarification request is closed.
CL04 The page number and section title of "Table of contents" do not match with the monitoring report. Please clarify.		Relevant changes have been done in the Monitoring Plan.	**Review 1:** The table index is in line with the report. The clarification request is closed.
CL05 In the monitoring report, the statements indicate the future such as: *"the monitoring will be performed..."* *"electrical engineers will undertake..."* *"mechanical engineers will ensure..."* *"accounting manager will be..."* *"operations manager will be..."* Since the power plant is at the operation stage, please use the suitable tense.		Relevant changes have been done in the Monitoring Plan.	**Review 1:** The whole monitoring report was amended accordingly. The clarification request is closed.
CL06 The name in the MR is *"Cevizlik Run-of-River-Hydroelectric Power Plant Project"* however it is *"Cevizlik Run-of-River Hydroelectric Power Plant"* in the validated		Relevant changes have been done in the Monitoring Plan.	**Review 1:** The title is corrected as *"Cevizlik Run-of-River Hydroelectric Power Plant"* as per the validated VCS PD. The clarification request is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
PDD. Please clarify.			
CL07 In the monitoring report, emission reduction for 2010 and 2011 is stated as 94149.51 tCO_2 and 105561 tCO_2 respectively. This makes the total emission reduction as 199710.51 tCO_2. However, in the monitoring report the total emission reductions indicated as 199710.84 tCO_2. Please clarify.		Relevant changes have been done (two more digit added) in the Monitoring Plan.	**Review 1:** The emission reduction is given correctly in the revised monitoring plan. The clarification request is closed.
CL08 It is stated in the monitoring report as follows: *"...after than electricity generation is measured only by TEİAS and they upload electricity generation figures and then they begin to issue measured values over PMUM (The Market Financial Reconciliation Center) as it is doing now..."* During this procedure, TEIAS prepares the OSF forms and the project owner reviews the OSF forms. Please clarify the record system and OSF forms clearly. The OSF forms were used for crosschecking.		Relevant explanation has been added in to the Monitoring Plan.	**Review 1:** The emission reduction is given correctly in the revised monitoring plan. The clarification request is closed.
CL09 It is indicated under section 1 of the monitoring report that the project highly supports the sustainable economic development in the region. Please justify.		Relevant changes have been done in the Monitoring Plan.	**Review 1:** The statement was excluded from the VCS PD. The clarification request is closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
CL10 It is indicated under section 2.1 of the monitoring report as follows: *"The Electrical Engineers will receive sufficient and continuous training in terms of monitoring and verification on aspects such as meter's reading and calibration and reading's recording, adjustment and reporting. If new personnel are hired, they will have to follow up a training program and will be trained in the specific skills required to carry out the Monitoring Plan."* The training records given to the staff during the monitoring period were provided to the validation. Please also indicate the realized trainings at the monitoring report.		Relevant changes have been done in the Monitoring Plan.	**Review 1:** The training that was given during the monitoring period is provided in the revised monitoring plan. The clarification request is closed.