FINAL VERIFICATION REPORT "OTLUCA HPPS RUN-OF-RIVER HYDRO PROJECT"

RINA Services S.p.A.

Project Title	OTLUCA HPPs Run-of-River Hydro Project
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Summary:

RINA Services S.p.A. (RINA), commissioned by Beyobasi Enerji Uretimi A.S., has verified the greenhouse gas emission reductions reported for the project activity “OTLUCA HPPs Run-of-River Hydro Project” in Turkey, for the period 07/04/2011 to 31/07/2013, with regard to the relevant requirements for CDM and VCS activities.

The objective of the verification is to have an independent review ex post determination of the monitored reductions in GHG emission reductions, reported for the “OTLUCA HPPs Run-of-River Hydro Project” project in Turkey for the period 07/04/2011 to 31/07/2013.

Verification was conducted using RINA procedures in line with the requirements specified in the VCS Version 3 Requirements, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques. The verification consisted of desk review, on-site assessment and the resolution of outstanding issues and the issuance of the final verification report and certification.

The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS Version 3 requirements, which refer to CDM rules, in order to be certified.

In conclusion, it is RINA’s opinion that the project activity “OTLUCA HPPs Run-of-River Hydro Project”, in “Turkey”, as described in the Monitoring Report version 4 of 10/10/2013, meets all relevant requirements for VCS and CDM activities and all relevant host Party criteria and correctly applies the baseline and monitoring methodology “ACM0002”, “Consolidated baseline methodology for grid-connected electricity from renewable sources”, version 12.1.0 of 26/11/2010. Hence, RINA is able to certify that the emission reductions from the project during the monitoring period 07/04/2011 to 31/07/2013 amount to 241,701.5 tCO2e.

Abbreviations

BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM-VVS	Clean Development Mechanism Validation and Verification Standard
CH_4	Methane
CR	Clarification Request
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DSI	General Directorate Of State Hydraulic Works
EB	Executive Board
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
MP	Monitoring Plan
MR	Monitoring Report
PD	Project Document
PE	Project Emission
PMUM	Market Financial Conciliation Center (Piyasa Mali Uzlastirma Merkezi)
PP(s)	Project Participant(s)
Ref.	Document Reference
RINA	RINA Services Spa
SS(s)	Sectoral Scope(s)
TEIAS	Turkish Electricity Transmission Company
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VER	Voluntary Emission Reduction

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1 INTRODUCTION

1.1 Objective

The objective of the verification is to have an independent review ex post determination by a Designated Operational Entity (DOE) of the monitored reductions in GHG emission that have occurred as a result of registered VCS project activity during a defined monitoring period. Certification is the written assurance by the DOE that, during a specific time period, a proposed VCS project activity achieved the reductions in anthropogenic emissions by sources of GHGs as verified.

The objective of this verification/certification was to verify and certify emission reductions and effective implementation of the monitoring of sustainable development indicators and mitigation measures, reported for the "OTLUCA HPPs Run-of-River Hydro Project" in Turkey for the period of 07/04/2011 to 31/07/2013.

1.2 Scope and Criteria

The verification scope is:

- to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- to verify that reported GHG emission data is sufficiently supported by evidence;
- to evaluate whether all the mitigation measures have been effectively put in place according to the monitoring plan and that all the sustainable development indicators have been correctly monitored.

Verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable VCS Version 3 requirements, which refer to CDM rules, in order to be certified.

UNFCCC criteria for CDM refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, and the subsequent decisions by the CDM Executive Board.

Verification is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

1.3 Level of Assurance

All the revisions of the verification report, before being submitted to the client, were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent RINA instructions.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme for VCS and CDM validation and verification. The verification team and the technical reviewers consist of the following personnel:

Role/Qualification	Last Name	First Name	Country
VCS Team Leader, VCS Verifier, Technical Expert	Timuroglu	Isil	Turkey
VCS Verifier, Technical Expert in Training	Kiratli	Tugce	Turkey
Technical Review	Arokiasamy	Cyril Augustus	India

1.4 Summary Description of the Project

The project is located on the upstream part of Anamur River in Taşeli Plateau in southern Turkey, Anamur district, Mersin province. The project consists of three sub-projects (Otluca-1, Boğuntu, Otluca-2) which are located at the upstream part of the Anamur River in Anamur district.

All the sub-projects (Otluca-1, Boğuntu, Otluca-2) have three turbines with a capacity of 12.296 kW, 1.107 kW and 1.936 kW, respectively. The project activity has a total capacity of 46 MWe as confirmed through the Equipment Agreement /19/.

The plant uses the water left from the channel to generate electricity, before conveying water to the Anamur River riverbed. In addition, the project activity (Otluca-1, Boğuntu, Otluca-2) includes a reservoir area at the total size of 49,464 m^2. The project not only produces electricity from water, but also plays a role of conveying water to the riverbed as a part of the irrigation channel.

The main information of the project is summarized in the table below.

Project Participant(s)	Beyobasi Enerji Uretimi A.S.		
Project Title	OTLUCA HPPs Run-of-River Hydro Project		
Location of the project	Anamur District, Mersin Province of Turkey		
Methodology(ies)	ACM0002", "Consolidated baseline methodology for grid-connected electricity from renewable sources", version 12.1.0 of 26/11/2010 /10/		
Sectoral Scope(s)	1	**RINA's Technical Area(s)**	1.2
Validated VCS PD	Version 8 of 22/08/2011		
Starting date of the crediting period	07/04/2011 (as confirmed through the Otluca-1 Temporary Acceptance Protocol /18/)		
Project's crediting period	07/04/2011 – 06/04/2021 (both days included)		
Monitoring period	07/04/2011 to 31/07/2013		

2 VALIDATION PROCESS, FINDINGS AND CONCLUSION

2.1 Validation Process

The project was validated by Bureau Veritas (Validation Report of 24/08/2011) /4/ and it was registered under the VCS registration reference N° 755 /32/.

2.2 Validation Findings

2.2.1 Gap Validation

The project was validated by Bureau Veritas (Validation Report of 24/08/2011) /4/ and it was registered under the VCS registration reference N° 755 /32/.

2.2.2 Methodology Deviations

There is not any deviation in the applied methodology to the project activity.

2.2.3 Project Description Deviations

Not available.

2.2.4 New Project Activity Instances

Not available.

2.3 Validation Conclusion

The project was validated by Bureau Veritas (Validation Report of 24/08/2011) and it was registered under the VCS registration reference N° 755.

Based on the Validation Report, version 02 of 24/08/2011, 1 FAR is raised for the first monitoring period.

Forward Action Request (FAR#1): Please observe on site how the possible deviations between two meters is monitored by Camlica elektrik and in which cases action is taken.

During on site visit, the project manager Ilhami GOKKOCA and deputy director Kemal YILDIZ were interviewed about monitoring of the two meters. The plant personnel records the electricity generation from the meters /14/ and the responsible engineer checks the figures regularly. In case of difference between the data, TEIAS will be informed. However, during this monitoring period, no difference was observed between the data.

TEIAS is responsible for calibration and maintenance of the meters the project owner has no control on the meters since the meters are sealed by the TEIAS as confirmed during the site visit. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. Hence, FAR#1 is closed.

3 VERIFICATION PROCESS

3.1 Method and Criteria

Verification was conducted using RINA procedures in line with the requirements specified in the VCS Version 3 Requirements, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The verification consisted of the following three phases:

- Document review;
- On-site assessment;

- The resolution of outstanding issues and the issuance of the final verification report and certification.

3.2 Document Review

The monitoring report version 4 of 10/10/2013 /2/, the emission reduction calculations provided in the form of a spreadsheet "Otluca_EG-net_2011-04_2013-07.xls" version 02 of 17/09/2013 /3/, the approved baseline and monitoring methodology ACM0002 version 12.1.0 /10/ and all the documentation provided to support the monitoring period /1 – 32/ were assessed as part of the verification. In addition, the VCS Project Description (VCS PD) /1/, in particular as regards the baseline estimations and the monitoring plan, and the Validation Report of 24/08/2011 /4/ for the project, were reviewed.

The following table lists the documentation that was reviewed during the verification.

/1/	FutureCamp: VCS PD for "OTLUCA HPPs Run-of-River Hydro Project" in Turkey, Version 8 of 22/08/2011
/2/	FutureCamp: Monitoring Report for "OTLUCA HPPs Run-of-River Hydro Project" in Turkey, version 4 of 10/10/2013 FutureCamp: Monitoring Report for "OTLUCA HPPs Run-of-River Hydro Project" in Turkey, version 3 of 23/09/2013 FutureCamp: Monitoring Report for "OTLUCA HPPs Run-of-River Hydro Project" in Turkey, version 2 of 23/09/2013 FutureCamp: Monitoring Report for "OTLUCA HPPs Run-of-River Hydro Project" in Turkey, version 1 of 19/09/2013 FutureCamp: Monitoring Report for "OTLUCA HPPs Run-of-River Hydro Project" in Turkey, version 0 of 05/08/2013
/3/	FutureCamp: Emission Reduction Calculation Spreadsheet "Otluca_EG-net_2011-04_2013-07.xls" version 02 submitted on 17/09/2013 FutureCamp: Emission Reduction Calculation Spreadsheet "Otluca_EG-net_2011-04_2013-06.xls" version 01 submitted on 09/08/2013
/4/	Bureau Veritas Certification Holding SAS: Validation Report for "OTLUCA HPPs Run-of-River Hydro Project" version 2 of 24/08/2011
/5/	VCS Verified Carbon Standard: VCS Program Guide, VCS Version 03, v3.4 of 04/10/2012
/6/	VCS Verified Carbon Standard: VCS Standard, VCS Version 03, v3.3 of 04/10/2012
/7/	VCS Verified Carbon Standard: VCS Verification Report Template Version 3.2 of 04/10/2012
/8/	CDM Executive Board: Project Standard, version 04.0 of 29/07/2013
/9/	CDM Executive Board: Clean Development Mechanism Validation and Verification Standard, version 04.0 of 29/07/2013
/10/	CDM Executive Board: Baseline and monitoring methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity from renewable sources", version 12.1.0 of 26/11/2010
/11/	CDM Executive Board: Methodological Tool "Tool to calculate the emission factor for an electricity system", version 02.2.0 of 03/06/2011
/12/	CDM Executive Board: Methodological Tool "Tool for the demonstration and assessment of additionality", version 05.2 of 26/08/2008
/13/	Market Financial Conciliation Center (PMUM): Monthly PMUM Records from April 2011 to June 2013
/14/	Beyobasi Enerji Uretimi A.S.: The Excel Sheets of the Monthly Meter Readings for all the

	Monitoring Period from 04/2011 to 07/2013, submitted on 22/08/2013
/15/	Turkish Electricity Transmission Company (TEIAS): Meter Test Report of 11/03/2011(main meter: 53099076)
/16/	Turkish Electricity Transmission Company (TEIAS): Meter Test Report of 11/03/2011(backup meter: 53099077)
/17/	Energy Market Regulatory Authority: Generation License numbered EU/1245-3/894 of 05/07/2007
/18/	The Ministry of Energy and Natural Resources: Temporary Acceptance Protocol of 07/04/2011 (Otluca-1)
/19/	Hangzhou Yatai Hydro Equipment Completing CO. LTD.: Equipment Agreement of 28/05/2008 (Otluca-1, Boğuntu, Otluca-2)
/20/	Map of the "OTLUCA HPPs Run-of-River Hydro Project" and the Area of the Lake, submitted on 22/08/2013
/21/	List of the Employment and Organizational Chart of the "OTLUCA HPPs Run-of-River Hydro Project", submitted on 22/08/2013
/22/	Intergovernmental Panel on Climate Change: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2, Chapter 1, Table 1.4 "Default CO_2 Emission Factors for Combustion"
/23/	Turkish Energy Market Regulatory Authority: Communiqué for Measurement Devices used in the Electricity Market of 22/03/2003
/24/	The Ministry of Trade and Industry: Regulation of Metering and Testing of Metering Systems of 24/07/1994
/25/	Akfen HES: Internal Correspondence Mail for Turbine Breakdown of 03/02/2012 Akfen HES: Internal Correspondence Mail for Turbine Breakdown of 15/04/2012
/26/	Beyobasi Enerji Uretimi A.S.: Official Record for Turbine Breakdown of 03/02/2012 Beyobasi Enerji Uretimi A.S.: Official Record for Turbine Breakdown of 17/12/2012
/27/	Beyobasi Enerji Uretimi A.S.: The Sample of Daily Generation Information Report for Otluca-1, Boğuntu, Otluca-2 of 06/05/2013
/28/	Beyobasi Enerji Uretimi A.S.: The Label Pictures of the Turbine Generators for the Otluca-1, Boğuntu, Otluca-2, submitted on 22/08/2013
/29/	Itron France: Certificate of Conformity for the Electricity Meters of 16/10/2010
/30/	The Ministry of Energy and Natural Resources: Temporary Acceptance Protocol of 13/07/2011 (Otluca-2)
/31/	The Ministry of Energy and Natural Resources: Temporary Acceptance Protocol of 16/09/2011 (Boguntu)
/32/	Website: https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=755&lat=36%2E303819&lon=32%2E779395&bp=1 Argument: Database of the VCS Projects Language: English, Retrieved on: 23/09/2013
/33/	Website: http://www.teias.gov.tr/TürkiyeElektrikİstatistikleri/istatistik2011/istatistik%202011.htm Argument: Turkish Electricity Generation - Transmission Statistics Language: Turkish/English, Retrieved on: 10/10/2013

3.3 Interviews

The plant manager and the deputy director were interviewed during the site visit. To see how the monitoring procedures were implemented, the whole process was explained to the verification team. During the monitoring period of 07/04/2011 to 31/07/2013, no break downs or change were occurred for the electricity meters as confirmed through the site inspection and interviews. However, the turbines have a breakdown from 03/02/2012 to 16/04/2012 for Otluca-1 HEPP as per the official record /26/.

The plant personnel read and record the electricity generation monthly from the meters and sends the reading to TEIAS every first day of the month. They also fill a spreadsheet /14/ for the generated electricity and stored electronically.

In addition, the carbon consultant was interviewed about the monitoring report and related parameters. Whole process related emission reduction calculation was explained.

The key personnel interviewed and the main topics of the interviews are summarized in the table below.

	Date	Name and Role	Organization	Topic
/a/	22/08/2013	Engin MERT *Consultant*	FutureCamp	Monitoring plan Monitoring methodology Monitoring data Implementation status of the project
/b/	22/08/2013	Ilhami GOKKOCA *Project Manager*	Beyobasi Enerji Uretimi A.S.	Monitoring equipments and operation Calibration certificates Emission Reductions calculation
/c/	22/08/2013	Kemal YILDIZ *Deputy Director*	Beyobasi Enerji Uretimi A.S.	Local Employment

3.4 Site Inspections

On 22/08/2013, RINA visited the hydro power plant located in Kayseri province of Turkey. During the on-site assessment of the project, all the equipments and the systems were accessible. RINA assessed the implementation and operation of the proposed project activity, reviewed the information flows for generating, aggregating and reporting the monitoring parameters, interviewed key personnel of the plant to confirm the operational and data collection procedures, cross-checked between information provided in the monitoring report and data plant, checked the monitoring equipment including calibration performance, reviewed calculations and assumptions made in determining the GHG data and emission reductions, checked the quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

3.5 Resolution of Any Material Discrepancy

The objective of this phase of the verification is to resolve any outstanding issues, which need to be clarified for RINA's positive conclusion on the monitoring report and emission reductions.

To guarantee transparency a verification protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of verification and the results from verifying the identified criteria. The verification protocol consists of three tables; the different columns in these tables are described in the figure below (see Figure 1). The completed verification protocol is enclosed in Appendix A to this report.

A corrective action request (CAR) is raised if one of the following occurs:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impair the estimate of emission reductions;
- Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.

A clarification request (CR) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements, which refer to CDM rules, have been met.

CARs, CRs identified are included in the verification protocol in Appendix A of this report.

Figure 1 Verification protocol tables

Verification Protocol, Table 1 - Requirement checklist					
Checklist Question	**Ref.**	**MoV**	**Comments**	**Draft Conclusion**	**Final Conclusion**
Checklist questions organized in seven different sections.	Makes reference to documents where the answer to the checklist question or item is found.	Explain how conformance with the checklist question is investigated. Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects, (N/A) means not applicable.	The discussion on how the conclusion is arrived at and the conclusion on the compliance with checklist question so far.	For CAR, CR and FAR see the definitions above.	OK is used if the information and evidence provided is adequate to demonstrate compliance with VCS requirements which refer to CDM rules.

Verification Protocol, Table 2: Resolution of Corrective Action Requests and Clarification			
Corrective action requests and/or clarification requests	**Reference to Table 1**	**Response by project participants**	**Verification Conclusion**
The CAR and/or CRs raised in table 1 are repeated here.	Reference to the checklist question number in Table 1 where the CAR or CR	The responses given by the project participants to address the CARs and/or CRs.	The verification team's assessment and final conclusion of the CARs and/or CRs.

	is explained.		

Verification Protocol, Table 3 - Forward Action Requests		
Forward action request	**Reference to Table 1**	**Response by project participants** **Verification Conclusion**
The FAR raised in table 1 is repeated here.	Reference to the checklist question number in Table 1 where the FAR is explained.	Response by the project participants on how forward action request will be addressed.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

It was verified during the site visit conducted on 22/08/2013 that the proposed project activity has been implemented and it is in operation in accordance to the project activity described in the validated VCS PD /1/.

The project activity consists of three sub-projects (Otluca-1, Boguntu, Otluca-2) and has been implemented in three phase. The starting date of the first project operation is 07/04/2011 as confirmed through the Temporary Acceptance Protocol /18/. The carbon crediting period and therefore the monitoring starts when the plant commences electricity generation. Therefore, the crediting period starts on 07/04/2011.

All the sub-projects (Otluca-1, Boğuntu, Otluca-2) have three turbines with a capacity of 12,296 kW, 1,107 kW and 1,936 kW, respectively. The project activity has a total capacity of 46 MWe as confirmed through the Equipment Agreement /19/. The project boundary in the validated VCS PD /1/ is in line with the actual project boundary. The generated electricity is fed to the Turkey National Grid as confirmed through the Generation License /17/.

Based on the onsite inspection and checking the above documents, RINA confirms that the project activity has been implemented and it is in operation as described above in accordance with the project activity in the registered PDD /1/.

4.2 Accuracy of GHG Emission Reduction or Removal Calculations

The emission reduction calculations provided in the spreadsheet /3/ have been verified to be correct and in line with the validated VCS PD /1/. According to the applied methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity from renewable sources", version 12.1.0 of 26/11/2010 /10/, the emission reductions have been calculated based on the following formula:

$ERy = BEy – PEy – LEy$

Where:

BEy = Baseline emissions in year y (tCO_2e/yr)

PEy = Project emissions in year y (tCO_2e/yr)

LEy = Leakage emissions in year y (tCO_2e/yr)

Baseline emissions

The baseline emissions include the CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity, multiplying the electricity supplied to the grid (MWh) with the combined margin CO_2 emission factor for grid connected power generation in year.

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

Where:

BE_y = Baseline emissions in year y (tCO_2)

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

$EF_{grid,CM,y}$ = Combined margin grid emission factor (tCO_2/MWh)

Project emissions

Project emissions has been assumed to be zero as per the ACM0002 version 12.1.0 of 26/11/2010 /10/ as defined in the validated VCS PD /1/.

Leakage emissions

The leakage emissions are assumed to be zero as per the ACM0002 version 12.1.0 of 26/11/2010 /10/ as defined in the validated VCS PD /1/.

The data presented in the monitoring report /2/ were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. Sufficient evidences were presented and verified by RINA for the reported emission reductions.

Parameters Available at Validation and Data Fixed Ex-ante

DATA/PARAMETER	Source of data	Reported value for the project period	Assessment/Observation
$EF_{grid,CM,y}$ Baseline emission factor	TEIAS statistics /33/	0.5491 tCO_2/MWh	According to the approved methodology ACM0002 version 12.1.0 /10/, the combined emission factor has been determined using the ex-ante option /11/ and so it is not requested to monitor and recalculate the emission factors during the crediting period. The combined emission factor is determined to be 0.5491 tCO_2/MWh in the VCS PD /1/ and validation report /4/.

Parameters and Data Monitored

DATA/PARAMETER	**$EG_{facility,y}$**
Data Unit	MWh/yr
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Source of data to be used	The monthly settlement notification of PMUM
Value data for the monitoring period	440,177.62 MWh
Measuring and reporting frequency; recording procedure	Continuously monitoring and monthly recording
Type of monitoring equipment and its accuracy	Two electricity meters (main meter and backup meter) are installed at the switchyard. The main meter is Aktaris SL761A071 model with serial number 53099076 and the backup meter is SL761A071 with the serial number of 53099077. The meters have the accuracy of 0.2s as confirmed through the test report of the meters /15/ /16/. The accuracy class of the meters complies with the "Communiqué for Measurement Devices used in the Electricity Market" /23/.
Calibration frequency/interval	TEIAS is responsible for calibration and maintenance of the meters as per the validated VCS PD /1/. The project owner has no control on the meters since the meters are sealed by the TEIAS as confirmed during the site visit. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. However, during this monitoring period, no difference was observed between the data. The meters were tested by TEIAS on 11/03/2013 as confirmed through the Test Reports /15/ /16/. The calibration of the electricity meters was performed by Itron France on 16/10/2010 as confirmed through the calibration certificate /29/. As per the "'Regulation of Metering and Testing of Metering Systems" /24/, the meters shall be calibrated every 10 years. The calibration of meters is deemed appropriate and in compliance with the national regulation. During the on-site assessment, it was confirmed that the meters are in place and functioning well. During this monitoring period, no break down has been recorded.
How were the values in the monitoring report verified and cross-checked?	The electricity generation figures are based on the PMUM records /13/ from April 2011 to July 2013. Monthly meter readings /14/ are used for crosscheck.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	The generated electricity is measured by two unit meters that were sealed by TEIAS. The project owner has no control on the meters. The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The project owner has an ID and

	password to access this data on the web site. Plant Manager is responsible for the control of generated electricity and consumed electricity. The Plant Manager checks the electricity measurement records and reports to the Project Manager. The amount of net electricity supplied to the grid was calculated by the two electricity meters with electricity supplied minus electricity withdrawn. The collected data during the monitoring period will be kept by the project owner at least two years after end of the last crediting period as stated in the validated VCS PD /1/ and monitoring report /2/, which is in line with the ACM0002 version 12.1.0 /10/.
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	All the data were available for the whole monitoring period.

DATA/PARAMETER	**Cap_{PJ}**
Data Unit	W
Description	Installed capacity of the hydro power plant after the implementation of the project activity
Source of data to be used	Equipment specifications that described in the equipment contracts
Value data for the monitoring period	46,017,000
Measuring and reporting frequency; recording procedure	Yearly
Type of monitoring equipment and its accuracy	The parameter is monitored through the Equipment Contract /19/.
Calibration frequency/interval	NA
How were the values in the monitoring report verified and cross-checked?	The equipment label has been seen during on-site visit. In addition, the installed capacity is confirmed through the Equipment Contract /19/.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	NA
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	All the data were available for the whole monitoring period.

DATA/PARAMETER	**A_{PJ}**
Data Unit	m^2
Description	Area of the reservoir measured with topographic drawings in the surface of the water, after implementation of the project activity, when reservoir full
Source of data to be used	Technical drawings from consultants
Value data for the monitoring period	49,464
Measuring and reporting frequency; recording procedure	Yearly
Type of monitoring equipment and its accuracy	The parameter is monitored through the Technical Drawings /20/.
Calibration frequency/interval	NA

How were the values in the monitoring report verified and cross-checked?	The area of the reservoir is crosschecked with the map of the project area /20/.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	NA
If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	All the data were available for the whole monitoring period.

Emission Reductions Achieved

The emission reductions calculation reported in the Monitoring Report version 4 of 10/10/2013 /2/ and calculation spreadsheet "Otluca_EG-net_2011-04_2013-07.xls" version 02 of 17/09/2013 /3/ have been verified to be correct.

The reported emission reductions are equivalent to 241,701.5 tCO_2 during the monitoring period from 07/04/2011 to 31/07/2013. According to the registered VCS PD /1/, the total emission reductions period should be approximately 287,007 tCO_2 for between the April 2011 and July 2013. However, due to the changing rain regimes, the realized figure is 15.8% lower than the estimated figure between April 2011 and July 2013.

4.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

Two electricity meters (main meter and backup meter) are installed at the switchyard. The main meter is Aktaris SL761A071 model with serial number 53099076 and the backup meter is SL761A071 with the serial number of 53099077.

The meters have the accuracy of 0.2s as confirmed through the test report of the meters /15/ /16/. The accuracy class of the meters complies with the "Communiqué for Measurement Devices used in the Electricity Market" /23/.

TEIAS is responsible for calibration and maintenance of the meters as per the validated VCS PD /1/. The project owner has no control on the meters since the meters are sealed by the TEIAS as confirmed during the site visit. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. The meters were tested by TEIAS on 11/03/2013 as confirmed through the Test Reports /15/ /16/. The calibration of the electricity meters was performed by Itron France on 16/12/2010 as confirmed through the calibration certificates /29/. As per the "'Regulation of Metering and Testing of Metering Systems" /24/, the meters shall be calibrated every 10 years. The calibration of meters is deemed appropriate and in compliance with the national regulation.

The electricity generation figures are based on the PMUM records /13/ from April 2011 to July 2013. Monthly meter readings /14/ are used for crosscheck. The verified electricity generation is in line with the emission reduction excel sheet /3/.

4.4 Management and Operational System

The generated electricity is measured by two unit meters that were sealed by TEIAS. The project owner has no control on the meters. The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The project owner has an ID and password to access this data on the web site. Plant Manager is responsible for the control of generated electricity and consumed electricity. The Plant Manager checks the electricity measurement records and reports to the Project Manager.

The collected data during the monitoring period will be kept by the project owner at least two years after end of the last crediting period as stated in the validated VCS PD /1/ and monitoring report /2/, which is in line with the ACM0002 version 12.1.0 /10/.

During the site visit, the suitability of the management system for monitoring and reporting has been assessed and found acceptable and in line with the monitoring plan presented on Monitoring Report version 4 of 10/10/2013 /2/.

5 VERIFICATION CONCLUSION

RINA Services Spa (RINA) has performed verification of the emission reductions reported for the project activity "OTLUCA HPPs run-of-river hydro project" in Turkey, for the period 07/04/2011 to 31/07/2013, with regard to the relevant requirements for CDM and VCS activities.

It is RINA's opinion that the GHG emission reductions stated in the Monitoring Report version 04 of 10/10/2013 for the "OTLUCA HPPs run-of-river hydro project" project in Turkey for the period 07/04/2011 to 31/07/2013 are fairly stated. The GHG emission reductions were calculated correctly, on the basis of the approved monitoring methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity from renewable sources", version 12.1.0 of 26/11/2010 and the monitoring plan contained in the validated VCS PD.

Hence, RINA is able to certify that the emission reductions from the project during the monitoring period 07/04/2011 to 31/07/2013 amount to 241,701.5 tCO_2.

Emission reductions generated in the year 2011 (07/04/2011 - 31/12/2011) = 61,734.3tCO_2e
Emission reductions generated in the year 2012 (01/01/2012-31/12/2012) = 100,466.1tCO_2e
Emission reductions generated in the year 2013 (01/01/2013 - 31/07/2013) = 79,501.2tCO_2e

GHG Emission Reductions or Removals	tCO_2e
Baseline Emissions	241,701.5
Project Emissions	0
Leakage	0
Net GHG emission reductions or removals	**241,701.5**

APPENDIX A

VERIFICATION PROTOCOL

TABLE 1 REQUIREMENTS CHECK LIST

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
A	**Monitoring Report**					
A.1	Does the used project title clearly enable the reader to identify the unique VCS activity? Is there an indication of a revision number, the date of the revision and the monitoring period?	/1/ /2/ /18/	DR, CC	The title of the project activity is given as "OTLUCA HPPs run-of-river hydro project" in the Monitoring Report version 0 of 05/08/2013 /2/. The title is in line with the validated VCS PD /1/. The revision number, the date of the revision seems appropriate. The monitoring period is stated as 01/04/2011 – 01/08/2013 in the monitoring report, version 0 of 05/08/2013. However, the starting date of the monitoring period is presented as 07/04/2011 according to the Temporary Acceptance Protocol /18/ of 07/04/2013.	~~**CR 1**~~	**OK**
A.2	Does the project comply with the applicable requirements for completing the Monitoring Reports (latest version available)?	/2/ /7/	DR	The project complies with the applicable requirements for completing the Monitoring Reports. The Monitoring Report /2/ follows the VCS Monitoring Report Template Version 3.2 of 04/10/2012 /7/.		**OK**
A.3	Does the MR comply with the template available (latest version)?	/2/ /7/	DR	The Monitoring Report /2/ follows the VCS Monitoring Report Template Version 3.2 of 04/10/2012 /7/.		**OK**
B	**Description of Project Activity**					
A.1	Title of the project activity, revision number and date of Monitoring Report	/1/ /2/	DR, CC	The title of the project activity is given as "OTLUCA HPPs run-of-river hydro project" in the Monitoring Report version 0 of 05/08/2013 /2/. The title is in line with the validated VCS PD /1/. The revision number, the date of the revision seems appropriate.		**OK**

[1] MoV: DR document review, I interview, CC cross checking

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
A.2	Is the actual implementation and operation of the proposed project activity in accordance with the project activity in the registered VCS-PD?	/1/ /2/ /4/ /19/	DR, CC, I	It has been confirmed during on site visit that the project activity is operated in accordance with the validated VCS PD /1/ and Validation Report /4/. The project is located on the upstream part of Anamur River in Taşeli Plateau in southern Turkey, Anamur district, Mersin province. The installed capacity of the project activity is 46 MW as confirmed through the Equipment Agreement /19/. The project has nine installed turbines model of Hangzhou Yatai HLA542-LJ-145 with an output of 12296 kW (3 turbines), HLA551-LJ-112 with an output of 1936 kW (3 turbines) and HLA606-WJ-57 with an output of 1107 kW (3 turbines) as confirmed through the equipment agreement /19/.		**OK**
A.3	Methodology applied for the registered project activity	/1/ /2/ /10/	DR	The validated project activity applies the approved baseline and monitoring methodology ACM0002 version 12.1.0 of 26/11/2010 /10/.		**OK**
B	**Monitoring**					
B.1	**Monitoring Plan**					
B.1	Is the actual implementation and operation of the proposed project activity in accordance with the project activity in the registered VCS-PD?	/1/ /2/ /19/	DR, CC, I	It is confirmed during the site visit performed on 22/08/2013 that project activity is implemented and operated as per the registered PDD /1/. In addition, the project has nine installed turbines model of Hangzhou Yatai HLA542-LJ-145 with an output of 12296 kW (3 turbines), HLA551-LJ-112 with an output of 1936 kW (3 turbines) and HLA606-WJ-57 with an output of 1107 kW (3 turbines) as confirmed through the equipment agreement /19/. The actual implementation and operation of the purposed project activity is not in accordance with the project activity in the registered VCS-PD.		**OK**
B.2	In case of deviation between the registered project and the actual implementation/operation, do they comply with the requirements of the	/1/ /2/ /8/ /9/	DR, CC, I	This change is permanent during the crediting period and has been assessed as per the “Clean Development Mechanism Validation and		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
	Project Standards?			Verification Standard", version 03.0 of 23/11/2012 /9/ and "Project Standard", version 02.1 of 03/12/2012 /8/. The additionality of the project activity is demonstrated by applying investment analysis as per the validated VCS PD /1/. Therefore, this change does not affect the additionality of the project activity. It has been confirmed that this change does not affect the applicability/application of baseline methodology. Also, the scale of the VCS project remains the same.		
B.3	For project activity that consist of more than one site: - describe the status of the implementation and starting date of operation of each site; For project activity with phased implementation: - describe the progress of the proposed project activity achieved in each phase number; - if the phased implementation is delayed, described the reasons and the expected implementation dates.	/1/ /2/ /18/	DR, CC, I	The project consists of three sub-projects (Otluca-1, Boğuntu, Otluca-2) which are located at the upstream part of the Anamur River in Anamur district and has been implemented in three phase. The starting date of the first project operation is 07/04/2011 as confirmed through the Temporary Acceptance Protocol /18/. However, the starting dates of the remaining projects could not be confirmed since the Temporary Acceptance Protocols of the projects was not provided to the verification team and the implementation and commission of the project activity is not clearly defined in the Monitoring Report /2/ including commissioning date and phase.	~~**CR 2**~~	**OK**
B.4	Methodology and methodological tool applied for the registered project activity	/1/ /2/ /4/ /10/ /11/ /12/	DR, CC	The validated project activity applies the approved baseline and monitoring methodology ACM0002 version 12.1.0 of 26/11/2010 /10/. Also, the following methodological tools are applied for the validated project activity: "Tool to calculate the emission factor for an electricity system", Version 02.2.0 of 03/06/2011 /11/ "Tool for the demonstration and assessment of additionality, Version 05.2 of 26/08/2008" /12/		**OK**
C	**Compliance of the monitoring activities with the registered monitoring plan / Compliance of the monitoring plan with the monitoring**					

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
	methodology and methodological tool					
C.1	**Monitoring plan**					
C.1.1	Does the monitoring plan included in the registered VCS project activity comply with the applied methodology?	/1/ /2/ /4/ /10/	DR, CC	The monitoring plan of the validated VCS project activity complies with the applied methodology ACM0002 version 12.1.0 of 26/11/2010 /10/.		**OK**
C.1.2	Does the monitoring comply with the monitoring plan in the registered VCS-PD?	/1/ /2/ /4/	DR, CC	The monitoring complies with the monitoring plan presented in the validated VCS PD /1/. The following parameters shall be monitored as per the monitoring plan in the validated VCS-PD: • Quantity of electricity generation supplied by the project plant/unit to the grid in year y, $EG_{facility,y}$ • Installed capacity of the hydro power plant after the implementation of the project activity, Cap_{PJ} • Area of the reservoir measured with topographic drawings in the surface of the water, after implementation of the project activity, when reservoir full, A_{PJ} However, the frequency of the monitoring/recording of the Cap_{PJ} given as "Once at first verification" in the Monitoring Report /2/ is not in line with the validated VCS PD /1/.	~~**CR 3**~~	**OK**
C.2	**Data and parameters fixed ex-ante or at renewal crediting period**					
C.2.1	Which parameters were available at validation and how were they verified?	/1/ /2/ /4/ /10/ /11/ /22/	DR, CC	The parameters that were available at the validation was given below; ***Combined margin CO2 emission factor for grid connected power generation in year y ($EF_{grid,CM,y}$):*** As per "Tool to calculate the emission factor for an electricity system", version 02.2.0, the emission factor was stated as 0.5491 tCO2/MWh which is calculated and in line with the VCS-PD /1/. ***Gross electricity generation:*** Gross Electricity supplied to the grid by relevant sources (2006-	~~**CAR 1**~~	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				2008) is stated as 131,681.1 GWh; 154,982.5 GWh;163,919.4 GWh, respectively as per the TEIAS web site. However, the unit of the parameter is not in line with the registered VCS-PD and the values could not be confirmed since the link is not relevant with the Gross Electricity. ***Net electricity generation:*** Net electricity generation is stated as 169,543.1 GWh; 183,339.7 GWh; 189,761.9 GWh, respectively as per the TEIAS web site. However, the name and the unit of the parameter are not in line with the registered VCS-PD. ***Sample Group for BM emission factor:*** The parameter is defined as most recent power plants, which compromise 20% of total generation. The parameter is also confirmed according to the VCS-PD and the TEIAS website. The website is includes the name of the plants, MW capacities, fuel types, annual electricity generations and dates of commissioning. ***Emission factor for fuel type i ($EF_{CO2,i,y}$):*** The parameter is used for combined margin calculations in validation with a unit of tCO2/GJ as per the IPCC default values /22/. ***Average energy conversion efficiency of power unit m in year y (ηm,y):*** The parameter is used for combined margin calculations as per the "Tool to calculate the emission factor for an electricity system", version 02.2.0 /11/. ***Heating Values of fuels consumed for electricity generation in the years of 2006, 2007 and 2008 ($HV_{i,y}$):*** The parameter is used for combined margin calculations as per the Heating Values Of Fuels Consumed In Thermal Power Plants In Turkey By The Electric Utilities, TEİAŞ web site.		

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				Fuels consumed for electricity generation in the years of 2006, 2007 and 2008 ($FC_{i,y}$): The parameter is used for combined margin calculations as per the Annual Development of Fuels Consumed In Thermal Power Plants In Turkey By The Electric Utilities, TEİAŞ web site. However, the link includes the data of 2005. ***Net Calorific Value of fuel types in the years of 2006, 2007 and 2008 (NCVi,y):*** The parameter is calculated as TJ/kton, TJ/million m^3 by using HVi,y to FCi,y as Net Calorific Values of fuel types according to the IPPC default values /22/.		
C.2.2	What default data were selected and applied?	/1/ /2/ /4/ /10/	DR, CC	As per the approved methodology ACM0002 version 10 /10/, the combined emission factor has been determined using the ex-ante option, therefore it is not requested to monitor and recalculate the emission factors during this crediting period. The combined emission factor is determined to be 0.5491 tCO_2/MWh in the validated VCS PD /1/ and validation report /4/.		**OK**
C.3	**Data and parameters monitored ex-post**					
C.3.1	Which parameters have been monitored during the monitoring period?	/1/ /2/ /3/ /10/ /13/ /14/ /15/ /16/ /19/ /20/	DR, CC, I	***Quantity of electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$):*** The parameter is measured in MWh/yr and it is monitored by two units electricity meters that are located at the switchyard. One is the main meter (Aktaris SL761A071 model with serial number 53099076) and the other one is the backup meter (Actaris SL761A071with serial number 53099077). The meters have the accuracy of 0.2s as confirmed through the test report of the meters /15/ /16/. However, the information was not stated and discussed in the monitoring report. According to the VCS-PD, the net electricity generation is based on the PMUM records /13/ and the PMUM records are in line with the monthly	~~**CAR 2**~~	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				meter readings /14/. However, the calculation excel sheet /3/ are in line with the PMUM records /13/. Please correct. The net electricity generation during monitoring period is calculated as 391.758,1 MWh in the monitoring report, version 0 of 05/08/2013 /1/. However, the "value applied" given under Section 2.5 of the Monitoring Report /2/ is not correct since the calculation excel sheet is not in line with the PMUM records /13/. ***Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ}):*** The parameter is measured in W as per the validated monitoring plan. The total installed capacity of the hydro power plant after the implementation of the project activity is 15,339,000 W, as confirmed through the Equipment Agreement /19/. However, the value is not presented in the monitoring report. ***Area of the reservoir measured with topographic drawings in the surface of the water, after implementation of the project activity, when reservoir full (A_{PJ}):*** The parameter is calculated as 49,464 m^2 as confirmed through the map of the area /20/. However, the value was not defined in the monitoring report.		
C.3.2	Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate?	/2/ /3/ /15/ /16/ /19/ /20/ /23/	DR, CC, I	***Quantity of electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$):*** The parameter is measured in MWh/yr and it is monitored by two units electricity meters that are located at the switchyard. One is the main meter (Aktaris SL761A071 model with serial number 53099076) and the other one is the backup meter (Actaris SL761A071with serial number 53099077). The meters have the accuracy of 0.2s as confirmed through the test report of the meters	~~CAR 2~~	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				/15/ /16/. However, the information was not stated and discussed in the monitoring report. The accuracy class of the meters complies with the "Communiqué for Measurement Devices used in the Electricity Market" /23/. ***Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ}):*** The parameter is monitored through the Equipment Agreement /19/. Therefore, measurement equipment is not used. ***Area of the reservoir measured with topographic drawings in the surface of the water, after implementation of the project activity, when reservoir full (A_{PJ}):*** The parameter is monitored through the Map of the Area /20/. Therefore, measurement equipment is not used.		
C.3.3	Is the measuring/reading/recording frequency adequate for all monitoring parameters? Is it in line with the registered monitoring plan?	/1/ /2/ /10/	DR, I	***Quantity of electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$):*** The electricity generation supplied to the grid and electricity consumption from the grid is monitored continuously by two unit meters and recorded monthly as verified during the site visit. Monitoring frequency is in line with the applied methodology /10/ and validated VCS PD /1/. ***Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ}):*** The parameter is monitored yearly as per the methodology /10/. However, "Frequency of the monitoring /recording" of the parameter is not in line with the VCS-PD /1/ and the methodology /10/. ***Area of the reservoir measured with topographic drawings in the surface of the water, after implementation of the project activity, when reservoir full (A_{PJ}):*** The parameter is monitored yearly in line with the applied	~~**CR 3**~~	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				methodology /10/ and validated VCS PD /1/.		
C.4	**Calibration requirements**					
C.4.1	Are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate?	/1/ /2/ /15/ /16/ /24/	DR, CC, I	TEIAS is responsible for calibration and maintenance of the meters as per the validated VCS PD /1/. The project owner has no control on the meters since the meters are sealed by the TEIAS as confirmed during the site visit. If any major discrepancy occurs between the two meters, TEIAS performs necessary calibration. The meters were tested by TEIAS on 11/03/2013 as confirmed through the Test Reports /15/ /16/. However, TEIAS's testing of the meters are not explained in the Monitoring Report /2/. As per the "'Regulation of Metering and Testing of Metering Systems" /24/, the meters shall be calibrated every 10 years. However, the calibration date of the electricity meters could not be confirmed since the calibration certificates or first index protocols was not provided to the verification team.	~~**CAR 3**~~	**OK**
C.4.2	Does the calibration cover the monitoring period?	/1/ /2/ /15/ /16/	DR, CC	During this monitoring period, the meters have not been calibrated. However, the meters were tested by TEIAS before installation. The meters were tested on 11/03/2011 as confirmed through the Test Reports /15/ /16/. However, TEIAS's testing and calibrating of the meters are not discussed correctly in the Monitoring Report /2/ and the calibration date of the electricity meters could not be confirmed since the calibration certificates or first index protocols was not provided to the verification team.	~~**CAR 3**~~	**OK**
C.4.3	Has the calibration frequency been respected?	/1/ /2/ /15/ /16/	DR, CC	During this monitoring period, the meters have not been calibrated. However, the meters were tested by TEIAS before installation. The meters were tested on 11/03/2011 as confirmed through the Test Reports /15/ /16/. However, TEIAS's testing and calibrating of the meters are not discussed correctly in the Monitoring Report /2/ and the calibration date	~~**CAR 3**~~	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				of the electricity meters could not be confirmed since the calibration certificates or first index protocols was not provided to the verification team.		
C.4.4	In case of delay, describe the applied maximum permissible error	/2/	DR	The calibration date of the electricity meters could not be confirmed since the calibration certificates or first index protocols was not provided to the verification team.	~~**CAR 3**~~	**OK**
C.5	**Monitoring of the sustainable indicators**					
C.5.1	Is the monitoring of sustainable development indicators/environmental impacts warranted by legislation in the Host Country?	/1/	DR	The monitoring of sustainable development indicators is not requested by the legislation in the Host Country.		**OK**
C.6	**Management system and quality control**					
C.6.1	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/1/ /2/	DR, I	An on-site inspection has been performed on 22/08/2013 and it has been confirmed that the monitoring arrangements in the monitoring plan are feasible within the project design.		**OK**
C.6.2	Are procedures identified for day-to-day record handling (including what records to keep, storage area of records and how to process performance documentation)? Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/1/ /2/ /10/ /13/ /14/	DR, CC, I	The plant personnel reads and records the electricity generation monthly from the meters, which is stated in the switchyard and sends the reading to TEIAS every first day of the month. They also fill a spreadsheet /14/ for the generated electricity and stored electronically. The electricity generation supplied to the grid and electricity consumption from the grid 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 data from the Electricity Meters are the basis for the settlement notification of PMUM /13/, and crosschecked with the monthly meter reading /14/. It is mentioned in the Monitoring Report /2/ that all records will be kept for at least two years as requested by the applied methodology and it is in line with the ACM0002 version 12.1.0 of 26/11/2010 /10/.		**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
C.6.3	Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?	/1/ /2/	DR, I	The generated electricity is measured by two unit meters that were sealed by TEIAS. The project owner has no control on the meters. The electricity generation supplied to the grid and electricity consumption from the grid is stored by PMUM on the web site. The project owner has an ID and password to access this data on the web site.		**OK**
C.6.4	Are the responsibilities and authorities for monitoring and reporting in accordance with the responsibilities and authorities stated in the monitoring plan?	/1/ /2/	DR, I	In the registered VCS-PD, it was defined that "For the operating stage the responsibilities and management structure has to be defined. Names, jobs and structure will be presented with the first monitoring report". However, it is not discussed or presented in the monitoring report.	**~~CR 4~~**	**OK**
C.6.5	Does data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	/1/ /2/ /3/ /13/ /14/	DR, I	According to the VCS-PD, the net electricity generation is based on the PMUM records /13/ and the PMUM records are in line with the monthly meter readings /14/. However, the calculation excel sheet /3/ are in line with the PMUM records /13/. Please correct.	**~~CAR 2~~**	**OK**
D.1	**Assessment of data and calculation of emission reductions / Accuracy of emission reduction calculations**					
D.1.1	How were the values in the monitoring report verified and cross-checked?	/2/ /3/ /13/ /14/ /19/ /20/	DR, CC, I	***Quantity of electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$):*** The parameter is measured in MWh/yr and it is monitored by two units electricity meters that are located at the switchyard. The net electricity generation is based on the PMUM records /13/ and monthly meter readings /14/ was used for crosscheck. However, the excel sheet /3/ are not in line with the PMUM records /13/. ***Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ}):*** The parameter is measured in W as per the validated monitoring plan. The total installed capacity of the hydro power plant after the implementation of the project activity is 15,339,000	**~~CAR 2~~**	**OK**

Checklist Question		Reference	MoV[1]	Comments	Draft Conclusion	Final Conclusion
				W, as confirmed through the Equipment Agreement /19/. However, the value is not presented in the monitoring report. ***Area of the reservoir measured with topographic drawings in the surface of the water, after implementation of the project activity, when reservoir full (A_{PJ}):*** The parameter is calculated as 49,464 m^2 as confirmed through the map of the area /20/. However, the value was not defined in the monitoring report.		
D.1.2	If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	/1/ /2/ /3/ /10/	DR	The 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 in line with the ACM0002 version 10 of 28/05/2009 /10/ and validated VCS PD /1/.		**OK**
D.1.3	Emission reductions reported	/2/ /3/	DR	Please refer to Section C.3.1, C.6.5, and D.1.1 of this protocol.	~~**CAR 2**~~	**OK**
D.1.4	Difference between the emission reductions estimated in the registered VCS PD and the emission reductions reported for the monitoring period.	/2/ /3/	DR	The difference between the emission reductions estimated in the registered VCS PD and the emission reductions reported for the monitoring period is not made in the Monitoring Report /2/.	~~**CAR 4**~~	**OK**

TABLE 2 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
CAR 1 ***Gross electricity generation:*** Gross Electricity supplied to the grid by relevant sources (2006-2008) is stated as 131,681.1 GWh; 154,982.5 GWh;163,919.4 GWh, respectively as per the TEIAS web site. However, the unit of the parameter is not in line with the registered VCS-PD and the values could not be confirmed since the link is not relevant with the Gross Electricity. ***Net electricity generation:*** Net electricity generation is stated as 169,543.1 GWh; 183,339.7 GWh; 189,761.9 GWh, respectively as per the TEIAS web site. However, the name and the unit of the parameter are not in line with the registered VCS-PD. ***Fuels consumed for electricity generation in the years of 2006, 2007 and 2008 ($FC_{i,y}$):*** The parameter is used for combined margin calculations as per the Annual Development of Fuels Consumed In Thermal Power Plants In Turkey By The Electric Utilities, TEİAŞ web site. However, the link includes the data of 2005.	C.2.1	Reponse: Gross Electricty Generation: It should be gross electrcity generation by fossil fuells. It can be seen from the validated PDD table A1-3. In order to find the gross electricty generation by fossil fuels, cell f44, k44 and l 44 for 2006, f45, k45 and l45 for 2007 and f46, k46 and l 46 for the 2008 should be added. Because figure in the cell N43 is the total of thermal and reneawable + waste. Net Electricty Generation: Name and the unit of the parameter are corrected. Fuels consumed for electricity generation in the years of 2006, 2007 and 2008 ($FC_{i,y}$): Link is corrected.	**Review 1 (20/09/2013):** ***Gross electricity generation:*** The unit of the parameter is now in line with the registered VCS-PD. ***Net electricity generation:*** The name and the unit of the parameter are now in line with the registered VCS-PD. ***Fuels consumed for electricity generation in the years of 2006, 2007 and 2008 ($FC_{i,y}$):*** The link is corrected and now includes the data of 2006, 2007 and 2008. **Hence, CAR 1 is closed.**
CAR 2 ***Quantity of electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$):*** The parameter is measured in MWh/yr and it is monitored by two units electricity meters that are located at the switchyard. One is the main meter (Aktaris SL761A071 model with serial number 53099076) and the other one is the backup meter (Actaris SL761A071with serial number	C.3.1 C.3.2 C.6.5 D.1.1 D.1.3	**Response:** **Quantity of electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$):** *Additional information is added.* *Net electricty geenration amounts ia taken from the PMUM records, all tables are corrected accordingly.*	**Review 1 (20/09/2013):** ***Quantity of electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$):*** The information about the serial numbers and the accuracy of the meters were now stated and discussed in the monitoring report. The excel sheet /3/ is now corrected based on the PMUM records /13/. The net electricity generation during

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
53099077). The meters have the accuracy of 0.2s as confirmed through the test report of the meters /15/ /16/. However, the information was not stated and discussed in the monitoring report. According to the VCS-PD, the net electricity generation is based on the PMUM records /13/ and the PMUM records are in line with the monthly meter readings /14/. However, the values was not transfer correctly to the calculation excel sheet /3/. Please correct. The net electricity generation during monitoring period is calculated as 391.758,1 MWh in the monitoring report, version 0 of 05/08/2013 /1/. However, the "value applied" given under Section 2.5 of the Monitoring Report /2/ is not correct since the calculation excel sheet is not in line with the PMUM records /13/. ***Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ}):*** The parameter is measured in W as per the validated monitoring plan. The total installed capacity of the hydro power plant after the implementation of the project activity is 15,339,000 W, as confirmed through the Equipment Agreement /19/. However, the value is not presented in the monitoring report. ***Area of the reservoir measured with topographic drawings in the surface of the water, after implementation of the project activity, when reservoir full (A_{PJ}):*** The parameter is calculated as 49,464 m^2 as confirmed through the map of the area /20/. However, the value was not defined in the monitoring report.		*ER-Calculation excelsheet is corrected.* ***Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ}):*** *Total installed capacity of the plant is46,017,000 W. It could be seen from the equipment contract.* *(12296*3+1936*3+1107*3)It is added to the MR.* ***Area of the reservoir measured with topographic drawings in the surface of the water, after implementation of the project activity, when reservoir full (A_{PJ}):*** *It is added to the MR.*	monitoring period is calculated and corrected as 440,177.62 MWh in the excel sheet and the monitoring report. ***Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ}):*** The value is now presented as 46,017,000 W in the monitoring report. ***Area of the reservoir measured with topographic drawings in the surface of the water, after implementation of the project activity, when reservoir full (A_{PJ}):*** The parameter is now defined as 49,464 m^2 in the monitoring report. **Hence, CAR 2 is closed.**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
CAR 3 The meters were tested by TEIAS on 11/03/2013 as confirmed through the Test Reports /15/ /16/. However, TEIAS's testing of the meters are not explained in the Monitoring Report /2/. As per the "'Regulation of Metering and Testing of Metering Systems" /24/, the meters shall be calibrated every 10 years. However, the calibration date of the electricity meters could not be confirmed since the calibration certificates or first index protocols was not provided to the verification team and was not discussed in the monitoring report.	C.4.1 C.4.2 C.4.3 C.4.4	**Response:** Related information is added to the MR. Calibration date of the meters is added to the MR. Also calibration document shows the date of the calibration is provided to the DOE. Response to Review 1: Explaniton given in the MR is corrected as requested. Response to review 2: Explanations about the test is performed by the TEİAŞ is added to the MR.	**Review 1 (20/09/2013):** TEIAS's testing of the meters on 11/03/2013 is now explained in the Monitoring Report /2/. The calibration date of the electricity meters are now presented as 16/12/2010 as confirmed through the calibration certificates /29/. As per the "'Regulation of Metering and Testing of Metering Systems" /24/, the meters shall be calibrated every 10 years. Therefore, calibration was not necessary for this monitoring period. However, test of the meters are presented as a date of last calibration. Testing the meters does not mean the same thing with the calibration. Therefore, first and the last calibration were performed on 22/01/2010. Please correct the explanation given in the "Monitoring equipment" of the "$EG_{facility,y}$" parameter in the monitoring report. **Hence, CAR 3 is not closed.** **Review 2 (23/09/2013):** The misunderstanding is corrected. However, the necessary explanation test of the meters was removed from MR. Please discuss and give an explanation about both test and calibration of the meters. **Hence, CAR 3 is not closed.** **Review 3 (23/09/2013):** The necessary explanation about test of the meters performed by TEIAS on 11/03/2011 is now presented in the monitoring report, version 3 of 23/09/2013. **Hence, CAR 3 is closed.**
CAR 4	D.1.4	**Response:**	**Review 1 (20/09/2013):**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
The difference between the emission reductions estimated in the registered VCS PD and the emission reductions reported for the monitoring period is not made in the Monitoring Report /2/.		*It is stated under the section 4.4 of the MR.*	The difference between the emission reductions estimated in the registered VCS PD and the emission reductions reported for the monitoring period is now discussed in the Monitoring Report /2/. According to the explanation, the reported emission reductions are 15.8% lower than the estimated emission reduction. **Hence, CAR 4 is closed.**
CR 1 The monitoring period is stated as 01/04/2011 – 01/08/2013 in the monitoring report, version 0 of 05/08/2013. However, the starting date of the monitoring period is presented as 07/04/2011 according to the Temporary Acceptance Protocol /18/ of 07/04/2013.	A.1	***Reponse:*** Information given in the MR is corrected. Comissionning start date of the project is 07.04.2011 and it is defined in the MR. Biggest part of the Otluca (Otluca 1) was started in operation April 2011., Otluca 2 was started in operation 13/07/2011 and Boğuntu was started inoperation 16/09/2011. Related Documents are provided to the DOE. Earliest date is set as starting date of the project whihc is 07.04.2011.	**Review 1 (20/09/2013):** The monitoring period is now stated as 07/04/2011 – 31/07/2013 in the monitoring report, version 1 of 19/09/2013. **Hence, CR 1 is closed.**
CR 2 The project consists of three sub-projects (Otluca-1, Boğuntu, Otluca-2) which are located at the upstream part of the Anamur River in Anamur district and has been implemented in three phase. The starting date of the first project operation is 07/04/2011 as confirmed through the Temporary Acceptance Protocol /18/. However, the starting dates of the remaining projects could not be confirmed since the Temporary Acceptance Protocols of the projects was not provided to the verification team and also, the implementation and commission of the project activity is not clearly defined in the Monitoring Report /2/ including commissioning date and phase.	B.3	**Response:** Please refer to CR 1.	**Review 1 (20/09/2013):** The starting date of the three sub-projects (Otluca-1, Boğuntu, Otluca-2) are clearly explained in the monitoring report. Otluca-1 is implemented on 07/04/2011 according to the Otluca-1 Temporary Acceptance Protocol /18/. For the other projects the necessary documents were provided to the verification team. According to the Temporary Acceptance Protocols /30/ /31/, Otluca-2 is implemented on 13/07/2011 and Boguntu is implemented on 16/09/2011. **Hence, CR 2 is closed.**

Corrective action and/ or clarification requests	Reference to Table 2	Response by project participants	Verification Conclusion
CR 3 The frequency of the monitoring/recording of the Cap_{PJ} given as "Once at first verification" in the Monitoring Report /2/ is not in line with the validated VCS PD /1/.	C.1.2 C.3.3	**Response:** *It is corrected.*	**Review 1 (20/09/2013):** The frequency of the monitoring/recording of the Cap_{PJ} given as "Yearly" in the Monitoring Report /2/ is now in line with the validated VCS PD /1/. **Hence, CR 3 is closed.**
CR 4 In the registered VCS-PD, it was defined that "For the operating stage the responsibilities and management structure has to be defined. Names, jobs and structure will be presented with the first monitoring report". However, it is not discussed or presented in the monitoring report.	C.6.4	**Response:** *Informtaion about the workers and their responsibiliites are given under the section 3.3 of the MR.*	**Review 1 (20/09/2013):** The jobs and structures were presented as; - 1 Plant Manager - 1 Asistant Manager - 4 Mech. Tech. - 1 Electrical Technician - 9 Control Room Operator - 2 Assistant plant worker - 1 Driver -1 Cook in the monitoring report. **Hence, CR 4 is closed.**