



Voluntary Carbon Standard 2007.1
Validation Report

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Validation Report:

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Validation Report for "Yazi Hes 1.13 MW Hydro Power Plant"	Bade Cebeci
Client:	Project Title:
Ser-C Elektrik Enerji Uretim Insaat ve Ticaret Ltd. Sti.	"Yazi Hes 1.13 MW Hydro Power Plant"
Summary:	
<p>Bureau Veritas Certification has made the validation of "Yazi Hes 1.13 MW Hydro Power Plant". The project activity involves the installation of a 1.13 MW run-off-river hydro electric power plant (HEPP) near Guldurcek Dam in Cankiri in Central Anatolia Region of Turkey. The project comes under Type-I Renewable Energy Project as per Appendix B of the procedures for CDM project activities. The expected annual emission reduction is 2,825 tons/year. The crediting period of the project activity is 10 years, renewable twice for a total of 30 years.</p> <p>The validation scope is defined as an independent and objective review of the VCS project description, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following five phases: i) desk review of the project design and the baseline and monitoring plan; ii) Review of the baseline methodology by the specialist and the validator; iii) Review of the investment analysis by the specialist and the validator iv) follow-up interviews and on site visit; v) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures. The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Annex II in the Validation Protocol. Taking into account this output, the project proponent revised its VCS project description. In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology AMS I.D, version 15 and meets the relevant VCS 2007.1 requirements and local legislation.</p>	
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Abbreviations List:

- HEPP** : Hydro Electric Power Plant
CL : Clarification
CAR : Corrective Action Request
MP : Monitoring Plan
VCS : Voluntary Carbon Standard
VCU : Voluntary Carbon Unit
VER : Voluntary Emissions Reductions / Verified Emissions Reductions
PD : Project Description
EMRA : Electricity Market Regulatory Authority (EPDK)
EPDK : Elektrik Piyasasi Duzenleme Kurulu (EMRA)
TEIAS : Turkiye Elektrik Iletim A.S. (Turkish Electricity Transmission Company)
DSI : Devlet Su Isleri (State Hydraulic Works)
PP : Project Participant
CDM : Clean Development Mechanism
HES : Hidro Elektrik Santrali (Hydro Electric Power Plant)
FSR : Feasibility Study Report

1 INTRODUCTION

This report summarizes the findings of the validation of the "Yazi Hes 1.13 MW Hydro Power Plant" project, performed on the basis of VCS 2007.1 criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The validation serves as project design verification and is a requirement of all voluntary emission reduction projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant VCS criteria which are validated in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Validation is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Voluntary Carbon Units (VCUs).

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the VCS project description, the project's baseline study and monitoring plan, the project's investment analysis and other relevant documents. The information in these documents is reviewed against the methodologies and tools that are given under the Clean Development Mechanism of Kyoto Protocol, VCS 2007.1 rules and associated interpretations. The validation is not meant to provide any consulting towards the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 VCS Project Description

The project activity involves the installation of a 1.13 MW run-off-river hydroelectric power plant (HEPP) right at the downstream of the 'Guldurcek Dam' built on the Devres stream, which is one of the branches of the Kizilirmak River, inside the boundaries of the province of Cankiri. The project comes under Type I – Renewable Energy Project as per Appendix B of the procedures for CDM project activities. The project aims to generate electricity by utilizing the downstream flow from Gurdurcek Dam, which is designed for irrigation and water supply to the region. The objective of the project is to generate electricity and supply it into the public grid. The project is expected to generate about 5,203 MWh of electricity annually and to reduce 2,825 tonnes of CO₂ emissions per year. The project consists of a penstock with a 1 m diameter pipe with a length of 1425 m, and a power house with two Francis type horizontal turbines. Each turbine has 600 kW capacities. The crediting period of the project activity is 10 years, renewable twice for a total of 30 years.

1.4 Level of assurance

The Level of assurance of the validation report is defined as high.

2 METHODOLOGY

The overall validation, from contract review to validation report & opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

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

2.1 Review of Document

The Project Description (PD) submitted by Ser-C Elektrik Enerji Uretim Insaat ve Ticaret Ltd. Sti. (Ser-Carbon) and additional background documents related to the project design and baseline, i.e. relevant Law, VCS Project Description Template, Approved Methodology and tools under the CDM of Kyoto Protocol, Clarifications (CL) and Corrective Action Requests (CAR) on validation requirements were reviewed.

To address Bureau Veritas Certification corrective action requests and clarification requests, Ser-Carbon revised the PD several times, PD version 09 being the last version, which was submitted to the validation team on 21.10.2010. After further clarifications, all corrective action requests and clarification requests were closed in 24.10.2010. The validation of the Project resulted in 10 Corrective Action Requests and 34 Clarification Requests.

All documents were reviewed under the requirements of the CDM Methodologies as these methodologies are approved under the VCS.

2.2 Follow-up Interviews

Between October 2009 and September 2010 Bureau Veritas Certification performed interviews with Ser-Carbon, Elastas Elektrik Uretim A.S. (Elastas) which is the project owner and local stakeholders regarding the Grid emission factor, project specific questions and Clarification and Corrective Actions Requests documented in the validation protocol. A list of the persons interviewed is given under section 5.2 of this report. After the discussions, the validation team closed on 24.10.2010 all documented CL and CAR in the validation protocol.

2.3 Resolution of any material discrepancy

During the validation there were no material discrepancies that were identified.

3 VALIDATION FINDINGS

3.1 Project Design

Bureau Veritas Certification recognizes that Elastas, which is the project participant and the project owner, is helping the country in fulfilling its goals of promoting sustainable development with this project. The project is in line with country specific requirements. In addition, the project highly supports the sustainable economic development in the region.

It was validated during the site visit that the project description given in the VCS PD version 09 is accurate. It was also crosschecked with the project description given in the feasibility study report.

Yazi HPP is not a debundled component of a larger project activity as defined in the VCS PD version 09. The project activity is neither in existing facilities nor in utilizing existing equipments. During the site visit, it was confirmed that project activity is a greenfield project.

The conclusions of the validation team are as follows:

- The technology used:

Yazi HEPP project entails the construction and operation of a 1.13 MW run-off-river hydro electric power plant (HEPP) in the Central Anatolian Region right at the downstream of the Guldurcek Dam built on Devres steam, Orta district in the west part of Cankiri province. The project uses the water released from the Guldurcek dam to produce electricity. The location of the project activity was validated during the site visit.

The implementation of the project consists of construction of the following main items:

- A cubbyhole to connect the existing 90 cm diameter bottom weir of Guldurcek Dam to the penstock with a butterfly valve
- A 1 m diameter, 1425 m long penstock
- Power house with two horizontal shaft Francis turbines each with the capacity of 600 kW, the total capacity of the turbines will be 1.13 MW

The net electricity delivery to the grid by the project is estimated to be 5,203 MWh per annum. The monthly generation is expected to be around 433.6 MWh. The quantity of electricity required for operation of the plant is at a negligible level.

The equipment to be provided is brand new according to the electromechanical equipment agreement. There is no new technology that is expected to replace the plant's technology in the short run. The project does not need extensive initial training and maintenance efforts in order to work as presumed during the project planning period. Necessary trainings to the plant staff will be delivered by the supplier in line with the agreement between the project owner and the supplier. The agreement between the supplier and Yazi HES has been reviewed by the validation team. The related training records shall be verified during the first verification of the project activity.

As a result, validation team approves that the technology used in the project activity is state of the art and all the equipment used in the project are new.

- Project duration, crediting time and project start date

Starting date of the project activity is 01 October 2009, when the plant commences electricity generation. The project start date was validated through the "Provisional Acceptance Certificate" approved by EMRA (Energy Market Regulations Authority). The carbon crediting period and therefore the monitoring starts when the plant commences electricity generation. The crediting life is a maximum of ten years that may be renewed at most two times.

The expected life time of the project is, starting from 31 August 2006, minimum 49 years which corresponds to the duration of the license obtained from EMRA. However, the equipments may be renewed (as recommended) during the lifetime of the project activity according to the conditions of the equipments. The owner of the company will be able to renew the license, by applying to EMRA in 9 – 12 months before the expiration date of the first license duration.

- Ownership

The generation license belongs to Elastas Elektrik Uretim A.S.. A copy of the generation license is given in Annex 2 of the PD.

The project did not participate in any other GHG emission reduction program. The validation team approves that there is no double counting involved in this project activity during this validation.

- Eligibility of the project activity under VCS

The project comes under Type I – Renewable Energy Project as per Appendix B of the procedures for CDM project activities. The project is a 1.13 MW HEPP and it uses renewable sources to produce electricity. Since the installed capacity of the planned HEPP is smaller than 15 MW; it is a small scale renewable energy project activity according to the Decision 17/ CP.7 Article 6. As per the justifications given above, the project activity is eligible under VCS.

The project is not a grouped project.

3.2 Baseline

- Approval of the baseline methodology:

The baseline for “Yazi Hes 1.13 MW Hydro Power Plant” project is established by using the UNFCCC official methodology AMS I.D, version 15, namely “Grid connected renewable electricity generation”.

For the calculation of the grid emission factor, UNFCCC Methodological Tool “Tool to calculate emission factor of an electricity system” version 02 is used.

For the assessment and demonstration of additionality, “Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities” is used.

The PD was submitted on 28/09/2009. Both the tools and the guidance are the latest available versions at the time of PD submission to the DOE, and are found appropriate by the validation team. Clean Development Mechanism Methodologies are approved under the VCS program.

- Correct application and justification of baseline methodology:

The choice of methodology AMS I.D version 15 is justified as the proposed project activity meets relevant applicability criteria:

- Yazi HEPP Project activity has an installation capacity of 1.13 MW hydro power plant within the limit of 15 MW and according to UNFCCC approved methodologies it is counted as small scale project activity.
- The project supplies electricity to and displace electricity from an electricity distribution system that would have been supplied by at least one fossil fuel fired generating unit.

As the project activity is an install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (greenfield plant) which does not involve any reservoir.

The baseline scenario was applied correctly and the justification for the choice of the baseline methodology is found appropriate by the validation team

- Appropriate setting of baseline scenario

The baseline scenario is defined as follows:

“Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of

new generation sources, as reflected in the Combined Margin (CM) calculations described in the "Tool to calculate emission factor for an electricity system"

The defined baseline scenario is in line with the methodology as the project activity is the installation of a new grid-connected renewable power plant.

The above setting of the baseline scenario is found appropriate by the validation team.

- Assessment and demonstration of additionality:

According to the Attachment A to Appendix B of the Simplified Modalities and Procedures for Small-Scale CDM Project Activities, the investment barrier is chosen to demonstrate the additionality of the Project. The additionality of the Project is assessed in accordance with the "Step 2 Investment analysis" of the "Tool for Demonstration and Assessment of Additionality".

➤ Investment Analysis

To determine whether the project is economically feasible without the revenue from the sale of verified emission reductions, the benchmark analysis is chosen.

The company has made the investment decision based on this feasibility study that was finalized on 27/07/2004. The construction started in January 2008 because of the financial difficulties. However, the financial values are given as \$ in the FSR, therefore the input values taken from the FSR are valid and applicable at the time of the construction starting date.

Equity IRR is selected as a financial indicator. The selected benchmark is assessed to be applicable to the type of IRR calculated as per the guidelines given in "The tool for the demonstration and assessment of additionality". According to the tool a relevant benchmark for equity IRR can be derived from Eurobond rates increased by a suitable risk premium (to reflect private investment and/or project type). The Eurobond rates has been used from the business social networking website for financial market members for the benchmark of the analysis of the project. The Eurobond rate was validated through the given references (www.cbonds.info). The Eurobond rates is given below:

Eurobond Code	Settlement Date / Maturity Date	Currency	Rate
DE000A0BVB39	25-10-2004 / 25-10-2024	USD	9.6 %
UNS89065AF89	24-03-2004 / 24-03-2014	USD	8.0 %
XS0190240324	07-03-2004 / 07-03-2014	USD	7.875 %
US922646BM57	08-10-2004 / 08-10-2014	USD	8.5 %
XS0205828477	16-10-2004 / 16-10-2014	USD	8.875 %
Average			8.57 %

The benchmark value was calculated as 21.66% by adding the estimated total risk premium rate of Turkey/2004 (13.09%) to 2004 Eurobond rate (8.57%). The country risk premium is taken from the study of Prof. Aswath Damodara. The Eurobond rate and risk premium value are at the time of investment decision, which is the date of the FSR.

All the financial indicators are taken from the feasibility data. The electricity sales price is taken as 5.5 Eur/cent per kWh, which is the minimum purchase guarantee of the State. Hence this sales price is accepted by the validation team. Electricity sales price is converted price of 6.66 USD/cent with average exchange rate of Eur/USD (1.2109) in line with the feasibility study. The USD/TL rate is given as 1.40 in the feasibility study. The annual electricity generation is taken as 5,203,000 kWh in line with the generation license.

Equity IRR of Yazı HEPP is calculated as 13.33% based on the parameters given in the table without considering the carbon revenue. If the carbon revenue taking into account as cash flow, the equity IRR increases to 14.25% and the project becomes more attractive for the investor.

The documents used to validate all the assumptions in IRR calculation are given below.

Parameters	Validated Value	Means of validation
Installed Power	1,13 MW	Generation License
Annual electricity generation	5,203,000 kWh	Generation License
Electricity sales price	0.05 €/kWh	The minimum purchase guarantee of the State
Depreciation periods	Equipment : 20 years Construction : 40 years	Local rules and regulations
Operation Cost	129,383 \$	FSR
Total Project Cost	1.289,399 \$	FSR
Prefeasibility Studies	117,218 \$	FSR
Construction Work	718,363 \$	FSR
Electromechanic Equipment	360,000 \$	FSR
Transmission Line	25,500 \$	FSR
Land Cost	12,500 \$	FSR
Other Cost	55,818 \$	FSR
Parity of USD/TL	1.40 \$/TL	FSR
Parity of EUR/USD	1.2119 €/€	The average value at the time of FSR This value was validated through the Turkey Central Bank website.

The depreciation periods of machinery, equipment and other fixed assets are taken as per the local rules and regulations.

➤ Sensitivity Analysis

Sensitivity analysis is applied to the following items:

- Investment Cost
- Operating Cost
- Electricity Revenue

for a decrease of 5% and 10% and for an increase of 5% and 10%.

According to this sensitivity analysis;

When the investment cost decreases 10%, the IRR of the project activity rises up to 15.13% without VER revenues. The IRR value decreases with the rise of the investment cost down to 11.89%.

When the operational cost decreases 10%, the IRR of the project activity rises up to 14.22% without VER revenues. The IRR value decreases with the rise of the investment cost down to 12.44%.

When electricity revenue raises 10%, the IRR of the project activity rises up to 15.70% without VER revenues. The IRR value decreases with the decrease of the electricity revenue down to 10.92% without VER revenues.

The electricity price for renewable power plants has been fixed by Renewable Energy Law and no revisions are expected in the following years. Therefore no fluctuation is expected in the electricity revenue exists. The operational cost will be same during crediting period as the capacity of the power plant is limited by the license given and no additions are applicable. Therefore, the maintenance and operational cost will be same as well as the number of personnel working for the plant.

The above sensitivity analysis reveals the fact that the VER income rises up the economical and financial indicators of the project that makes the project more attractive for the investors. Even though, the value for the electricity generation is taken from the most optimistic values, project is not the most attractive option. However, the carbon revenue increases the attractiveness of the project.

3.3 Monitoring Plan

- Approval of the monitoring methodology:

The Monitoring Plan used for determining the emission reduction by the Project is based on the approved methodology AMS-I.D version 15. All the applicability conditions of the monitoring methodology are the same as the applicability conditions of the baseline methodology that are given under section 3.2 of this validation report. The aim of the plan is to maintain credible and transparent measurement and collection of data for precise calculation of emission reduction during the crediting period

- Correct application and justification of the selected monitoring methodology:

The justification of the choice is explained in section 3.2 of this validation report. The monitoring methodology is applied correctly and appropriately.

- Information about monitoring plan is as follows:

The monitoring plan includes the monitoring of several parameters, the main parameter in the monitoring plan is the quantity of the net electricity that is delivered to the grid, and this parameter will be the basis for the emission reduction calculations.

Monitoring Plan will be implemented by the Project Owner who will keep track of gross electricity production by an automated system. TEIAS officers will do monthly readings for the sale of net electricity fed into the grid and issue reports. Two data sets will be used for cross-checking.

The emission reduction calculations will be based on the TEIAS reports as the power meters are placed where net electricity fed into the grid.

The internal energy consumption will be supplied from the plant generation and will be deducted from the total generation. When there is no electricity production in the plants, the internal consumption will be supplied from grid. The amount of supplied has been reported in monthly TEIAS monitoring reports. In case of emergency, a generator has been provided. However, the emissions from the generator have been neglected as it is estimated to be less than 1% of the total emission reductions achieved.

Two power meters will back up each other for accuracy. Calibration report of meters will be presented in any occurrence.

Also as the Combined Margin emission factor is calculated ex-ante, the parameters used in the calculation of the emission factor is also included in the monitoring plan, but the frequency of monitoring for these parameters are once for each crediting period as per the definitions in the "Tool to calculate the emission factor for an electricity system".

The below table shows the parameters that are included in the monitoring plan together with their monitoring process.

Data /Parameter	Description	Source of Data	Data Unit	Monitoring Frequency	QA/QC Procedures to be Applied
EG _y	Net Electricity generated and delivered to the grid by the Yazı HEPP in year "y"	Metering devices used in power plants, monthly records signed by TEIAS and plants manager and invoices will be used.	MWh	Continuous measurement and monthly recording	Two calibrated ammeters will act as backup for each other. Maintenance and calibration of the metering devices will be made by TEIAS periodically. If the difference between the readings of two devices exceeds 0.2%, maintenance will be done before waiting for periodical maintenance.
Electricity generation	Total electricity generated by all power plants connected to the national grid including low-cost must run power plants between 2006-2008.	TEIAS (Turkish Electricity Transmission Company) annual data	MWh	Once for each crediting period	-
Electricity imported	Electricity imported to the national grid between 2006-2008.	TEIAS (Turkish Electricity Transmission Company) annual data	MWh	Once for each crediting period	-
FC	Fossil fuel consumed by thermal power plants between 2006-2008	TEIAS (Turkish Electricity Transmission Company) annual data	Tonnes or m ³	Once for each crediting period	-
NCV	Net Calorific Value of each fossil fuel type between 2006-2008	TEIAS (Turkish Electricity Transmission Company) annual data	TJ/mass or volume	Once for each crediting period	-
EF _{CO2}	Emission factor for each fuel type	IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in Table 1.4 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories	tCO ₂ /TJ	Once for each crediting period	-
η _{m,y}	Average net energy conversion efficiency of thermal power units connected to the grid	Annex 1 of "Tool to calculate emission factor for an electricity system"	-	Once for each crediting period	-
Capacity addition	Capacity addition to the national grid between 2004-2008	TEIAS (Turkish Electricity Transmission Company) annual data	MWh	Once for each crediting period	-

The monitoring will be performed in-house by the project proponent:

The Project manager who is charged by the Elestas Elektrik A.S. will be responsible for the keeping all relevant data and gathering electricity generated during the completion of the crediting period.

The collected data will be submitted to Ser-Carbon who is responsible to calculate the emission reduction subject to verification; generation data will be used to prepare monitoring reports, which will be used to determine the vintage from the project activity. All these reports will be submitted to the authorized designed operational entity before every verification period.

Overall the monitoring methodology is found appropriate and suitable for this particular project activity.

3.4 Calculation of GHG Emissions

Anthropogenic emission reduction is a function of the expected net amount of electricity produced, for the given project, which amounts to 5,230 MWh per annum. The annual baseline emissions amount to 2,825 tCO₂e. Over the period of ten years, the total amount of baseline emissions will reach 28,250 tCO₂e. For all calculations, the rounded value of the combined emission factor, 0.543 is applied.

Year	Annual estimation of emissions reductions in tones of CO ₂ e
2009	940
2010	2,825
2011	2,825
2012	2,825
2013	2,825
2014	2,825
2015	2,825
2016	2,825
2017	2,825
2018	2,825
2019	1,885
TOTAL	28,250

- *The appropriateness of the source, sink and reservoir:*

The project is a new run-of-river project that does not involve any reservoir hence the project emissions are zero. Also, the leakage emission are zero according to the AMS I.D/Version 15.

The assumptions for the Project Emissions and Leakage made afterwards is found acceptable and suitable for the project activity by the validation team.

- *The correctness and transparency of formulas and factors used,*

The formulas and factors used in the calculation of GHG emissions are found to be transparent and correct by the validation team. The emission factors of fuels that are used in the calculations are taken from the IPCC default values at the lower limit of uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter 1 of Vol.2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories, as suggested by the methodology. The efficiency factors of power plants are taken from Annex 1 of the "Tool to calculate the emission factor for an electricity system". The efficiency factors used are on the conservative side.

- *The assumptions made for estimating GHG emission reductions*

The only assumption is the one project and leakage emissions that are assumed to be zero as per the methodology. Other unknown parameters like the emission factors of fuels are taken from the IPCC values as mentioned above.
- *Uncertainties*

All data presented in the baseline calculations are provided from official sources. Therefore, uncertainties of data sets were not estimated. There are no uncertainties in the calculations.

3.5 Environmental Impact

Environmental Impact Assessment study is not mandatory for that size of projects. However, the project owner is responsible in taking necessary precautions during construction phase and operational phase of the project in accordance with the laws and the agreement between General Directorate of State Hydraulics and the project owner.

In accordance with the agreement, the project owner gave commitment on taking responsibility of any damage on the environment. The articles 18 and 19 of the agreement imply that the project will not change or harm the quality of water which is used to generate electricity. A pre-calculated amount of water flow by considering the human and the habitat activities will be released. Furthermore, the project owner cannot claim any rights on the water quality; however, he/she has to run all the quality tests in order to achieve the State Hydraulic Works' criteria. After evaluating all the tests regarding to water quality state hydraulic works will inform the project proponent in two months in case further improvements in the operation should be implemented.

The company decided to locate the penstock under the soil under in order to do no harm to the environment. In addition 500 (five hundred) trees will be planted, which will change the region in a positive way.

It has been verified depending on the processes that the project complies with the legal requirements.

3.6 Comments by stakeholders

The project is located far away from residential areas and does not have any adverse environmental impacts to the surrounding. No stakeholder meeting has been held due to any residential area, the project proponents will keep the relationship with two or three local home owners. Moreover, headman of the Kayioren Village and the project proponent had a meeting before the construction of the project.

During the site visit it has seen that local people has no problem with the project. The results of the informal meeting with the local residents were open and peaceful. Mr. Idris who owned a bee farm in order to produce honey and Mr. Huseyin Bayram and his wife who hosted the project developer and the validation team. They indicated that the project had contributions to regional development and they were happy to see that a facility that generates electricity has constructed in such a small village. The only concern of the residents was the roads that have been distracted during the construction of the project activity. Also, the headman of the Kayioren village Mr. Ahmet Bilgin requested some construction materials such as cement, ceramics, iron, sand, for the purpose of reconstruction of the mosque and school of the village.

Project owner replied positively to the comments given by the stakeholders. The construction materials requested by the mosque and school will be provided as well. Sufficient amount of water for living and irrigation purpose will be released directly from purification facility very close to power house. In addition, 500 (five hundred) trees will be planted to form a recreational area. The project proponent also stated that the last meeting held by board of directors made a decision on giving scholarship to the local students for their further education purposes. The scholarships are going to be given from a certain proportion of annual profit. The students are going to be chosen from the area where the proposed project is in operation. Project proponent states that by the scholarships, they are aiming not only to operate a facility that generates electricity but also by the time they are located in the area, they wanted to create a sustainable interest for the local people.

The summary of the stakeholders' comments given in PD were confirmed during the site visit. These comments were taken during the site visit, and all of the stakeholders' that were present in the meetings were content with the project activity.

4 VALIDATION CONCLUSION

Bureau Veritas Certification has made the validation of "Yazi Hes 1.13 MW Hydro Power Plant".

The validation was performed on the basis of VCS criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases:

- i) Desk review of the project design and the baseline and monitoring plan; (October 2009)
- ii) Review of the baseline methodology by the specialist and the validator (October 2009-March 2010)
- iii) Review of the investment analysis by the specialist and the validator (October 2009-October 2010)
- iv) Follow-up interviews and on site visit; (November 2009)
- v) Resolution of outstanding issues and the issuance of the final validation report and opinion (October 2010)

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PD provides analysis of prevailing barriers to determine that the project activity itself is not the baseline scenario.

By generating electricity using renewable energy, the project is likely to result in reductions of GHG emissions partially displacing the electricity that would have been generated using fossil fuels. An analysis of the investment barrier demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions. The review of the Project Description (Version 01 dated 06 July 2009 until Version 09 dated 21 October 2010), the site visit and the subsequent follow-up interviews (please see the list of the persons interviewed under section 5.2 of this report) have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. The Project Description was subsequently revised as Version 09 dated 21 October 2010 to resolve the issues that have risen during the interviews and subsequent interactions.

In our opinion, the project correctly applies and meets the relevant VCS requirements and the relevant host country criteria. The validation is based on the information made available to us and the engagement conditions detailed in this report.

5 REFERENCES

5.1. Documents

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

1. PD for "Yazi Hes 1.13 MW Hydro Power Plant"
 - Version 01 dated 06 July 2009
 - Version 02 dated 12 March 2010
 - Version 03 dated 28 March 2010
 - Version 04 dated 14 April 2010
 - Version 05 dated 04 August 2010
 - Version 06 dated 21 September 2010
 - Version 07 dated 18 October 2010
 - Version 08 dated 21 October 2010
 - Version 09 dated 21 October 2010
2. Baseline Calculation Excel Sheet
 - Version 01 dated 06 July 2009
(Turkey_CM_2009_v3-eski)
 - Version 02 dated 12 March 2010
(Turkey_CM_2009_v3)
3. Investment Analysis – IRR Calculation Excel Sheet
 - Version 01 dated 06 July 2009
(YAZI HEPP FINANCIAL ANALYSIS)
 - Version 02 dated 12 March 2010
(YAZI HEPP FINANCIAL ANALYSIS)
 - Version 03 dated 28 March 2010
(YAZI HEPP FINANCIAL ANALYSIS)
 - Version 04 dated 14 April 2010
(YAZI HEPP FINANCIAL ANALYSIS)
 - Version 05 dated 04 August 2010
(YAZI HEPP FINANCIAL ANALYSIS)
 - Version 06 dated 21 September 2010
(YAZI HEPP FINANCIAL ANALYSIS)
 - Version 07 dated 18 October 2010
(YAZI HEPP FINANCIAL ANALYSIS)
 - Version 08 dated 21 October 2010
(YAZI HEPP FINANCIAL ANALYSIS)
 - Version 09 dated 21 October 2010
(YAZI HEPP FINANCIAL ANALYSIS)
4. Yazi HEPP Progress Report dated 20 April 2009
5. The Water Right Agreement with the State Hydraulic Works
6. Purchase agreement of electronic equipment dated 19 December 2007
7. Grid connected renewable electricity generation - AMS I.D version 15
8. Provisional Acceptance Certificate" approved by EMRA dated 01.10.2009
9. The Feasibility Report dated 27.07.2004
10. UNFCCC's Methodological Tool: "Tool for the demonstration and assessment of additionality", version 05.2

11. UNFCCC's Methodological Tool: "Tool to calculate the emission factor for an electricity system", version 02
12. VCS PD Template – 19 November 2007
13. VCS Validation Report Template – 19 November 2007
14. Voluntary Carbon Standard 2007.1

5.2. Persons Interviewed

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

1. Mr. Bulent Ece, Supervisor, Elastas Elektrik Uretim A.S.
2. Mr. Nusret Caglar, Operator, Elastas Elektrik Uretim A.S.
3. Mr. Mehmet Ertunc, Operator, Elastas Elektrik Uretim A.S.
4. Mr. Mahmut Denizhan, Technician, Elastas Elektrik Uretim A.S.
5. Mr. Idris Akpunar, Technician, Elastas Elektrik Uretim A.S.
6. Mr. Caglayan Bulut, Carbon Consultant, Ser-Carbon
7. Mr. Ahmet Bilgin, Kayioren Village Head
8. Mr. Huseyin Bayram, Villager
9. Mr. Mevlut Aksoy, Villager

ANNEX I – Validators' Competence

Lead Verifier: Mr. Ashok Mammen - PhD (Oils & Lubricants)

Bureau Veritas Certification Lead Verifier

Over 20 years of experience in chemical and petrochemical field. Dr. Mammen is a lead auditor for environment, safety and quality management systems. He is also a lead verifier and tutor for GHG projects and has been involved in the validation and verification processes of more than 100 CDM/JI/VCS and other GHG projects.

Verifier: Mrs. Isil Timuroglu – Environmental Engineer

Bureau Veritas Certification SAS- Verifier

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

Verifier : Ms. Hande Sezer – Mining Engineer

Bureau Veritas Certification – Verifier

Hande Sezer has over 3 years experience in coal trade and 4 years of experience in various sectors. She is a verifier for GHG Emission Reduction Projects.

Baseline Specialist: Mrs. Yildiz Arikan - Assoc. Professor Dr

Sabancı University, Faculty of Management, Orhanlı, Tuzla, 34956, Istanbul, Turkey

Yıldız Arikan is an Electrical engineer and is working at Sabancı University. She has supported thesis related with energy . Also she has been conducting research studies on energy including "CO₂ Emission Research" Studies. Academically, Yıldız Arikan is working also on GHG project since 2005.

Investment Analysis Specialists:

Mr. Murat Gencer – Master of Economics

RiskTürk Software Development and Consultancy – Head of Financial Analysis Team

Murat Gencer, consultant and a trainer, has over 11 years of experience in FMCG, software development and banking sectors. He is specialized in project finance, financial modelling, risk management and MS Excel applications.

Internal Technical Reviewer: Ms. Bade Cebeci - Environmental Engineer

Bureau Veritas Certification - Internal Technical Reviewer

Bade Cebeci has over 10 years experience in environmental sciences and auditing. She is a lead auditor for environment, safety and quality management systems. She is also lead verifier for GHG Emission Reduction Projects.

ANNEX II - Validation Protocol

TABLE 1 VALIDATION REQUIREMENTS BASED ON THE VOLUNTARY CARBON STANDARD 2007.1

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
1. VCS Program specific issues					
a. Have the project(s) created another form of environmental credit (for example renewable energy certificates)?	VCS	3.1	The project has not created another form of environmental credit. This is stated under section A.4.4. of the PD.	OK	OK
b. If yes, have the project participants provided a letter from the program operator that the credit has not been used and has been cancelled from the relevant programthe?	VCS	3.1	N/A	OK	OK
c. Are the VCS PD, monitoring reports, and other documents required under the VCS Program in English?	VCS	3.2	Please present the English translation of the documents given in Annex 5.	CL1	OK
2. Project level requirements					
a. General requirements					
a. Have the project proponent applied an approved VCS Program methodology or a methodology from an approved GHG Program based on the list of current VCS Program approved GHG Programs and methodologies as set out on www.v-c-s.org ?	VCS	5.2	The project proponent has applied CDM approved Methodology AMS I.D. version 15 and tools that are referred in AMS I.D.	OK	OK
b. Is the Project Start Date before 1 January 2002? (If yes, a CAR shall be raised as the Project Start Date for non-AFOLU projects for the VCS 2007.1 shall not be before 1 January 2002)	VCS	5.2.1	The project start date is not before 1 January 2002.	OK	OK
c. Will this validation be completed within two	VCS	5.2.1	This validation will be completed within two years	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
years of the Project Start Date? If not, was this validation contracted before 19 November 2008? (If yes validation shall be completed by 19 November 2009 and proof of contracting prior to 19 November 2008 shall be provided)			of the project start date.		
d. Is the earliest Project Crediting Period Start Date under the VCS 2007.1 28 March 2006 for non-AFOLU projects and 1 January 2002 for AFOLU projects ?	VCS	5.2.1	The checklist question is N/A as the Project Crediting Period starts on 2009.	OK	OK
e. Does the project reduce GHG emissions from activities that are included in an emissions trading program; or take place in a jurisdiction or sector in which binding limits are established on GHG emissions?	VCS	5.2.1	The project does not reduce GHG emissions from activities that are included in an emissions trading program; or take place in a jurisdiction or sector in which binding limits are established on GHG emissions. Turkey is not involved in any emission trading program other than the voluntary market and does not have any limits until 2012.	OK	OK
f. If yes, have the project proponents provided evidence that the reductions or removals generated by the project have or will not be used in the emissions trading program or for the purpose of demonstrating compliance with the binding limits that are in place in that jurisdiction or sector? [Such evidence could include: a letter from the program operator or designated national authority that emissions allowances (or other GHG credits used in the program) equivalent to the reductions or removals generated by the project have been cancelled from the program; or national cap as applicable or; purchase and cancellation of GHG	VCS	5.2.1	N/A	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
allowances equivalent to the GHG emissions reductions or removals generated by the project related to the program or national cap]					
g. Have project proponents claimed GHG credits from one project under more than one GHG Program? (If yes, a CAR shall be raised, as Project proponents shall not claim GHG credits from one project under more than one GHG Program)	VCS	5.2.1	The project proponents have not claimed GHG credits from one project under more than one GHG Program. The project is not eligible for any of the compliance markets because of the position of the host country. The project activity is also not listed in the GS registry.	OK	OK
h. Was this project rejected by other GHG Programs?	VCS	5.2.2	The project was not rejected by any other GHG program. Please refer to the above question.	OK	OK
i. If yes, have project proponents:	VCS	5.2.2			
i. clearly stated in its VCS PD all GHG Programs for which the project has applied for credits and why the project was rejected? (Such information shall not be deemed commercially sensitive information	VCS	5.2.2	N/A	OK	OK
ii. provided the VCS Program validator and verifier, VCS Program project database and VCS Program Registry with the actual rejection document(s) including any additional explanations?	VCS	5.2.2	N/A	OK	OK
j. Is this a renewal of the Project Crediting Period?	VCS	5.2.3	This validation is not a renewal of the first crediting period.	OK	OK
k. If yes have a VCS Program approved validator determined that the original project baseline scenario(s) and additionality is still valid or has been updated taking account of new data and	VCS	5.2.3	N/A	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
changed VCS Program requirements where applicable?					
<i>b. Standards and factors</i>					
d. Do standards and factors used to derive GHG emission data as well as any supporting data for additionality and baseline scenario(s) meet the following requirements:	VCS	5.5			
i. be publicly available from a reputable and recognised source (e.g. IPCC, published Government data etc)?	VCS	5.5	The standards and factors used to derive GHG emission data as well as any supporting data are taken from the IPCC and TEIAS which are both publicly available.	OK	OK
ii. be reviewed as part of its publication by a recognised competent organization?			TEIAS and IPCC are both reputable sources, and their publication processes are deemed reliable.	OK	OK
<i>c. Project grouping</i>					
a. Is this a grouped project?	VCS	5.6	It is stated under section A.4.5 of the PD that: <i>"Yazi Hydro-Electrical Power Plant project is an independent project and is not a debundled component of a larger project activity and is not a part of a project group."</i> <i>MoV: It was also validated during the site visit that the project activity is not a debundled component of a larger project activity. There is no registered small-scale CDM project activity or an application to register another small-scale CDM project activity, with the same project participants; in the same project category and technology/measure; and registered within the previous 2 years; and whose project boundary is within 1 km of the project boundary of the</i>	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			<i>proposed small-scale activity at the closest point</i>		
b. If yes , was this grouped project described in one VCS PD?	VCS	5.6	This is not a grouped project. The checklist question is N/A.	OK	OK
c. Does this PD include a description of the central GHG information system and controls associated with the project and its monitoring?	VCS	5.6	This is not a grouped project. The checklist question is N/A.	OK	OK
d. What is the sampling carried out by the VCS verifier?	VCS	5.6	As the project is not a grouped project no sampling was carried out. The checklist question is N/A.	OK	OK
e. Have the sampling of a grouped project taken account of any sub groups and associated activities within each sub group?	VCS	5.6	As the project is not a grouped project no sampling was carried out. The checklist question is N/A.	OK	OK
f. Do this project, which intends to apply for the VCS Program VCUs as part of a grouped project also comply with the VCS Program requirements for grouped projects, detailed in the most recent version of the Program Guidelines 2007.1 on www.v-c-s.org ?	VCS	5.6	This is not a grouped project. The checklist question is N/A.	OK	OK
d. Content of the VCS PD					
a. Is the PD used as a basis for validation prepared in accordance with the latest template and guidance from the VCS?	VCS	5.7	The PD which is used as a basis for validation is prepared in accordance with the latest template of the CDM SSC-PDD and guidance from the VCS.	OK	OK
b. Is there a project title?	PD temp	1.1.	Title: Yazı Hes 1.1MW Hydro Power Plant Version:01 Date:6 th July 2009 Please revise the date of the document in the next version of the PD, this date should be the date when the document is completed. The project capacity is given as 1.17 MW on the	CL2	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			website of EMRA (Electricity Market Regulatory Authority), also during the site visit the capacity was said to be 1.3 MW, however the capacity is given as 1.1 MW in the VCS PD version 01. Please clarify.		
c. Type/Category of the project	PD temp	1.2	The Project fits in: Sectoral Scope Number: 1 Sectoral Scope: Energy Industries – Renewable Energy	OK	OK
i. Is it defined whether the project category is part of a GHG program that has been approved by the VCS Board?	PD temp	1.2	It is not defined whether the project category is part of a GHG program that has been approved by the VCS Board or not. Please clarify.	CL3	OK
ii. Is it specified if the project is a Grouped project?	PD temp	1.2	It is stated under section A.4.5 of the PD that: <i>"Yazi Hydro-Electrical Power Plant project is an independent project and is not a debundled component of a larger project activity and is not a part of a project group."</i> This statement was also validated during the site visit.	OK	OK
d. Is the amount of emission reductions over the crediting period estimated, including project size? (Micro project: Less than 5,000 tonnes CO2 equivalent emissions reductions per year; Mega Project: More than 1,000,000 tonnes CO2 equivalent emissions reductions per year)	PD temp	1.3	Under section A.4.3 of the PD version 01, the amount of emission reductions over the crediting period is estimated. In PD version 01, it is estimated that the project will reduce 3,570 tons CO ₂ every year resulting in a total reduction of 35,700 tons of CO ₂ for the first crediting period. Please also define the project size according to the definitions given in VCS 2007.1.	CL4	OK
e. Is a brief description of the project provided?	PD temp	1.4	The brief description of the project activity is provided under section A.2 of the VCS PD. In this section the location and purpose of the project is	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			given together with the projects contribution to the region's sustainable development.		
f. Is the project location, including geographic and physical information allowing the unique identification and delineation of the specific extent of the project, and including GPS project boundaries, provided?	PD temp	1.5	The detailed information on the project location, including geographic and physical information allowing the unique identification and delineation of the specific extent of the project, and including GPS project boundaries are provided under section A.4.1. of the VCS PD. Please give the detailed coordinates of the power house and Guldurcek Dam.	CL5	OK
g. Duration of the project activity/crediting period	PD temp	1.6			
i. Is the project start date, i.e., the date on which the project began reducing or removing GHG emissions*, provided?	PD temp	1.6	Under Section C.1.1 the starting date of the project activity is given as September 2009. Please give the exact date when the project started to supply electricity to the grid as this date will also be used as the monitoring period start date. Please indicate the date on which a financial commitment was made to the project. Please indicate the date when the project reached financial closure.	CL6	OK
			Under section C.1.2 it is stated that <i>"Expected economical life time of the Project activity is 49 years."</i> However under this section the operational lifetime of the project activity should be given. Please clarify. In the website of EMRA the license of the Yazi power plant is for 40 years. Please clarify how	CL7	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			the lifetime of the project activity can be more than the license.		
ii. Is the crediting period start date, i.e., the date the first monitoring period commenced, provided? (VCS project crediting period: A maximum of ten years which may be renewed at most two times)	PD temp	1.6	Under section C.2.1.1. of the VCS PD version 01. it is stated that the crediting period will start on September 2009, please indicate the crediting period start date as dd/mm/yyyy as the project has already supplied electricity to the grid. Under section C.2.1 of the VCS PD version 01, it is stated as follows: <i>"Renewable crediting will be 10 years, renewable twice. The total crediting period will be 20 years."</i> Please clarify whether the crediting period will be renewed once or twice? If it will be renewed twice the total crediting period shall be 30 years.	CL8	OK
h. Are the conditions prior to project initiation provided?	PD temp	1.7	The project is a Greenfield project which was also verified during the site visit. The conditions prior to project initiation, is also defined under section A.2 of the VCS PD version 01.	OK	OK
i. Is a description of how the project will achieve GHG emission reductions and/or removal enhancements provided?	PD temp	1.8	The description of how the project will achieve GHG emission reductions is given under section A.2 of the VCS PD version 01.	OK	OK
j. Are project technologies, products, services and the expected level of activity described?	PD temp	1.9	The project technologies are given under section A.4.2. Please also describe the expected level of activity.	CL9	OK
k. Does the VCS PD include identification of relevant local laws and regulations related to the project and demonstration of compliance with them?	PD temp	1.10	Please give an identification of relevant local laws and regulations related to the project and demonstrate the compliance of the project activity with these laws and regulations.	CAR1	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
l. Are risks that may substantially affect the project's GHG emission reductions or removal enhancements identified?	PD temp	1.11	Under section A.2. of the VCS PD it is stated as follows: <i>"No risks are identified that may substantially affect the implementation of the Project and GHG emission reductions and removal enhancement."</i>	OK	OK
m. Is confirmation that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction demonstrated?	PD temp	1.12	Yes, confirmation that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction demonstrated under section A.2 of the VCS PD.	OK	OK
n. Has the project created another form of environmental credit (for example renewable energy certificates)?	PD temp	1.13	Under section A.4.4. of the VCS PD version 01 it is stated that: <i>"No public funding or ODA is used for the project. There is no green investment scheme in Turkey and the project does not create any other form of environmental credits."</i>	OK	OK
o. If yes, has the proponent provided a letter from the program operator that the credit has not been used and has been cancelled from the relevant program?	PD temp	1.13	N/A	OK	OK
p. Was the project rejected under other GHG programs (if applicable)	PD temp	1.14	The project has not been rejected under any other GHG programs. The project is not eligible for any of the compliance markets because of the position of the host country. The project activity is not listed in the GS registry.	OK	OK
q. If yes, does the project:	PD temp	1.14	N/A	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
i. clearly state in its VCS PD all GHG programs for which the project has applied for credits and why the project was rejected? (Such information shall not be deemed commercially sensitive information)	PD temp	1.14	N/A	OK	OK
ii. provide the VCS verifier and Registry with the actual rejection document(s) including explanation?	PD temp	1.14	N/A	OK	OK
r. Are project proponents roles and responsibilities, including contact information of the project proponent, other project participants provided?	PD temp	1.15	The contact information of the project proponent and carbon consultants are given in a tabular format under Annex 1 of the VCS PD. Please also briefly define the responsibilities of the contact persons regarding the carbon crediting process.	CL10	OK
s. Is any information relevant for the eligibility of the project and quantification of emission reductions or removal enhancements, including legislative, technical, economic, sectoral, social, environmental, geographic, site-specific and temporal information provided?	PD temp	1.16	Information relevant for the eligibility of the project and quantification of emission reductions or removal enhancements, including legislative, technical, economic, sectoral, social, environmental, geographic, site-specific and temporal information are given under sections A.2 and A.4.3 of the PD version 01.	OK	OK
t. Is there any commercially sensitive information that has been excluded from the public version of the VCS PD that will be displayed on the VCS Project Database?	PD temp	1.17	Please define if there is any commercially sensitive information that has been excluded from the public version of the VCS PD that will be displayed on the VCS Project Database.	CL11	OK
u. If yes, was it listed?	PD temp	1.17	There is no commercially sensitive information and this is also stated in the PD.	OK	OK
v. Are title and reference of the VCS methodology applied to the project activity and explanation	PD temp	2.1	Under section B.1 of the VCS PD, the title and the reference of the methodology are given as	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
of methodology choices provided?			follows: <i>"Approved methodology for small scale projects, AMS-I.D. "Grid connected renewable electricity generation" version 15 has been applied for baseline and monitoring methodology. AMS-I.D. refers to the following tool: "Tool to calculate the emission factor for an electricity system", Version 01.1"</i>		
w. Does the project use one of the VCS program approved project methodologies and provide information relevant to methodology deviations or methodology revisions?	PD temp	2.1	The project uses a Clean Development Mechanism approved methodology without any deviations or revisions to the existing methodology. UNFCCC Clean Development Mechanism methodologies are approved under the VCS.	OK	OK
x. Are the choice of the methodology and its applicability to the project activity justified?	PD temp	2.2	The choice of the methodology and its applicability to the project activity is justified under section B.2 of the VCS PD version 01 as follows: <i>"The choice of methodology AMS-I.D version 15 is justified as the Project activity meets its applicability criteria: The Yazi HPP Project activity is the installation of a 1.1 MW hydro power plant and the project supplies electricity to and displace electricity from an electricity distribution system that would have been supplied by at least one fossil fuel fired generating unit."</i> Please also justify your choice of project category under section B.2.	CL12	OK
y. Are GHG sources, sinks and reservoirs	PD	2.3	Under section B.3 of the VCS PD version 01, the	CL13	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
identified for the baseline scenario and for the project?	temp		<p>GHG sources are identified for both the baseline scenario and the project using the tabular format.</p> <p>For CH₄ it is stated as follows: <i>"Minor emission source since power density is very high. Excluded for simplification"</i></p> <p>Please clarify how the power density is calculated and send the calculation details to the validation team.</p>		
z. Is it described how the baseline scenario is identified and the identified baseline scenario?	PD temp	2.4	<p>Under section B.4 of the VCS PD version 01 the baseline scenario and its development is described in detail. The baseline scenario is defined as follows: <i>"Electricity delivered to the grid by the Project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system"</i>.</p> <p>It is also approved by the validation team that the selected baseline scenario is in line with the methodology.</p>	OK	OK
aa. Has the project proponent selected the most reasonable baseline scenario for the project?	PD temp	2.4	Yes. The project proponent has selected the most reasonable baseline scenario for the project activity.	OK	OK
bb. Does it reflect what most likely would have occurred in the absence of the project?	PD temp	2.4	The baseline scenario reflects what most likely would have occurred in the absence of the project activity.	OK	OK
cc. Is it described how the emissions of GHG by	PD	2.5	Under section B.5 of the VCS PD version 01, it is	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
source in baseline scenario are reduced below those that would have occurred in the absence of the project activity (assessment and demonstration of additionality)?	temp		described how the GHG emissions by source are reduced below those that would have occurred in the absence of the project activity using the guidance given in Attachment A to Appendix B of the UNFCCC CDM "Indicative Simplified Baseline and Monitoring Methodologies For Selected Small Scale CDM Project Activity Categories"		
dd. Has the project proponent demonstrated, in the VCS PD, in addition to describing how the project meets the VCS methodology, that the project is additional based on one of the tests, the project test, the performance test, and technology test?	PD temp	2.5	The project proponents have used the the guidance given in Attachment A to Appendix B of the UNFCCC CDM "Indicative Simplified Baseline and Monitoring Methodologies For Selected Small Scale CDM Project Activity Categories" Therefore the checklist question is N/A.	OK	OK
ee. Are title and reference of the VCS methodology (which includes the monitoring requirements) applied to the project activity and explanation of methodology choices provided?	PD temp	3.1	The title and reference of the VCS methodology applied to the project activity and explanation of methodology choices are explained under section B.2. of the VCS PD version 01.	OK	OK
ff. Is monitoring, including estimation, modelling, measurement or calculation approaches describe including:	PD temp	3.2			
i. Purpose of monitoring?	PD temp	3.2	The purpose of monitoring is not described. Please describe the purpose of monitoring under section B.7.2.	CAR2	OK
ii. Types of data and information to be reported, including units of measurement?	PD temp	3.2	Types of data and information to be reported including the units of measurement is given in a tabular format under section B.7.1 of the VCS PD version 01.	OK	OK
iii. Origin of the data?	PD temp	3.2	The origin of the data is also given in the table under section B.7.1 of the VCS PD version 01.	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
iv. Monitoring, including estimation, modelling, measurement or calculation approaches?	PD temp	3.2	Information about the monitoring is given under section B.7.2 of the VCS PD version 01.	OK	OK
v. Monitoring times and periods, considering the needs of intended users?	PD temp	3.2	Monitoring times and periods are described in a tabular form under section B.7.1 of the VCS PD version 01.	OK	OK
vi. Monitoring roles and responsibilities ?	PD temp	3.2	Monitoring roles and responsibilities are defined under section B.7.2 of the VCS PD version 01. The plant manager will be responsible for collection of the data.	OK	OK
vii. Managing data quality?	PD temp	3.2	QA/QC procedures are given under section B.7.1 of the VCS PD version 01.	OK	OK
gg. Are data and parameters monitored/selecting relevant GHG sources, sinks and reservoirs for monitoring or estimating GHG emissions and removals described in the tabular form including:	PD temp	3.3	<p>The only data and parameter that is being monitored is EG_y.</p> <p>However as UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" is used for the calculation of the grid emission factor, the following parameters needs to be included in the monitoring plan:</p> <ul style="list-style-type: none"> $\emptyset FC_{i,y}$ $\emptyset NCV_{i,y}$ $\emptyset EF_{CO_2,I,y}$ $\emptyset EG_y$ $\emptyset \eta_{m,y}$ <p>As $EF_{grid,CM}$ is calculated using these parameters, all of these parameters needs to be monitored.</p> <p>Please revise the monitoring plan to include the above mentioned parameters.</p>	CAR3	OK
i. Data unit?	PD	3.3	In the VCS PD version 01, data unit is given as	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
	temp		MWh for EG _y as per the methodology.		
ii. Description?	PD temp	3.3	In the VCS PD version 01, the description for EG _y is given as per the methodology.	OK	OK
iii. Source of data to be used?	PD temp	3.3	In the VCS PD version 01, the source of data used for EG _y is given as follows: <i>"Metering devices used in power plants, monthly records signed by TEIAS and plants manager and invoices will be used."</i>	OK	OK
iv. Value of data applied for the purpose of calculating expected emissions reductions?	PD temp	3.3	In the VCS PD version 01 the value applied for the parameter EG _y is given as follows: <i>"Estimated annual generation forming the basis for emission reduction calculation is 5.844 GWh"</i> Please explain how this value is calculated by giving the calculation details.	CL14	OK
v. Description of measurement methods and procedures to be applied?	PD temp	3.3	In the VCS PD version 01, the description of measurement methods and procedures to be applied are given in a tabular format as per the methodology for the parameter EG _y .	OK	OK
vi. QA/QC procedures to be applied?	PD temp	3.3	QA/QC procedures to be applied for the parameter EG _y is given in a tabular format.	OK	OK
vii. Any comment?	PD temp	3.3	No comment is given for parameter EG _y .	OK	OK
hh. Is the monitoring plan described?	PD temp	3.4	The monitoring plan is described in detail under section B.7.2 of the VCS PD version 01. More information about the monitoring is given in Annex 4. It is stated in Annex 4 as follows: <i>"The Monitoring Plan used for determining the emission reduction by the Project is based on the approved methodology ACM0002."</i>	CL15	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			Please clarify which methodology is used for the monitoring activities.		
ii. Are methodological choices explained?	PD temp	4.1	Methodological choices are explained under section B.6.1 of the VCS PD version 01.	OK	OK
jj. Are GHG emissions and/or removals for the baseline scenario quantified?	PD temp	4.2	GHG emissions for the baseline scenario are quantified under section B.6.3 of the VCS PD version 01.	OK	OK
kk. Are GHG emissions and/or removals for the project quantified?	PD temp	4.3	According to the Methodology AMS I.D. the project GHG emissions are negligible. However please clarify how the internal energy need of the project activity will be met when there is no electricity production in the plant.	CL16	OK
ll. Are GHG emission reductions and removal enhancements for the GHG project quantified?	PD temp	4.4	The GHG emission reductions for the GHG project are quantified under section B.6.3 of the VCS PD version 01.	OK	OK
mm. Was a summary of environmental impact assessment, when such an assessment is required by applicable legislation or regulation, provided? ISO14064-2, 5.2.k	PD temp	5	An EIA exemption letter from the Cankiri Country Environment and Forestry Directorate has been presented on Annex 5 of the VCS PD version 01.	OK	OK
nn. Were relevant outcomes from stakeholder consultations and mechanisms for on-going communication provided?	PD temp	6	Under section E of the VCS PD version 01 it is stated that: <i>"The project is located far away from residential areas and does not have any adverse environmental impacts to the surrounding. Therefore; no stakeholder consultation is planned."</i> However during the site visit it was seen that the power house is very close to a small village. Please include the comments of the village	CL17	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			residents in the stakeholders comments section of the VCS PD.		
oo. Was a chronological plan for the date of initiating project activities, date of terminating the project, frequency of monitoring and reporting and the project period, including relevant project activities in each step of the GHG project cycle provided?	PD temp	7	A chronological plan for the date of initiating project activities is not given. Please give a chronological plan including: <ul style="list-style-type: none"> ∅ date of initiating the project activities ∅ terminating the project, ∅ frequency of monitoring and reporting ∅ The project period, including relevant project activities in each step of the GHG project cycle 	CAR4	OK
pp. Was evidence of proof of title provided through one of the following:	PD temp	8.1			
i. a legislative right?	PD temp	8.1	The generation license is attached to Annex 5 of the VCS PD version 01 as a proof of title.	OK	OK
ii. a right under local common law?	PD temp	8.1	N/A	OK	OK
iii. ownership of the plant, equipment and/or process generating the reductions/removals?	PD temp	8.1	N/A	OK	OK
iv. a contractual arrangement with the owner of the plant, equipment or process that grants all reductions/removals to the proponent?	PD temp	8.1	N/A	OK	OK
qq. Does the project reduce GHG emissions from activities that participate in an emissions trading program, or take place in a jurisdiction or sector in which binding limits are established on GHG emissions?	PD temp	8.2	N/A	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
rr. If yes, have project proponents provided evidence that the reductions or removals generated by the project have or will not be used in the Program or jurisdiction for the purpose of demonstrating compliance, such as:	PD temp	8.2	N/A	OK	OK
i. a letter from the Program operator or designated national authority that emissions allowances (or other GHG credits used in the Program) equivalent to the reductions/removals generated by the project have been cancelled from the Program; or national cap as applicable?	PD temp	8.2	N/A	OK	OK
ii. purchase and cancellation of GHG allowances equivalent to the reductions/removals generated by the project related to the Program or national cap?	PD temp	8.2	N/A	OK	OK
<i>e. Additionality</i>					
a. Has the project proponent demonstrated that the project is additional using one of the following tests: Test 1 - The project test; Test 2 - Performance test; Test 3 - Technology test?	VCS	5.8	The project proponents have used the UNFCCC CDM Indicative baseline and monitoring methodology AMS I.D., according to this methodology the additionality of the small scale project activity is demonstrated using the guidance given in Attachment A to Appendix B to simplified modalities and procedures for small scale CDM project activities. The additionality of the proposed project activity will be assessed using the additionality protocol table (Table 3).	OK	OK
b. If the project proponent used Test 1:	VCS	5.8			

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
iii. Step 1 – Regulatory Surplus - Is the project be mandated by any enforced law, statute or other regulatory framework? (If yes a CAR shall be issued and the project shall be deemed non additional).	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
iv. Step 2 – Implementation Barriers – Does the project face one (or more) distinct barrier(s) compared with barriers faced by alternative projects?	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
i. Investment Barrier – Does the project face capital or investment return constraints that can be overcome by the additional revenues associated with the generation of VCUs?	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
ii. Technological Barriers – Does the project face technology-related barriers to its implementation?	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
iii. Institutional barriers – Does the project face financial, organizational, cultural or social barriers that the VCU revenue stream can help overcome?	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
v. Step 3 – Common Practice	VCS	5.8			
i. Is project type common practice in sector/region, compared with projects that have received no carbon finance?	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
ii. if it is common practice, have the	VCS	5.8	Please refer to question a above. The checklist	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
project proponents identified barriers faced compared with existing projects?			question is N/A.		
iii. Is the demonstration that the project is not common practice based on guidance in the GHG Protocol for Project Accounting, Chapter 7?	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
<p>iv. Was it collected data on all baseline candidates within the geographic area and calculating a relative percentage for each different technology or practice?</p> <p>Common practice refers to the predominant technologies or practices in a given market, as determined by the degree to which those technologies or practices have penetrated the market (defined by a specified geographic area).</p> <p>This percentage could be based on the number of plants or sites using each technology or practice, or could be Weighted by the proportion of the total output for the market that is attributed to each technology or practice.</p>	GHG PROT OCO L	7.4.2 AND 7.6	Please refer to question a above. The checklist question is N/A.	OK	OK
c. If the project proponent used Test 2:	VCS	5.8			

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
vi. Step 1 – Regulatory Surplus - Is the project be mandated by any enforced law, statute or other regulatory framework? (If yes a CAR shall be issued and the project shall be deemed non additional).	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
vii. Step 2: Performance Standard	VCS	5.8			
i. Are the emissions generated per unit output by the project below the level that has been approved by the VCS Program for the product, service, sector or industry, as the level defined to ensure that the project is not business-as-usual?	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
ii. Are performance standard based additionality tests approved through the double approval process and by the VCS Board? (The list of approved performance standards is on www.v-c-s.org)	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
d. If the project proponent used Test 3:	VCS	5.8			
viii. Step 1: Regulatory Surplus - Is the project be mandated by any enforced law, statute or other regulatory framework? (If yes a CAR shall be issued and the project shall be deemed non additional).	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK
ix. Step 2: Technology Additionality – Are the project and its location contained in the list of project types and applicable areas	VCS	5.8	Please refer to question a above. The checklist question is N/A.	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
approved as being additional by the VCS Program? (The approved list is available on www.v-c-s.org)					
f. Identifying GHG sources, sinks and reservoirs relevant to the project					
a. Refer to Clause 6, under Methodologies.	VCS	5.9	Refer to Clause 6, under Methodologies.	-	-
g. Determining the baseline scenario					
a. Has the project proponent selected the most conservative baseline scenario for the project, based on the requirements in the applicable VCS methodology?	VCS	5.10	The project proponent has used AMS I.D. Methodology. The baseline scenario is defined under section B.4. of the VCS PD version 01 as follows: <i>"Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system"</i>	OK	OK
b. Does the baseline scenario set out the geographic scope as applicable to the project?	VCS	5.10	The baseline scenario is determined according to the methodology AMS I.D. The geographic scope is defined as Turkish National Grid.	OK	OK
c. Has the project participant demonstrated that the project has met the requirements in ISO 14064-2:006 clause 5.4?	VCS	5.10	The baseline scenario is determined according to the methodology AMS I.D. therefore the checklist question is N/A.	OK	OK
i. Does the project proponent select or establish criteria and procedures for identifying and assessing potential baseline scenarios considering the	ISO 1406 4.2	5.4	The baseline scenario is determined according to the methodology AMS I.D. therefore the checklist question is N/A.	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
<p>following ?</p> <p>a) the project description, including identified GHG sources, sinks and reservoirs (see 5.3);</p> <p>b) existing and alternative project types, activities and technologies providing equivalent type and level of activity of products or services to the project;</p> <p>c) data availability, reliability and limitations;</p> <p>d) other relevant information concerning present or future conditions, such as legislative, technical, economic, sociocultural, environmental, geographic, site-specific and temporal assumptions or projections.</p>					
<p>ii. Does the project proponent demonstrate equivalence in type and level of activity of products or services provided between the project and the baseline scenario and shall explain, as appropriate, any significant differences between the project and the baseline scenario ?</p>	ISO 1406 4.2	5.4	The baseline scenario is determined according to the methodology AMS I.D. therefore the checklist question is N/A.	OK	OK
<p>iii. Does the project proponent select or establish, explain and apply criteria and procedures for identifying and justifying the baseline scenario ?</p>	ISO 1406 4.2	5.4	The baseline scenario is determined according to the methodology AMS I.D. therefore the checklist question is N/A.	OK	OK
<p>iv. In developing the baseline scenario, does the project proponent select the assumptions, values and procedures that help ensure that GHG emissions reductions or removal enhancements are not over-estimated ?</p>	ISO 1406 4.2	5.4	The baseline scenario is determined according to the methodology AMS I.D. therefore the checklist question is N/A.	OK	OK
<p>v. Does the project proponent select or establish, justify and apply criteria and</p>	ISO 1406	5.4	The baseline scenario is determined according to the methodology AMS I.D. therefore the checklist	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
procedures for demonstrating that the project results in GHG emissions reductions or removal enhancements that are additional to what would occur in the baseline scenario ?	4.2		question is N/A.		
d. Has the project participant demonstrated that the project has met all relevant regulations, legislation and project approvals (e.g. environmental permits)?	VCS	5.10	The copies of the water usage right agreement, generation license and the EIA exemption letter are presented in Annex 5 of the PD version 01. Please give an identification of relevant local laws and regulations related to the project and demonstrate the compliance of the project activity with these laws and regulations.	CAR1	OK
<i>h. Monitoring the GHG project</i>					
a. Has the project proponent established and maintained criteria and procedures for obtaining, recording, compiling and analysing data and information important for quantifying and reporting GHG emissions and/or removals relevant for the project and baseline scenario (i.e. GHG information system)?	VCS	5.11	The project proponent has established criteria and procedures for obtaining, recording, compiling and analysing data and information important for quantifying and reporting GHG emission reductions relevant for the project and baseline scenario. Whether the project proponent maintains these procedures shall be checked during the verification of the project activity.	OK	OK
b. Do the monitoring procedures include?	VCS	5.11			
i. purpose of monitoring?	VCS	5.11	Please refer to question ff-i of this checklist. The application of the monitoring procedures will be checked during the verification of the project activity.	OK	OK
ii. types of data and information to be reported, including units of measurement?	VCS	5.11	Please refer to question ff-ii of this checklist. The application of the monitoring procedures will be checked during the verification of the project	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			activity.		
iii. origin of the data?	VCS	5.11	Please refer to question ff-iii of this checklist. The application of the monitoring procedures will be checked during the verification of the project activity.	OK	OK
iv. monitoring methodologies, including estimation, modelling, measurement or calculation approaches?	VCS	5.11	Please refer to question ff-iv of this checklist. The application of the monitoring procedures will be checked during the verification of the project activity.	OK	OK
v. monitoring times and periods, considering the needs of intended users?	VCS	5.11	Please refer to question ff-v of this checklist. The application of the monitoring procedures will be checked during the verification of the project activity.	OK	OK
vi. monitoring roles and responsibilities?	VCS	5.11	Please refer to question ff-vi of this checklist. The application of the monitoring procedures will be checked during the verification of the project activity.	OK	OK
vii. GHG information management systems, including the location and retention of stored data?	VCS	5.11	Please refer to question ff-vii of this checklist. The application of the monitoring procedures will be checked during the verification of the project activity.	OK	OK
c. Where measurement and monitoring equipment is used, does the project proponent ensure the equipment is calibrated according to current good practice?	VCS	5.11	It is stated under section B.7.1 of the PD version 01 that: <i>"Two calibrated ammeters will act as backup for each other. Maintenance and calibration of the metering devices will be made by TEIAS periodically. If the difference between the readings of two devices exceeds 0.2%, maintenance will be done before waiting for periodical maintenance"</i>	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			The calibration records of all the equipment used in monitoring shall be checked during the verification of the project activity.		
d. Does the project proponent apply GHG monitoring criteria and procedures on a regular basis during project implementation?	VCS	5.11	The project is at validation stage therefore the checklist question is N/A.	OK	OK
<i>i. Monitoring reports for the GHG project</i>					
a. Do monitoring reports include all the monitoring data, calculations, estimations, conversion factors and others standard factors as defined in the monitoring clause of the applied VCS Program methodology and set out in the VCS PD? (A list of VCS approved methodologies is available on www.v-c-s.org)	VCS	5.12	The project is at validation stage therefore the checklist question is N/A.	OK	OK
<i>j. Records relating to the project</i>					
a. Has the project proponent kept all documents and records in a secure and retrievable manner for at least two years after the end of the project crediting period.?	VCS	5.13	The project is at validation stage therefore the checklist question is N/A.	OK	OK
<i>k. Information to validator and verifier</i>					
a. Has the project proponent made available to the validator the VCS PD, proof of title and any requested supporting information and data needed to evidence statements and data in the VCS PD and proof of title?	VCS	5.14	Yes, the project proponent has made the VCS PD, proof of title and all the information and data available to the validation team.	OK	OK
b. Has the project proponent made the VCS PD and validation report available to the verifiers as well as a monitoring report applicable to the period of monitoring and any requested	VCS	5.14	The project is at validation stage therefore the checklist question is N/A.	OK	OK

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
supporting information and data needed to evidence statements and data in the monitoring report?					

TABLE 2 BASELINE AND MONITORING METHODOLOGIES: AMS I.D VERSION 15

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Technology/measure					
1.1. Does the project comprise renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal, and renewable biomass, that supply electricity to and/or displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit.?	PDv01 A.2	DR	The project is a hydro power plant which comprises a horizontal axis francis type turbine, and supplies electricity to the Turkish grid which is mainly supplied by fossil fuel fired generation units.	OK	OK
2. Boundary					
2.1. Does the project boundary encompass the physical, geographical site of the renewable generation source?	PDv01 A.4.1.4	DR	Yes, the project boundary encompasses the physical, geographical site of the renewable generation source.	OK	OK
3. Baseline					
3.1. Did the project participants identify the most plausible baseline scenario among all realistic and credible alternatives(s)?	PDv01 B.4	DR	The baseline scenario is identified as follows: <i>"Electricity delivered to the grid by the Project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system"</i>	OK	OK
3.2. Was electricity production calculated considering the formula presented at item 10 of the approved methodology?	PDv01 B.6.1	DR	The emission reduction is calculated according to the procedures prescribed in UNFCCC methodological tool "Tool to calculate emission factor for an electricity system" version 01.1	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	PDv01 B.6.1	DR	<p>as required by the methodology. This was also stated in section B.6.1 of the VCS PD version 01.</p> <p>The details of the emission factor calculations are given under sections B.6.1, B.6.2, B.6.3 of the VCS PD version 01.</p> <p>Regarding the EF calculations the following issues need further clarification and/or correction:</p> <p>Under section B.6.1, it is stated as follows: <i>"According to AMS-I.D requires that the emission factor for the grid system is calculated in accordance with the "Tool to calculate the emission factor for an electricity system", version 01.1."</i></p> <p>After this statement the methodological choices regarding the OM and BM calculation methods is given.</p> <p>The formulas given in this section of the VCS PD do not exist in the Tool. Please clarify where these formulas are taken from and why the formulas given in the tool is not used.</p> <p>Please also define how the Project Emissions and Leakage Emissions are taken into consideration according to the methodology under this section.</p>	CAR5	OK
	PDv01 B.6.2	DR	<p>Regarding the parameter $FC_{i,y}$ which is given under the data/parameter tables under section B.6.2 of the PD version 01:</p> <ol style="list-style-type: none"> The description of the parameter is not complete, please clarify 	CL18	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	PDv01 B.6.2	DR	<p>2. Please give the complete web links for the source of data,</p> <p>3. Please also include the 2008 values which are published on the TEIAS website</p> <p>Regarding the parameter $NCV_{i,y}$ which is given under the data/parameter tables under section B.6.2 of the PD version 01:</p> <p>1. The data unit is not complete, please clarify</p> <p>2. Please give detailed information and the complete links to the data which are used to calculate the NCV,</p> <p>3. Please also include the 2008 values which are published on the TEIAS website</p> <p>4. In the justification section it is stated that this data is used for BM calculations, however this value is only used in the OM calculations according to the formulas given in the tool</p>	CL19	OK
	PDv01 B.6.2	DR	<p>Regarding the parameter $EF_{CO_2, i, y, j}$ which is given under the data/parameter tables under section B.6.2 of the PD version 01:</p> <p>1. The parameter name is not correct,</p> <p>2. Please give the complete reference for the source of data</p> <p>3. Please correct the EF values for lignite, fuel oil, natural gas according to the values given in IPCC</p>	CL20	OK
	PDv01	DR	Regarding the parameter GE which is given	CAR6	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	B.6.2		<p>under the data/parameter tables under section B.6.2 of the PD version 01:</p> <ol style="list-style-type: none"> 1. The name of the parameter and the definition is not correct. Please amend according to the guidance given in the tool. 2. Please give the values applied in the 'value applied' section of the table. 3. In the comment section of the table it is stated that Applied in the calculation of the simple OM, where fuel consumption data is available for all power plants. However according to the tool this parameter is only used for the calculation of BM. Please clarify. 		
	PDv01 B.6.3	DR	<p>In section B.6.3 of the VCS PD version 01, under step 1, please define the relevant electricity system in more detail according to the requirements given in the UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system". Please justify your assumptions.</p>	CL21	OK
	PDv01 B.6.3	DR	<p>Under Step 2, please select the Method for calculation of the OM and please justify your selection by explaining why the other methods are not suitable for this project.</p>	CL22	OK
	PDv01 B.6.3	DR	<p>Under Step 3, Table 4 is referred to for NCV calculations, however in Table 4 default emission factors are given. There is also another Table 4 where sensitivity calculations are given. Please check the table numbering throughout the entire document.</p>	CL23	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	PDv01 B.6.3	DR	<p>Under Step 3, please give detailed information on how the NCV is calculated, and please revise your calculations using the most up to date data on TEIAS website.</p> <p>In the "attdg2iw"excel sheet where EF calculations are shown, it is seen that, under the OM calculations, first an average NCV is calculated, then this average value is used for the OM calculations. However according to the tool, the NCV value is the NCV of fossil fuel type i, in year y. Please revise your calculations using the yearly NCV values.</p>	CL24	OK
	PDv01 B.6.3	DR	<p>According to the UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" the simple OM emission factor shall be calculated as a generation weighted average. However in the OM calculations the calculations are based on a total value. Please correct your calculations according to the tool.</p>	CAR7	OK
	PDv01 B.6.3	DR	<p>In the BM calculations under step 5, please revise the calculations using the capacity addition data from the TEIAS capacity projection documents, for the years 2007 and 2008.</p> <p>For 2006 the annual generation of the plants can also be found in the capacity projection document of TEIAS. Please revise your calculations using this data.</p>	CL25	OK
	PDv01 B.6.3	DR	<p>In the BM calculations (step 5) both in the VCS PD version 1 and the excel calculation sheet, please define what the parameter EF_{BAT}</p>	CL26	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			is taken from. This parameter is not referred to in the tool. Please clarify.		
4. Monitoring					
4.1 Does the monitoring consist of metering the electricity generated ?	PDv01 B.7.2	DR	The monitoring consists of metering the electricity generated.	OK	OK

TABLE 3 CHECKLIST BASED ON METHODOLOGICAL TOOL FOR ASSESSMENT OF ADDITIONALITY

CHECKLIST QUESTION	Ref	MoV	COMMENTS	Draft Concl	Final Concl
1. Additionality of a project activity					
a. Does the VCS-PD state the latest version of the additionality tool being used?	PDv01 B.5	DR	As stated under section B.5 of the VCS PD, "Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities" is used to demonstrate additionality	OK	OK
b. Has one of the barriers identified to demonstrate additionality; 1. Investment Barrier, 2. Technological Barrier, 3. Barrier due to prevailing practice, 4. Other Barriers.	PDv01 B.5	DR	To demonstrate the additionality the project proponent has identified "Investment Barriers".	OK	OK
c. Barrier analysis have all the sub-steps as below followed? 1. Identify barriers that would prevent the implementation of the proposed VCS project activity. 2. Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity):	PDv01 B.5	DR	According to the guidance given in "Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities" only the identification of the barriers is required. The project proponents are not required to show that the identified barriers would not prevent the implementation of at least one of the alternatives, therefore the checklist question is N/A.	OK	OK
d. Identify barriers that would prevent the implementation of the proposed VCS project 1. Investment barriers: For alternatives undertaken and operated by private entities: Similar activities have only been implemented with grants or other non-commercial finance terms. No private	PDv01 B.5	DR	In PD v01 under section B.5, the following barriers are identified: <i>"High transaction costs in developing renewable energy and energy efficiency investments. The transaction cost of developing renewable energy (other than large hydro and wind) is usually high. Such costs</i>	CL27	OK

<p>capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin.</p> <p>2. Technological barriers: Skilled and/or properly trained labour to operate and maintain the technology is not available in the relevant country/region, which leads to an unacceptably high risk of equipment disrepair and malfunctioning or other underperformance; Lack of infrastructure for implementation and logistics for maintenance of the technology, Risk of technological failure: the process/technology failure risk in the local circumstances is significantly greater than for other technologies that provide services or outputs comparable to those of the proposed CDM project activity, as demonstrated by relevant scientific literature or technology manufacturer information, The particular technology used in the proposed project activity is not available in the relevant region.</p> <p>3. Barriers due to prevailing practice: The project activity is the "first of its kind".</p> <p>4. Other barriers, preferably specified in the underlying methodology as examples.</p>	<p><i>can arise from feasibility studies for small hydro projects"</i></p> <p>The above mentioned barrier is not a specific barrier for the project activity. Please clarify.</p>		
	<p><i>"One of the key limitations for wider project implementation of renewable energy financing is the lack of financial resources and proper lending facilities, particularly for small-scale projects and SMEs. Financial institutions view renewable energy sector as higher risks, due to lack of technical capacity on the part of lenders to evaluate such projects and potential borrowers being unable to establish bankability of their projects"</i></p> <p>This barrier is also not specific for the project activity or hydro power projects. Please clarify.</p>	CL28	OK
	<p><i>"The project owner has to face higher risks during construction phase. The law for Public Tender Act¹ foresees a contingency amount of 10% for turn-key works contracts and 20% for unit price contracts in Turkey. This is mainly because of fluctuating prices of materials and foreign currency rates which the cost assumptions are based. No detailed bill of quantities has been calculated during feasibility studies, therefore; a risk of at least 20% cost increase exist fort he developer."</i></p> <p>Please explain this barrier in detail by giving objective evidences.</p>	CL29	OK
	<p><i>"Market fluctuations in electricity prices is another barrier. The key variable determining</i></p>	CL30	OK

¹ Law No:4735 Public Tender Act , Article.24 (<http://www.muhasibat.gov.tr/mevzuat/kanun/docs/4735.doc>)

			<p><i>the economic rate of return is the price at which these plants sell the electricity they produce. The actual price at which they sell varies from day to day and over the course of a day depending on the spot market conditions. Run of hydro power plants cannot compete with the thermal power plants which can operate continuously."</i></p> <p>The fluctuations in electricity prices are not specific for hydro power plants. Please clarify.</p>		
			<p><i>"The Project is in an undeveloped region where only 52,87% of the roads are asphalted in the rural land. Cankiri is ranked as 66th in terms of the share in GDP in the country and 59th in terms of socio-economical development among 81 provinces . The Project owner has to face technical constraints in terms of available services in the region."</i></p> <p>Please define the technical constraints that the project owner had to face in detail by giving objective evidences.</p>	CL31	OK
			<p>All the barriers identified in the VCS PD version 1 under section B.5 are not specific for the project and are not realistic and credible. Please revise the barrier analysis making sure that the barriers that are identified are realistic and credible and are specific for this type of project activities.</p>	CAR8	OK
<p>e. Common practice analysis have all the sub-steps as below followed?</p> <ol style="list-style-type: none"> 1. Analyze other activities similar to the proposed project activity 2. Discuss any similar Options that are occurring 	PDv01	DR	<p>According to the guidance given in "Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities" common practice analysis is not required for small scale project activities. Therefore the checklist question is N/A.</p>	OK	OK

<p>f. Analyze other activities similar to the proposed project activity</p> <p>1. Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other VCS project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to which extent similar activities have already diffused in the relevant region.</p>	<p>PDv01</p>	<p>DR</p>	<p>Please refer to question e above.</p>	<p>OK</p>	<p>OK</p>
<p>g. Discuss any similar Options that are occurring:</p> <p>1. If similar activities are identified, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially/economically attractive (e.g., subsidies or other financial flows) and which the proposed project activity cannot use or did not face the barriers to which the proposed project activity is subject. In case similar projects are not accessible, the PDD should include justification about non-accessibility of data/information</p>	<p>PDv01</p>	<p>DR</p>	<p>Please refer to question e above.</p>	<p>OK</p>	<p>OK</p>

<p>h. Has it been proved that the project is additional?</p>	<p>PDv01 B.5</p>	<p>DR</p>	<p>The additionality of the project activity have assessed after all the clarification and corrective action requests are closed. In the end of the assessment period it has been proven that the proposed project activity is additional.</p>	<p>OK</p>	<p>OK</p>
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TABLE 4 LEGAL REQUIREMENTS

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Legal requirements					
1.1. Is the project activity environmentally licensed by the competent authority?	PDv01 D.1	DR	Please give information on the environmental impacts of the project activity under section D.1.	CL32	OK
1.2. Are there conditions of the environmental permit? In case of yes, are they already being met?	PDv01 D.1	DR I	Conditions of the environmental permit are being met. This was also verified during the site visit.	OK	OK
1.3 Are the conditions of the Designated National Authority being met?	PDv01 D.1	DR	Turkey does not have a DNA.	OK	OK

TABLE 5 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
CAR1 - Please give an identification of relevant local laws and regulations related to the project and demonstrate the compliance of the project activity with these laws and regulations.	Table 1 2.d.k	The laws and regulations applicable to the project have been explained in part B.5. of the PD.	The relevant laws and regulations are listed in a tabular form under section B.5 in the PD version 02. <u>The corrective action request is closed.</u>
CAR2 - The purpose of monitoring is not described. Please describe the purpose of monitoring under section B.7.2.	Table 1 2.d.ff.i	The purpose of monitoring plan is described in B.7.2.	The purpose of the monitoring plan is given as follows under section B.7.2 of the PD version 02: <i>"aim of the plan is to maintain credible and transparent measurement and collection of data for precise calculation of emission reduction during the crediting period."</i> <u>The corrective action request is closed.</u>
CAR3 - The only data and parameter that is being monitored is EG_y . However as UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" is used for the calculation of the grid emission factor, the following parameters needs to be included in the monitoring plan: <ul style="list-style-type: none"> ⊗ $FC_{i,y}$ ⊗ $NCV_{i,y}$ ⊗ $EF_{CO_2,I,y}$ ⊗ EG_y 	Table 1 2.d.gg	The tool implies that: <i>"For the simple OM, the simple adjusted OM and the average OM, the emissions factor can be calculated using either of the two following data vintages:</i> <ul style="list-style-type: none"> • <i>Ex ante option: If the ex ante option is chosen, the emission factor is determined once at the validation stage, thus no monitoring and recalculation of the emissions factor during the crediting period is</i> 	The explanation is found satisfactory. <u>The corrective action request is closed.</u>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>$\varnothing \eta_{m,y}$</p> <p>As $EF_{grid,CM}$ is calculated using these parameters, all of these parameters needs to be monitored.</p> <p>Please revise the monitoring plan to include the above mentioned parameters.</p>		<p><i>required.</i>"</p> <p>As ex-ante option is selected, no monitoring of those parameter are applicable.</p>	
<p>CAR4 - A chronological plan for the date of initiating project activities is not given. Please give a chronological plan including:</p> <ul style="list-style-type: none"> \varnothing date of initiating the project activities \varnothing terminating the project, \varnothing frequency of monitoring and reporting <p>The project period, including relevant project activities in each step of the GHG project cycle</p>	Table 1 2.d.00	Please see Table.1. in section A.4.2.	<p>A chronological plan is given in a tabular form under section A.4.2 of the PD version 02.</p> <p><u>The corrective action request is closed.</u></p>
<p>CAR5 - Under section B.6.1, it is stated as follows:</p> <p><i>"According to AMS-I.D requires that the emission factor for the grid system is calculated in accordance with the "Tool to calculate the emission factor for an electricity system", version 01.1."</i></p> <p>After this statement the methodological choices regarding the OM and BM calculation methods is given.</p> <p>The formulas given in this section of the VCS PD do not exist in the Tool. Please clarify where these formulas are taken from and why the formulas given in the tool is not used.</p>	Table 2 3.2	The calculations are updated according to the version2.0 of "Tool to calculate the emission factor for an electricity system".	<p>The definitions and formulas are revised according to the tool and the methodology AMS I.D version 15.</p> <p><u>The corrective action request is closed.</u></p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
Please also define how the Project Emissions and Leakage Emissions are taken into consideration according to the methodology under this section.			
<p>CAR6 - Regarding the parameter GE which is given under the data/parameter tables under section B.6.2 of the PD version 01:</p> <ol style="list-style-type: none"> The name of the parameter and the definition is not correct. Please amend according to the guidance given in the tool. Please give the values applied in the 'value applied' section of the table. <p>In the comment section of the table it is stated that Applied in the calculation of the simple OM, where fuel consumption data is available for all power plants. However according to the tool this parameter is only used for the calculation of BM. Please clarify.</p>	Table 2 3.2	The parameter has been updated as defined in the version2.0 of " <i>Tool to calculate the emission factor for an electricity system</i> ".	<p>The parameter name is revised as $\eta_{m,y}$. Also the definitions and values applied are revised as per the tool in the PD version 02.</p> <p><u>The corrective action request is closed.</u></p>
<p>CAR7 - According to the UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" the simple OM emission factor shall be calculated as a generation weighted average. However in the OM calculations the calculations are based on a total value. Please correct your calculations according to the tool.</p>	Table 2 3.2	The calculations for OM has been revised as generation weighted average	<p>In the revised excel sheet named "Turkey_CM_2009_v3" the OM emission factor is calculated as a generation weighted average.</p> <p><u>The corrective action request is closed.</u></p>
<p>CAR8 - All the barriers identified in the VCS PD version 1 under section B.5 are not specific</p>	Table 3	The project specific barriers are:	The barrier analysis section is revised in the PD version 02.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
for the project and are not realistic and credible. Please revise the barrier analysis making sure that the barriers that are identified are realistic and credible and are specific for this type of project activities.	1.d	1)Lack of experience of project owner 2)Lack of financial sources and proper lending facilities 3)Market fluctuations which are explained in section B.5.	It was also verified during the site visit through interviews with the project owner that the proposed project activity is the first HEPP investment of the company. The project owner does not have a background in energy investments. <u>The corrective action request is closed.</u>
<p>CAR9 – The PP has used IRR analysis to prove the investment barriers. Please clarify/correct the following points regarding the IRR Analysis:</p> <p>1. In PDD, it is stated that IRR is calculated as 16.64% by using the electricity tariff of 7.81\$, 5.2 GWh of production and 1.289.399 \$ of investment cost. However, in the IRR calculation sheet named "Yazı Financial (Fizibilite 2004)" file 16.64% of IRR value is be obtained by 5.84 GWh of production. Please clarify.</p>		<p>1. It has been corrected according to the feasibility data.</p> <p><u>Response to Review 1:</u> It has been corrected according to the feasibility study date and Eur/Dolar parity has been added correctly.</p> <p><u>Response to Review 2:</u> The parity of Eur/USD has been used to convert the electricity tariff from Euro to USD and 7.81 USD/cent has been corrected as 6.66 USD/cent in accordance with Central Bank data.</p>	<p>1. <u>Review 1:</u> Please give explanation why 1.42\$ rate is used to obtain electricity price.</p> <p><u>Review 2:</u> \$/TL rate is taken as 1.40 in accordance with the feasibility study. It is stated in the PDD that rate is 7.81 USD/cent. However, €/ \$ parity is given as 1.2109 in the IRR calculation sheet named "Yazı HEPP Financial Analysis" file. Please justify how Eur/Dolar parity is selected.</p> <p><u>Review 3:</u> The changes are accepted by the validation team. OK</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>2. In general the values in the IRR excel sheet is not consistent with the values given in the feasibility study and the PDD. Please revise the IRR calculations so that it reflects the data in the feasibility study.</p> <p>3. In PDD, it is stated that Installed Power is 1.132 and annual power generation is 5.250.000kWh. However, 1.1 and 5.203.000kWh's are used in the IRR analysis. Please change the figures in the IRR analysis based on the PDD figures.</p> <p>4. Please give explanation why the \$ rate used in the IRR analysis (1.42) is different from the \$ rates stated in PDD (1.377) and in feasibility study (1.40).</p>		<p>2. All the values have corrected with the feasibility data.</p> <p>3. Figures have been changed based on feasibility study.</p> <p>4. All the values corrected with feasibility data (1.40). <u>Response to Review 1:</u> All the dollar values corrected with feasibility data (1.40) and Eur/Dollar parity has been corrected as 1.24. <u>Response to Review 2:</u> All the value of Eur/USD parity has been corrected as 1.2109 (Central Bank Data) in excel study and the electricity selling price has been changed as 6.66 USD/cent.</p>	<p>2. In the revised IRR calculation sheet the values are consistent with the feasibility data. OK.</p> <p>3. The figures are changed according to the PDD; hence the IRR calculations are on the conservative side. OK.</p> <p>4. <u>Review 1:</u> Only electricity price is calculated by using the exchange rate of 1.42. Please clarify why an exchange rate other than 1.40 is used. <u>Review 2:</u> USD/TRY rate is taken as 1.40 in accordance with the feasibility study. It is explained in this protocol that €/ \$ rate has been taken as 1.24. It is stated in the PDD that rate is 7.81 USD/cent. However, €/ \$ parity is given as 1.2109 in the IRR calculation sheet named "Yazı HEPP Financial</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>5. Please clearly state that how the Operations and Maintenance cost figure in the IRR analysis is found. Please correct the formula in cell "E12" in sheet Operational Cost. Technical staff and other staff costs are double counted in reacing the Operations and Maintenance cost.</p> <p>6. Please clearly state that how the Depreciation figure in the IRR analysis (24.850\$) is found. Please use the Turkish accounting rules to obtain the depreciation figures.</p>		<p>5. It has been corrected. <u>Response to Review 1:</u> The depreciation is excluded from operation and maintenance cost.</p> <p>6. It has been corrected. <u>Response to Review 1:</u> The depreciation is excluded from calculations and IRR on capital employed before taxation is calculated. <u>Response to Review 2:</u> The depreciation period has been accepted as 40 years and</p>	<p>Analysis" file. Please justify how Eur/Dolar parity is selected. <u>Review 3:</u> The changes are accepted by the validation team. OK</p> <p>5. <u>Review 1:</u> In IRR analysis it is seen that depreciation is included in the Operations and Maintenance cost. However, there is another line for the depreciation item so please exclude the depreciation figure from the Operations and Maintenance costs. <u>Review 2:</u> The depreciation is excluded from operation and maintenance cost. The changes are accepted. OK</p> <p>6. <u>Review 1:</u> Deprecation period for electro mechanic equipment should be 20 years. Please change the depreciation period accordingly. Please also explain why depreciation is not calculated for the construction works item. <u>Review 2:</u></p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>7. Please clearly state that if Debt is used to finance the investment cost.</p> <p>8. Please clearly state that how additional cash inflow at the end of analysis period is found. Please use the salvage value of assets as a cash inflow at the end of assesment period.</p>		<p>depreciation for the construction works item in 20 years has been added in financial study.</p> <p><u>Response to Review 3:</u> The requirement has been done accordingly in the excel study.</p> <p>7. Loan cost and interest were not taken into account in IRR capital employed calculation.</p> <p>8. The addional cash flow equals to the investment amount of the project owner and it is added at the end of the assessment period</p> <p><u>Response to Review 1:</u> The addional cash flow equals to the investment amount of the project owner and it is added at the end of the assesment period.</p> <p><u>Response to Review 2:</u></p>	<p>Please explain why depreciation is not calculated for the construction works item.</p> <p><u>Review 3:</u> Depreciation should be added back to the cash flow both in equity and project IRR calculations. Please correct the project IRR calculations accordingly.</p> <p><u>Review 4:</u> Depreciation was added to the cash flow. OK</p> <p>7. The explanation is accepted. OK</p> <p>8. <u>Review 1:</u> In the IRR analysis, it is seen that the last year's operational profit is multiplied by 6 to obtain the salvage value of the project. Please give the rationale of this approach.</p> <p><u>Review 2:</u> In "Yazı HEPP Financial Analysis" file there is no additional cash flow at the end of period. Please add the fair value of assets as a cash inflow at the</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>9. While the investment amount is changed in the sensitivity analysis, depreciation amount doesn't change automatically. In fact depreciation is related to the asset value. Please correct it accordingly.</p>		<p>The remaining depreciation of construction works item has been added as fair value at the end of the period accordingly.</p> <p><u>Response to Review 3:</u> Fair value has been added at the end of cash inflow period accordingly.</p> <p><u>Response to Review 4:</u> The fair value has been calculated correctly in the excel study and all the relevant changes have been done in the PD.</p> <p>9. It has been corrected.</p> <p><u>Response to Review 1:</u> The depreciation cost is excluded for the simplicity.</p> <p><u>Response to Review 2:</u> The model has been corrected and the depreciation figure change automatically. The sensitivity analysis has been</p>	<p>end of period.</p> <p><u>Review 3:</u> In the analysis, it is seen that construction works is divided by 40 and put the result in each year as a cash inflow. Fair value application means, adding the net asset value to the end of analysis period as a cash inflow. Please clarify.</p> <p><u>Review 4:</u> The value of 180,000 is not correct. Please calculate the net asset value as of end of analysis period i.e. Total project cost – cumulative depreciation amount as of analysis period.</p> <p><u>Review 5:</u> The fair value has been calculated correctly. OK</p> <p>9. <u>Review 1:</u> There still seems to be no correction in the model. When an increase or decrease scenario applied to the investment cost, the depreciation figure doesn't change. Please make the necessary corrections in the model so that the depreciation figure depends on the investment cost which is found by the sensitivity</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>10. Please check the Electricity revenue part in the sensitivity analysis. It seems that</p>		<p>corrected accordingly and 1.1 has been removed from operational and maintenance part in financial study.</p> <p>10. It has been corrected. <u>Response to Review 1:</u></p>	<p>analysis.</p> <p><u>Review 2:</u> Please make the sensitivity analysis in a transparent way so that it would be easy to justify the figures stated in PDD analysis. For example, in order to run the +10% investment cost scenario, we multiply the "C4" cell in sheet "Investment Cost" by 110% and we found new IRR as 10.46% IRR before carbon revenue. However, it is not so in the sensitivity table. The sensitivity results are not same as it is stated in PDD.</p> <p>Please explain why the "Operations and Maintenance" item is multiplied by 1.1 in "Cash Flow without carbon" sheet. Please clarify that if it is the +10% Operations and Maintenance scenario why 12.12% is stated in the sensitivity analysis table.</p> <p><u>Review 3:</u> The changes are accepted by the validation team. OK</p> <p>10. <u>Review 1:</u> After running +10 Investment Cost, +10 Operational Cost and +10</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>the IRR results under different electricity revenue scenarios are incorrect. For example, when +10% scenario is runned in the sensitivity analysis, IRR is calculated as 19.59%. However, 17.08% is given in the sensitivity table.</p> <p>11. Please use the \$ based lending rates to obtain the benchmark rate because the IRR analysis is done based on the \$ currency which doesn't consider both inflation and TRY depreciations.</p>		<p>It has been corrected.</p> <p><u>Response to Review 2:</u> All necessary corrections have been done in the model. Sensitivity analysis has been done accordingly in PDD and financial study.</p> <p>11. The investment will be done in TRY. The investment analysis is done in USD as recommended by the State Hydraulic Works in order to include rises in inflation rates and operational cost.</p> <p><u>Response to Review 1:</u> Investment analysis is done in USD to include the increase in materials price, labor cost, etc. due to the inflation in Turkey. It is expected to be 5% for 2010-2012 according to the State Planning Organization for midterm (please see page 35 in</p>	<p>Electricity revenue scenarios in the model, IRR results would be 12.61%, 13.29% and 15.43% respectively which is different from the sensitivity table given both in PDD and in IRR analysis. Please clarify.</p> <p><u>Review 2:</u> The sensitivity results are not same as it is stated in PDD. Please clarify.</p> <p><u>Review 3:</u> The changes are accepted by the validation team. OK</p> <p>11. <u>Review 1:</u> Since the investment analysis is done in USD, selected benchmark must be in USD as well. Please correct accordingly.</p> <p><u>Review 2:</u> In file "Yazi HEPP Financial Analysis" the both the analysis and the benchmark selected are in USD currency. OK</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>12. Please include the Carbon Revenue as a cash inflow in order to see the additionality impact.</p>		<p>the attached report). The investment is done in Turkish Liras.</p> <p>12. The carbon revenue has been added as a cash flow in the IRR calculation.</p> <p><u>Response to Review 1:</u> Carbon income is corrected to be effective for the whole investment period of 20 years. IRR before taxation calculated for simplicity.</p> <p>The analysis of financial included 20 years period. According to the regulations there is no corporate tax in carbon revenue in Turkey, therefore carbon income has been added as cash flow directly.</p> <p><u>Response to Review 2:</u> The corrections have been done accordingly in the excel sheet.</p> <p><u>Response to Review 3:</u> The forecast of the carbon revenue has been changed with 10 years.</p>	<p>12. <u>Review 1:</u> Please clarify why carbon income is effective for 18 years. There is no reference given in PDD. Also, please apply corporate tax for the carbon income. In IRR analysis it is directly put into cash flow. Please clarify.</p> <p><u>Review 2:</u> When we multiply the figures in cells C24 and C25 (in sheet Summary) to reach the Carbon income, we found 14.61% IRR which is not in line with the 13.21% IRR stated in PDD. Please justify the 13.21% figure. Please give reference for a 20 years carbon income application and justify that it would be effective for 20 years.</p> <p><u>Review 3:</u> Normally carbon revenue would be effective for at most 10 years. Because, there is no guarantee to prolong the agreement. Please give explanation why carbon revenue is effective for 20 years.</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>13. Please clearly state if VAT is included in the Investment Cost.</p> <p>14. Please clearly state if Grid Fee (transmission line cost) exist or not?</p>		<p>13. VAT is not included in the investment cost.</p> <p>14. It exists but excluded for simplicity. The grid fee is discounted from transmission line expenses paid by the project owner. No grid fee will be paid during the crediting period.</p> <p><u>Response to Review 1:</u> It exists but excluded for simplicity. The grid fee is discounted from transmission line expenses paid by the project owner. No grid fee will be paid during the crediting period. It has added in PDD.</p> <p><u>Response to Review 2:</u> The explanation stated in the other barrier section.</p>	<p><u>Review 4:</u> The carbon revenue has been changed with 10 years. OK</p> <p>13. The explanation is accepted. OK</p> <p>14. <u>Review 1:</u> The explanation is accepted. Please also include the explanation in the PDD.</p> <p><u>Review 2:</u> The explanation is not stated in the PDD. Please include the explanation in the PDD.</p> <p>Please remove the blank table at the page 11 of the PDD.</p> <p>The sentence beginning with "Furthermore" is not completed. Please complete the sentence.</p> <p><u>Review 3:</u> Please remove the blank table at the page 11 of the PDD.</p> <p><u>Review 4:</u> The blank table was removed from</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>15. Overall the IRR analysis is not transparent and reproducible by the interested parties.</p>		<p>15. It has been corrected. <u>Response to Review 1:</u> It has been corrected. <u>Response to Review 2:</u> All the confused parts have been corrected accordingly.</p> <p>16. All the assumptions of the investment analysis have been added in the PDD. <u>Response to Review 1:</u> All the assumptions of the analysis have been added in PDD.</p>	<p>the PDD. OK</p> <p>15. <u>Review 1:</u> There are still some confused parts which are stated in above comments. Please revise the necessary parts in the analysis. <u>Review 2:</u> There are still some confused parts which are stated in above comments. Please revise the necessary parts in the analysis. <u>Review 3:</u> The changes are accepted by the validation team. OK</p> <p>16. Please include all the assumptions regarding the IRR analysis in the PDD for transparency and to enable the interested parties to reproduce the calculation results. <u>Review 1:</u> There is still something to be improved which is stated in above comments. Please revise the necessary parts in the analysis. <u>Review 2:</u> The changes are accepted by the</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
		<p>17. Investment cost is revised and placed in the investment period. Total investment cost has been separated into 2 years equally before the period of electricity generation.</p> <p>18. The total risk premium has been added benchmark IRR in PD accordingly.</p>	<p>validation team. OK</p> <p>17. Please clearly state why there are no cash flows in years 1 and 2. If it is due to the investment (construction) period, please distribute the total cost in 2 years. In this case, please also make the analysis for 20 years excluding the investment period.</p> <p><u>Review 1:</u> The changes are accepted. OK</p> <p>18. Please add the total risk premium (including equity risk premium) in finding benchmark IRR.</p> <p><u>Review 1:</u> The total risk premium has been added benchmark IRR. OK</p> <p><u>The corrective action request is closed.</u></p>
<p>CAR10: According to the "Tool for the demonstration and assessment of additionality", if barrier analysis is used, determine whether the proposed project activity faces barriers that: (a) Prevent the implementation of this type of proposed project activity; and</p>		<p>The "other barrier" was removed from the PD.</p>	<p>The "other barrier" section was excluded from PD version 09. The assessment and demonstration of additionality of the project is done by investment analysis.</p> <p><u>The corrective action request is closed.</u></p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>(b) Do not prevent the implementation of at least one of the alternatives.</p> <p>The identified barriers are only sufficient grounds for demonstration of additionality if they would prevent potential project proponents from carrying out the proposed project activity undertaken without being registered as a CDM project activity.</p> <p>If the CDM does not alleviate the identified barriers that prevent the proposed project activity from occurring, then the project activity is not additional.</p> <p>Please explain and demonstrate your barriers in line with tool and Guidelines for Objective Demonstration and assessment of Barriers (EB50, Annex 13).</p>			
<p>CL1 - Please present the English translation of the documents given in Annex 5.</p>	Table 1 1.c	Annex.5. has been revised	<p>The English translations of all the documents are included in the PD version 02.</p> <p><u>The clarification request is closed.</u></p>
<p>CL2 - Title: Yazı Hes 1.1MW Hydro Power Plant Version:01 Date:6th July 2009 Please revise the date of the document in the next version of the PD, this date should be the date when the document is completed. The project capacity is given as 1.17 MW on</p>	Table 1 2.d.b	<p>The date and version number are updated.</p> <p>The capacity of the power plant has been taken as 1.13 MW as indicated in the electricity generation license of the project revised in 31/08/2006.</p>	<p>The title, date and version number of the PD is revised in the PD version 02.</p> <p><u>The clarification request is closed.</u></p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
the website of EMRA (Electricity Market Regulatory Authority), also during the site visit the capacity was said to be 1.3 MW, however the capacity is given as 1.1 MW in the VCS PD version 01. Please clarify.			
CL3 - It is not defined whether the project category is part of a GHG program that has been approved by the VCS Board or not. Please clarify	Table 1 2.d.c.i	The project type and category are explained in section B.2.	Under section B.2 of the PD version 02, the project type and category is explained both according to the UNFCCC definition and the VCS 2007.1 definition. <u>The clarification request is closed.</u>
CL4 - Under section A.4.3 of the PD version 01, the amount of emission reductions over the crediting period is estimated. In PD version 01, it is estimated that the project will reduce 3,570 tons CO ₂ every year resulting in a total reduction of 35,700 tons of CO ₂ for the first crediting period. Please also define the project size according to the definitions given in VCS 2007.1.	Table 1 2.d.d	According to VCS definitions, it is a micro scale project in section A.4.3.	The project size is defined as "micro scale project" in line with the VCS 2007.1 definitions both under section A.4.3 and B.2 of the PD version 02. <u>The clarification request is closed.</u>
CL5 - The detailed information on the project location, including geographic and physical information allowing the unique identification and delineation of the specific extent of the project, and including GPS project boundaries are provided under section A.4.1. of the VCS PD. Please give the detailed coordinates of the power house and Guldurcek Dam.	Table 1 2.d.f	Detailed coordinates of Gürleyik dam and power house are added in the PDD. <ul style="list-style-type: none"> The name of the dam is Guldurcek dam. 	Review 1: The coordinates of the dam is given in the PD version 02. Please also clarify the name of the dam, in some parts of the PD the dam is referred to as "Guldurcek Dam" whereas in some parts the dam is referred to as "Gurleyik Dam". <u>The clarification request is still open.</u>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			<p>Review 2: The name of the dam is revised as Guldurcek Dam both in the PD version 03 and the validation protocol. <u>The clarification request is closed.</u></p>
<p>CL6 - Under Section C.1.1 the starting date of the project activity is given as September 2009. Please give the exact date when the project started to supply electricity to the grid as this date will also be used as the monitoring period start date. Please indicate the date on which a financial commitment was made to the project. Please indicate the date when the project reached financial closure</p>	Table 1 2.d.g.i	<p>The commissioning date is 10.October.2009 revised in section C. A project schedule has been given in A.4.2. The commissioning date is revised throughout the document. And revised as 01.10.2009</p>	<p>Review 1: Starting date of the project activity is given as 01 October 2009 under section C.1.1 of the PD version 02. However the PPs response states that the starting date is 10 October 2009. Please clarify. In the project schedule under section A.4.2 the commissioning date is also given as 01.10.2009. Under section A.4.3 (Table 2) the emission reductions are calculated starting from September 2009. Please clarify the inconsistencies. <u>The clarification request is still open.</u></p> <p>Review 2: Under section A.4.2 it is still mentioned that the project was operational on 01 September 2009.</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			<p>Under section A.4.3 emission reductions are calculated starting from September 2009.</p> <p><u>The clarification request is still open.</u></p> <p>Review 3: The commissioning date is revised throughout the whole document in PD version 04.</p> <p><u>The clarification request is closed.</u></p>
<p>CL7 - Under section C.1.2 it is stated that <i>"Expected economical life time of the Project activity is 49 years."</i></p> <p>However under this section the operational lifetime of the project activity should be given. Please clarify.</p> <p>In the website of EMRA the license of the Yazi power plant is for 40 years. Please clarify how the lifetime of the project activity can be more than the license.</p>	Table 1 2.d.g.i	<p>The license is valid from the date of issuance for 49 years. However it is misprinted and under revision.</p> <p>The economical lifetime of the project is 44 years as the realization of the project took 5 years.</p>	<p>The license duration is verified from the "Special provisions" section of the license which is given in Annex 5 of the PD version 02.</p> <p>It is also logical to accept the operational and economical lifetime of the proposed project activity as 44 years which limits the lifetime of the project activity with the license duration.</p> <p><u>The clarification request is closed.</u></p>
<p>CL8 - Under section C.2.1.1. of the VCS PD version 01. it is stated that the crediting period will start on September 2009, please indicate the crediting period start date as dd/mm/yyyy as the project has already supplied electricity to the grid.</p>	Table 1 2.d.g.ii	<p>The date of crediting period starts is revised.</p> <p>The crediting period is renewable twice which makes 30 years in total.</p>	<p>The length of the crediting period and the crediting period start date is revised in the PD version 02.</p> <p><u>The clarification request is closed.</u></p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>Under section C.2.1 of the VCS PD version 01, it is stated as follows: <i>"Renewable crediting will be 10 years, renewable twice. The total crediting period will be 20 years."</i></p> <p>Please clarify whether the crediting period will be renewed once or twice? If it will be renewed twice the total crediting period shall be 30 years.</p>			
<p>CL9 - The project technologies are given under section A.4.2. Please also describe the expected level of activity.</p>	Table 1 2.d.j	The annual electricity generation is 5,203 MWh and monthly average is 433.6 MWh.	The expected level of activity is given under section A.4.2 of the PD version 02. <u>The clarification request is closed.</u>
<p>CL10 - The contact information of the project proponent and carbon consultants are given in a tabular format under Annex 1 of the VCS PD. Please also briefly define the responsibilities of the contact persons regarding the carbon crediting process.</p>	Table 1 2.d.r	Annex.1. is revised accordingly	The roles and responsibilities of the contact persons regarding the carbon crediting process is given in Annex 1 of the PD version 02. <u>The clarification request is closed.</u>
<p>CL11 - Please define if there is any commercially sensitive information that has been excluded from the public version of the VCS PD that will be displayed on the VCS Project Database.</p>	Table 1 2.d.t	No commercially sensitive data exists for the project.	<p>Review 1: Please also include this statement in the PD as it is a requirement of VCS 2007.1. <u>The clarification request is still open.</u></p> <p>Review 2: Under section B.2 of the PD version 03 it is stated that there is no commercially</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			sensitive information. <u>The clarification request is closed.</u>
<p>CL12 - The choice of the methodology and its applicability to the project activity is justified under section B.2 of the VCS PD version 01 as follows: <i>"The choice of methodology AMS-I.D version 15 is justified as the Project activity meets its applicability criteria: The Yazi HPP Project activity is the installation of a 1.1 MW hydro power plant and the project supplies electricity to and displace electricity from an electricity distribution system that would have been supplied by at least one fossil fuel fired generating unit."</i> Please also justify your choice of project category under section B.2.</p>	Table 1 2.d.x	The chose of project type and category is explained in section B.2.	The choice of the project type and the category of the project is given under section B.2 of the PD version 02. <u>The clarification request is closed.</u>
<p>CL13 - Under section B.3 of the VCS PD version 01, the GHG sources are identified for both the baseline scenario and the project using the tabular format. For CH₄ it is stated as follows: <i>"Minor emission source since power density is very high. Excluded for simplification"</i> Please clarify how the power density is calculated and send the calculation details to the validation team.</p>	Table 1 2.d.y	There is no reservoir built for the purpose of the project as it utilizes the Guldurcek dam which is built for irrigation purposes. The dam is out of the project boundary.	This statement was validated during the site visit. The project activity does not include construction of a reservoir, hence CH ₄ emissions from the reservoir is not relevant for this project, since there is no reservoir the power density of the project is infinite. <u>The clarification request is closed.</u>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>CL14 - In the VCS PD version 01 the value applied for the parameter EG_y is given as follows: <i>"Estimated annual generation forming the basis for emission reduction calculation is 5.844 GWh"</i> Please explain how this value is calculated by giving the calculation details. The value applied for all of the parameters will be checked again when the revisions requested in section gg of this checklist are reflected in the monitoring plan.</p>	Table 1 2.d.gg.iv	<p>The feasibility study implies the annual electricity generation of the power plant is the sum of firm energy and secondary energy pursuant to the hydraulic calculations done. The value has been calculated for an installed capacity of 1.2 MW as indicated in the license. However, the real capacity of the turbines is 1.13 MW in total as confirmed by the producer company. Therefore the calculations are revised in accordance with that capacity which will generate 5,203 MWh annually.</p>	<p>The estimated annual electricity generation figure is revised in the PD version 02 according to the revised capacity of the proposed project activity. <u>The clarification request is closed.</u></p>
<p>CL15 - The monitoring plan is described in detail under section B.7.2 of the VCS PD version 01. More information about the monitoring is given in Annex 4. It is stated in Annex 4 as follows: <i>"The Monitoring Plan used for determining the emission reduction by the Project is based on the approved methodology ACM0002."</i> Please clarify which methodology is used for the monitoring activities.</p>	Table 1 2.d.hh	AMS-I.D version 15 has implemented to the emission reduction estimations.	<p>The monitoring methodology is based on the methodology AMS I.D. and this has been stated under section B.7.2 in the PD version 02. <u>The clarification request is closed.</u></p>
<p>CL16 - According to the Methodology AMS I.D. the project GHG emissions are negligible. However please clarify how the internal energy need of the project activity will be met when</p>	Table 1 2.d.kk	The internal energy consumption is explained in section B.7.2.	Under section B.7.2 of the PD version 02, how the internal energy consumption of the project activity will be met is explained in detail.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
there is no electricity production in the plant.			<u>The clarification request is closed.</u>
<p>CL17 - Under section E of the VCS PD version 01 it is stated that: <i>"The project is located far away from residential areas and does not have any adverse environmental impacts to the surrounding. Therefore; no stakeholder consultation is planned."</i></p> <p>However during the site visit it was seen that the power house is very close to a small village. Please include the comments of the village residents in the stakeholders' comments section of the VCS PD.</p>	Table 1 2.d.nn	Stakeholders' comments were taken by informal meetings. Please see the section E for the summary.	<p>A summary of the stakeholders' comments are included in section E of the PD version 02.</p> <p>These comments were taken during the site visit, and all of the stakeholders' that were present in the meetings were content with the project activity.</p> <p><u>The clarification request is closed.</u></p>
<p>CL18 - Regarding the parameter $FC_{i,y}$ which is given under the data/parameter tables under section B.6.2 of the PD version 01:</p> <ol style="list-style-type: none"> 1. The description of the parameter is not complete, please clarify 2. Please give the complete web links for the source of data, <p>Please also include the 2008 values which are published on the TEIAS website</p>	Table 2 3.2	<p>The parameter has been updated as defined in the version 2.0 of "Tool to calculate the emission factor for an electricity system".</p> <p>The tables are revised.</p>	<p><u>Review 1:</u></p> <p>In the PD version 02, the description of the parameter FC is revised.</p> <p>The data used is given in Annex 3 Table B, the link to the source of this data is also given as a footnote.</p> <p>The name of the Table B is given as "Fuel Consumed in Thermal Power Plants in Turkey by the Electric Utilities (Tcal)"</p> <p>The unit of the data is wrong in the table title (although it is correct in the data/parameter table). Please revise the data unit.</p> <p>In Annex 3, in Table C Net electricity supply values are given only for the years</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			<p>2004-2005 and 2006. Please revise "Table C" to include the values for the years 2006-2007 and 2008.</p> <p><u>The clarification request is still open.</u></p> <p>Review 2: Table B and Table C are revised in the PD version 03.</p> <p><u>The clarification request is closed.</u></p>
<p>CL19 - Regarding the parameter $NCV_{i,y}$ which is given under the data/parameter tables under section B.6.2 of the PD version 01:</p> <ol style="list-style-type: none"> 1. The data unit is not complete, please clarify 2. Please give detailed information and the complete links to the data which are used to calculate the NCV, 3. Please also include the 2008 values which are published on the TEIAS website 4. In the justification section it is stated that this data is used for BM calculations, however this value is only used in the OM calculations according to the formulas given in the tool 	<p>Table 2 3.2</p>	<p>The parameter has been updated as defined in the version 2.0 of "<i>Tool to calculate the emission factor for an electricity system</i>".</p> <p>The formula is presented in the PDD.</p>	<p>Review 1: In the PD version 02, in the data/parameter tables, it is stated that source of data for NCV is TEIAS, however from the excel sheet submitted to the validation team it is seen that this data is calculated using some data from the TEIAS website. It should be explained in the PD in detail how NCV is calculated to enable the interested parties to reproduce the results.</p> <p>It is stated in the PD as follows: "Annual heating values for each fuel type are directly related with the fuel consumption and are used to calculate Net Calorific Values (TJ/kt) for each year" However this explanation is not enough to reproduce the results. Although the</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			<p>assumptions and the calculations are correct, it should be explained in detail in the PD.</p> <p><u>The clarification request is still open.</u></p> <p>Review 2: A detailed explanation including the formula for the calculation of NCV is given in the PD version 03.</p> <p><u>The clarification request is closed.</u></p>
<p>CL20 - Regarding the parameter EF_{CO_2, i, y_i} which is given under the data/parameter tables under section B.6.2 of the PD version 01:</p> <ol style="list-style-type: none"> 1. The parameter name is not correct, 2. Please give the complete reference for the source of data <p>Please correct the EF values for lignite, fuel oil, natural gas according to the values given in IPCC</p>	Table 2 3.2	The parameter has been updated as defined in the version2.0 of " <i>Tool to calculate the emission factor for an electricity system</i> ".	<p>The parameter has been revised and the value of the data used is given in Annex 3 of the PD version 02.</p> <p>The EF values are taken from IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in Table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories.</p> <p><u>The clarification request is closed.</u></p>
<p>CL21 - In section B.6.3 of the VCS PD version 01, under step 1, please define the relevant electricity system in more detail according to the requirements given in the UNFCCC Methodological Tool "<i>Tool to calculate the emission factor for an electricity system</i>".</p>	Table 2 3.2	<p>The definition of the electricity system has been updated as described in the version2.0 of "<i>Tool to calculate the emission factor for an electricity system</i>".</p> <p>The electrical system is clarified.</p>	<p>Review 1: In the PD version 02 under section B.6.1 the relevant electricity system is defined very briefly. Please define the relevant electricity system in line with the tool by giving more detail on the assumptions.</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
Please justify your assumptions.			<p>Also, although the version 02 of the tool does not change the calculation details and results, if this version is used, the steps given in this tool shall be followed precisely. Please revise the PD making sure that the tool is applied correctly.</p> <p><u>The clarification request is still open.</u></p> <p>Review 2: In the PD version 02, the relevant electricity system is defined more clearly according to the "Tool to calculate the emission factor for an electricity system" Also the steps of the tool are revised in the PD version 02.</p> <p><u>The clarification request is closed.</u></p>
<p>CL22 - Under Step 2, please select the Method for calculation of the OM and please justify your selection by explaining why the other methods are not suitable for this project.</p>	<p>Table 2 3.2</p>	<p>Please see section B6.1 for detailed explanation</p> <p>The steps of the emission factor calculation are updated.</p> <p>Ten years average of hydroelectricity generation has been taken as the basis for selection of simple OM method.</p>	<p>Review 1: Under section B.6.1, under step 2, the selection of the OM calculation method is defined and justified. However according to the version 02 of the tool, this selection shall be made under Step 3. Also according to the version 02 of the Tool, "The simple OM method (option a) can only be used if low-cost/must-run resources constitute less than 50% of</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			<p>total grid generation in: 1) average of the five most recent years, or 2) based on long-term averages for hydroelectricity production.”</p> <p>As this is a hydroelectricity project the analysis of the share of low-cost/must-run resources shall be made for a longer period. In the PD version 02 this analysis is done for 5 most recent years.</p> <p><u>The clarification request is still open.</u></p> <p>Review 2:</p> <p>In the PD version 02, the steps of the “tool to calculate emission factor for an electricity system” version 2 has been applied correctly.</p> <p>A 10 year analysis of low cost must run resources are also presented in the PD. This analysis also supports the use of the Simple OM method.</p> <p><u>The clarification request is closed.</u></p>
<p>CL23 - Under Step 3, Table 4 is referred to for NCV calculations, however in Table 4 default emission factors are given. There is also another Table 4 where sensitivity calculations are given. Please check the table numbering throughout the entire document.</p>	<p>Table 2 3.2</p>	<p>Table numbering is revised.</p>	<p>Review 1:</p> <p>The correction has been made however the explanation is missing in the validation protocol. Please include the explanation in the protocol.</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			<p>The clarification request is still open.</p> <p>Review 2: The explanation is given in the validation protocol.</p> <p>The clarification request is closed.</p>
<p>CL24 - Under Step 3, please give detailed information on how the NCV is calculated, and please revise your calculations using the most up to date data on TEIAS website.</p> <p>In the "attdg2iw"excel sheet where EF calculations are shown, it is seen that, under the OM calculations, first an average NCV is calculated, then this average value is used for the OM calculations. However according to the tool, the NCV value is the NCV of fossil fuel type i, in year y. Please revise your calculations using the yearly NCV values.</p>	Table 2 3.2	Calculations are revised accordingly. Please see the attached excel sheet.	<p>The calculation sheet has been revised, in the revised calculation sheet, the NCV values of each year is calculated.</p> <p>The clarification request is closed.</p>
<p>CL25 - In the BM calculations under step 5, please revise the calculations using the capacity addition data from the TEIAS capacity projection documents, for the years 2007 and 2008.</p> <p>For 2006 the annual generation of the plants can also be found in the capacity projection document of TEIAS. Please revise your calculations using this data.</p>	Table 2 3.2	The calculations for 2004, 2005 and 2008 data has been updated. However, 2007 and 2006 capacity additions, annual generation data for each plant are not presented in the referenced document. Therefore, comparing the present situation data for 2007 and 2006 capacity additions, some of the plants' generation data	<p>Review 1: For the years 2006 and 2007, the annual firm generation values of the power plants are given in Annex 1 of the same capacity projection documents. Please revise the calculations using these values.</p> <p>For the year 2008 please also use the firm generation capacities of the capacity additions which are also present in Annex</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
		<p>are found. All of the rest is assumed to be natural gas to be conservative. The firm generation capacities are taken for the year 2008.</p>	<p>1 of the same document. The generation figures used for the year 2008 are not applicable because these figures do not represent the annual firm generation capacities of these plants, these figures are only limited to the year 2008 and includes only the generations after the commissioning of these power plants.</p> <p><u>The clarification request is still open.</u></p> <p>Review 2: In the PD version 03 and the revised calculation sheet, the firm generation capacities of capacity additions are taken. <u>The clarification request is closed.</u></p>
<p>CL26 - In the BM calculations (step 5) both in the VCS PD version 1 and the excel calculation sheet, please define what the parameter EF_{BAT} is taken from. This parameter is not referred to in the tool. Please clarify.</p>	Table 2 3.2	The calculations for OM and BM are revised according to version 2.0 of "Tool to calculate the emission factor for an electricity system".	<p>The calculations are revised as per the tool, EF_{BAT} is taken out in the PD version 02. <u>The clarification request is closed.</u></p>
<p>CL27 - <i>"High transaction costs in developing renewable energy and energy efficiency investments. The transaction cost of developing renewable energy (other than large hydro and wind) is usually high. Such costs can arise from feasibility studies for small</i></p>	Table 3 1.d	The project specific barriers are described in section B.5.	<p>This barrier is taken out in the PD version 02. <u>The clarification request is closed.</u></p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p><i>hydro projects”</i></p> <p>The above mentioned barrier is not a specific barrier for the project activity. Please clarify.</p>			
<p>CL28 - <i>“One of the key limitations for wider project implementation of renewable energy financing is the lack of financial resources and proper lending facilities, particularly for small-scale projects and SMEs. Financial institutions view renewable energy sector as higher risks, due to lack of technical capacity on the part of lenders to evaluate such projects and potential borrowers being unable to establish bankability of their projects”</i></p> <p>This barrier is also not specific for the project activity or hydro power projects. Please clarify.</p>	Table 3 1.d	<p>The project specific barriers are described in section B.5.</p> <p>This barrier has been re-defined under the lack of experience.</p> <p>The revision regarding how the absence of the project affect CO2 emissions has been done.</p>	<p>Review 1:</p> <p>This barrier is revised in the PD version 02. The difficulties that the project owners had to face during the implementation of this project activity is explained under this barrier.</p> <p>It was verified from the license revisions that the project owners had changed the partnership structure during the implementation phase. The reason for this was lack of experience. Due to this lack of experience the project owners couldn't foresee the financial difficulties that they may face during the construction.</p> <p>Under this barrier the time schedule of the project activities are also given, it is seen from this schedule that although the license was obtained in the year 2006, the construction could start only 1,5 years after the receipt of the license, because of the financial difficulties.</p> <p>However, the barriers have to be identified according to the guidance given in Attachment A to Appendix B.</p> <p>In Attachment A to Appendix B it is stated as follows:</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			<p><i>"Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher."</i></p> <p>Please define how the CO₂ emissions would be higher in the absence of the proposed project activity.</p> <p><u>The clarification request is still open.</u></p> <p>Review 2:</p> <p>The barriers are revised in the PD version 03. The revised barriers were also verified during the site visit via interviews with the project owner and stakeholders. However it is still not defined in the PD how the CO₂ emissions would be higher in the absence of the proposed project activity.</p> <p><u>The clarification request is still open.</u></p> <p>Review 3:</p> <p>In the PD version 04 it is explained how</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
			the CO ₂ emissions would be higher in the absence of the proposed project activity. <u>The clarification request is closed.</u>
<p>CL29 - <i>"The project owner has to face higher risks during construction phase. The law for Public Tender Act² foresees a contingency amount of 10% for turn-key works contracts and 20% for unit price contracts in Turkey. This is mainly because of fluctuating prices of materials and foreign currency rates which the cost assumptions are based. No detailed bill of quantities has been calculated during feasibility studies, therefore; a risk of at least 20% cost increase exist fort he developer."</i></p> <p>Please explain this barrier in detail by giving objective evidences.</p>	Table 3 1.d	The project specific barriers are described in section B.5.	This barrier is taken out in the PD version 02. <u>The clarification request is closed.</u>
<p>CL30 - <i>"Market fluctuations in electricity prices is another barrier. The key variable determining the economic rate of return is the price at which these plants sell the electricity they produce. The actual price at which they sell varies from day to day and over the course of a day depending on the spot market conditions. Run of hydro power plants cannot compete with the thermal power plants which can operate continuously."</i></p>	Table 3 1.d	The project specific barriers are described in section B.5. This barrier has been removed.	<p><u>Review 1:</u> This is not a barrier for the project activity as the Renewable Electricity Law offers a minimum purchase guarantee of 5 Euro Cents for 10 years. Please remove this barrier from the PDD. <u>The clarification request is still open.</u></p> <p><u>Review 2:</u></p>

² Law No:4735 Public Tender Act , Article.24 (<http://www.muhasabat.gov.tr/mevzuat/kanun/docs/4735.doc>)

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
The fluctuations in electricity prices are not specific for hydro power plants. Please clarify.			The barrier has been removed from the PD version 02. <u>The clarification request is closed.</u>
<p>CL31 - <i>"The Project is in an undeveloped region where only 52,87% of the roads are asphalted in the rural land. Cankiri is ranked as 66th in terms of the share in GDP in the country and 59th in terms of socio-economical development among 81 provinces . The Project owner has to face technical constraints in terms of available services in the region."</i></p> <p>Please define the technical constraints that the project owner had to face in detail by giving objective evidences.</p>	Table 3 1.d	The project specific barriers are described in section B.5.	This barrier is taken out in the PD version 02. <u>The clarification request is closed.</u>
<p>CL32 - Please give information on the environmental impacts of the project activity under section D.1.</p>	Table 4 1.1	No significant impact is foreseen for the project. However, the project owner should not give any harm to the environment in accordance with the water rights agreement. Section D.1. is revised accordingly.	Information about the environmental impacts of the proposed project activity is given under section D1 of the PD version 02. The project activity is a micro scale project and it was also verified during the site visit that the project has minimal effects on the environment. <u>The clarification request is closed.</u>
<p>CL33 – Please give more detailed information in the PD regarding the barrier "Lack of experience of the project owner". Please define this barrier clearly giving objective evidences</p>		Lack of experience of the project owner in developing hydro power plant has also caused some other risks as consulted with the project	<p>Review 1:</p> <p>In the PD version 03, the barrier lack of experience is revised. This barrier was verified during the site visit via interviews</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
<p>and clear references. Please identify this barrier according to the guidance given in Attachment A to Appendix B.</p> <p>In Attachment A to Appendix B it is stated as follows:</p> <p><i>"Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher."</i></p> <p>Please define how the CO₂ emissions would be higher in the absence of the proposed project activity.</p>		<p>owner. It has been stated that the dam will be used for also water supply to 13 municipalities of Cankiri province. This will reduce the amount of excess water which will be used for electricity generation in the future.</p> <p>The feasibility study does not foresee any increase in water supply and irrigation demand during the electricity generation calculations. This means the project may not pay back the investment.</p> <p>The revision regarding how the absence of the project affect CO₂ emissions has been done.</p>	<p>with the project owner and the stakeholders.</p> <p>However it is still not defined in the PD how the CO₂ emissions would be higher in the absence of the proposed project activity.</p> <p><u>The clarification request is still open.</u></p> <p>Review 2:</p> <p>In the PD version 04 it is explained how the CO₂ emissions would be higher in the absence of the proposed project activity.</p> <p><u>The clarification request is closed.</u></p>
<p>CL34 – In the barrier analysis section of the PDD version 05, investment barriers are identified. In this section it is stated that investment analysis is commercially sensitive information, however under section B.2 it is stated that there is no commercially sensitive information. Also according to CDM rules, information used to prove the additionality of the proposed project activity can not be commercially sensitive. This information may be asked to be made public at any stage of the VER crediting process.</p> <p>Please clarify.</p>		<p>The statement has been removed, since there is no commercially sensitive information.</p>	<p>The statement has been removed from the PD version 06.</p> <p><u>The clarification request is closed.</u></p>