Voluntary Carbon Standard 2007.1
Validation Report

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Validation Report:

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Validation Report for "The Cevizlik Run-of-River Hydroelectric Power Plant"	Burcu Mutman
Client:	Project Title:
Akım Enerji Uretimi San. Ve Tic. A.S.	"The Cevizlik Run-of-River Hydroelectric Power Plant"

Summary:

Bureau Veritas Certification has made the validation of ""The Cevizlik Run-of-River Hydroelectric Power Plant". The project activity involves the installation of a 92.96 MW runoff-river hydro electric power plant (HEPP) located in the Iyidere River Basin in the Eastern Black Sea Region. 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 187,471.5 tons/year. The crediting period of the project activity is 10 years, renewable once for a total of 20 years.

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 ACM0002, version 10 and meets the relevant VCS 2007.1 requirements and local legislation.

Work carried out by:	Number of pages:
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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)

1 INTRODUCTION

This report summarizes the findings of the validation of the "The Cevizlik Run-of-River Hydroelectric 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 92.96 MW runoff-river hydro electric power plant (HEPP) in Iyidere river basin in Rize province, in Eastern Black Sea Region of Turkey. The project comes under Type I – Renewable Energy Project as per Appendix B of the procedures for CDM project activities. The main purpose of the project is to generate approximately 335.03 GWh/year of electricity to supply the national grid using a renewable resource and tapping the significant hydropower potential in the region. The project activity reduces greenhouse gas (GHG) emissions that would have otherwise occurred in the absence of the project activity by avoiding electricity generation from fossil fuel sources. The average annual emission reductions of the proposed Project are estimated to be 187,471.5 tonnes of CO_2e (tCO_2e). The crediting period of the project activity is 10 years, renewable once for a total of 20 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 AKIM Enerji Uretimi Sanayi ve Ticaret A.S. (AKIM Enerji) and additional background documents related to the project design and baseline, i.e. Host Country 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, AKIM Enerji revised the PD several times, PD version 06 being the last version which was submitted to the validation team on 17.06.2010. After further clarifications all corrective action requests and clarification requests were closed in 21.06.2010.

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 June 2010 Bureau Veritas Certification performed interviews with AKIM Enerji and local stakeholders regarding the Grid emission factor, Investment Analysis, 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 21.06.2010 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 AKIM Enerji A.S. which is the project participant is helping the host country in fulfilling its goals of promoting sustainable development with this project. The project is in line with host-country specific requirements. In addition, the project highly supports the sustainable economic development in the region.

The conclusions of the validation team are as follows:

- *The technology used:*

  Cevizlik HEPP project entails the construction and operation of a 92.96 MW runoff-river hydro electric power plant (HEPP) in the Eastern Black Sea Region, in Iyidere River Basin in the province of Rize, Turkey. In the power

house, two vertical axis Francis turbines will be installed each with the capacity of 51.21 MW, the total capacity of the turbines will be 92.96 MW. These two units will work together as the project has one energy tunnel and one penstock to serve them. Since there will be some hydraulic losses due to water speed, the total guaranteed mechanical output will diminish to 92.96 MW.

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

- A regulation pond with a surface area of 14,091 m^2
- Flushing gate consisting of 3 gates, with a size of 3mx2.5mx4m
- A 7,981.485 m long, horseshoe type concrete lined headrace tunnel
- 5 access tunnels for the construction of the headrace tunnel with a total length of 2,278.5 m.
- A surge tank with a varying cross section
- Penstock with 3.4 m diameter with a length of 348.63 m.
- An Underground Powerhouse with 2 vertical axis Francis type Alstom Turbines
- Underground powerhouse access tunnel, horseshoe type with a length of 98.225 m
- A 21 km long, 154 kV energy transmission line

The net electricity delivery to the grid by the project is estimated to be 335.03 GWh per annum. The quantity of electricity required for operation of the plant is at a negligible level.

The technology used in the plant is a state-of-the-art technology with extensive automatization. The equipment to be provided is brand new according to the electromechanical equipment agreement. There is no new technology which 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 Cevizlik HEPP 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*

Expected starting date of the project activity is 29 May 2010, when the plant commences electricity generation. The carbon crediting period and therefore the monitoring starts when the plant commences electricity generation. The crediting life is a maximum of ten years which will be renewed once. The total crediting period is twenty years.

The expected life time of the project is, starting from 27 June 2007, minimum 48 years 4 months 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 AKIM Enerji Uretim Sanayi ve Ticaret A.S. A copy of the generation license is given in Annex 6 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 92.96 MW HEPP and it uses renewable sources to produce electricity. Since the installed capacity of the planned HEPP is larger than 15 MW; it is a large 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 "Cevizlik Hydro Electric Power Plant" project is established by using the UNFCCC official methodology ACM0002, version 10, namely "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

For the calculation of the grid emission factor, UNFCCC Methodological Tool "Tool to Calculate Emission Factor of an Electricity System" version 01.1 is used.

For the assessment and demonstration of additionality, UNFCCC Methodological Tool "Tool for the Demonstration and Assessment of Additionality", Version 05.2 is used.

Both of the tools are referred in the applied methodology.

Both the tools and the methodology 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 ***ACM0002 / Version 10***, is justified as the proposed project activity meets relevant applicability criteria:

Applicability condition in the ACM0002/Version 10	**Compliance of the condition**
This methodology is applicable when the project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.	The project activity is a Greenfield grid connected run-of-river hydropower project. The project activity is located across the İyidere river basin. The water is diverted using a diversion wall structure to the energy tunnel and then to the powerhouse. The water will be fed back to river through the tailrace canal. The diversion structure does not result in storage of water.
In the case of capacity additions,	This condition is not applicable to the

retrofits or replacements: the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.	project activity as it involves the installation of a new hydroelectric power plant.
In case of hydro power plants, one of the following conditions must apply: - The project activity is implemented in an existing reservoir, with no change in the volume of reservoir; or - The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m^2; or - The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m^2.	This condition is not applicable to the project activity as it does not result in a new reservoir. However, the project activity involves the construction of a regulation pond with a surface area of 14,091 m^2. The power density (PD) for this regulation pond is calculated as follows: PD=92,960,000 W/14,091 m^2 PD = 6,597 W/m^2 PD > 4 W/m^2 PD > 10 W/m^2, therefore, according to the methodology, there will be no emissions from the regulation pond.
This methodology is not applicable to project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the base line may be the continued use of fossil fuels at the site.	This condition is not applicable to the project activity as it does not involve switching from fossil fuel to renewable energy at the site of the project activity.
This methodology is not applicable to biomass fired power plants.	This condition is not applicable to the project activity as it does not involve the installation of a biomass fired power plant.
In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	This condition is not applicable to the project activity as it does not involve a capacity addition, retrofit or replacement of existing grid-connected renewable power plant/unit(s).

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.

As the project activity is not a retrofit or replacement of existing grid-connected renewable power plant, the step-wise procedure to identify the baseline given in ACM 0002 version 10 is not used for this project activity.

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

- *Assessment and demonstration of additionality:*

The assessment and demonstration of additionality of the project is done by using UNFCCC Methodological Tool "Tool for the Demonstration and Assessment of Additionality", Version 05.2. In applying this tool under Step 1a, the following four alternatives are identified as the alternative scenarios that are likely to happen in the absence of the project activity:

Alternative 1: The proposed project activity undertaken without being registered as a VCS project activity.

Alternative 2: Construction of a coal-fired power plant with equivalent installed capacity or annual electricity generation.

Alternative 3: Construction of a new power plant generating the same annual power generation from other renewable sources such as wind power, solar power and thermal energy.

Alternative 4: The continuation of the current situation. The equivalent electricity will be provided by the existing power units connected to the national grid.

From the above mentioned alternatives Alternatives 1 and 4 are assessed to be realistic and credible alternatives. Alternative 2 is eliminated as Akim Enerji has no experience in a thermal power plant. Alternative 3 is eliminated because of the lack of renewable resources in the vicinity of the proposed project activity.

Analyzing the alternatives that are defined as realistic, it is seen that all scenarios are consistent with the baseline definition of ACM0002 / Version 10. All of the alternatives are in compliance with legal requirements as they are practices currently present in the host country.

The project proponent both used Step 2 'Investment Analysis' and Step 3 'Barrier Analysis' for the demonstration of the additionality of the project activity.

Under Step 2-Investment Analysis there are four sub-steps.

Under sub-step 2a, Benchmark Analysis (Option III) is chosen and the other options are eliminated because, the proposed Project generates financial and economic benefits through the sales of electricity other than Voluntary Emissions Reduction (VCS-VER) related income. Therefore the simple cost analysis (Option

I) cannot be taken. Investment comparison analysis (Option II) is only applicable to projects where alternatives should be similar investment projects. The alternative baseline scenario of the proposed project is the continuation of the current situation, where the equivalent electricity will be provided by the existing power units connected to the national grid. This method is also assessed to be appropriate by the validation team.

Under sub-step 2b, Equity IRR is selected as a financial indicator. As a benchmark, Turkish Eurobond rates increased by a suitable risk premium using the CAPM model is used. 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'.

The country risk premium is taken from the study of Prof. Aswath Damodara. The Eurobond rate and risk premium value at the time of investment decision which is the date of the feasibility study (May 2005) is taken. The benchmark calculation is given below:

Parameter		Chosen Value	Source
Rf	Risk-free rate	8.6%	The yield of a synthetic bond with 49 years maturity at the time of decision was calculated using the yield curve derived from http://www.ziraat.com.tr/tr/bankamiz/faiz-ve-ucretler/aspx/eurobond.aspx was used. The details of the calculation can be found in a separate excel sheet provided to DOE. Please see Annex 7 to see the yield curve
β	Beta. Used to measure level of risk.	0.939	The average of energy companies traded in ISE 100 derived from one of the most prominenet data provider Bloomberg. Please see Annex 7 for Betas of these companies
Rm-Rf	Market equity risk premium	10.2%	http://www.stern.nyu.edu/~adamodar/pc/archives/ctryprem05.xls
Rm	Expected market return	18.18%	-

Hence the benchmark value is calculated as:

	Rf	+	β	x (	Rm	-	Rf	)	= Ce
Cevizlik Cost of Equity(Ce)	8.6%	+	0.939	x (	18.8%	-	8.6%	)	= 18.18%

The benchmark is calculated using a globally accepted model (CAPM-Capital Asset Pricing Model) and the data used for calculation is also applicable at the time of investment decision, hence the benchmark is assessed to be appropriate by the validation team and the financial expert.

Under sub-step 2c, the Equity IRR is calculated. Project proponents have also submitted an excel sheet showing the details of the calculations. Some revisions have been made to these calculations until the latest version which was submitted to the validation team together with the final VCS PD. The final approved version of the IRR calculation sheet is version 04 dated 22.04.2010.

Majority of the data used in the IRR calculations are taken from the feasibility study prepared by Hidro Dizayn Muhendislik, which is an independent Engineering

company which mainly professionalizes in preparing the feasibility assessment of Hydro Electric Power Plants. The date of the feasibility study is May 2005. The company has made the investment decision on the basis of this feasibility study, and has obtained the generation license on 27.06.2007. The contract for electrical works was signed in 04.12.2006, and the contract for equipments was signed on 05.12.2006.

Unlike many other Hydro Electric Power plants which are calculating the IRR for 20 years, the project proponents have calculated the IRR for 50 years from 2006 to 2055 until the license expiry date. This is on the conservative side as it reflects the reality and the calculations are not limited to the crediting period.

The loan assumptions were taken from section 12 of the feasibility study. Although not included in the feasibility study, short term borrowings were also reflected to the IRR calculations to finance the negative cash flow. This assumption was also assessed to be realistic by the financial expert.

The IRR of the project activity is around 13.4% without the VER revenues and around 14.2% with VER revenues at USD 7 /tCO_2 for 50 years both of which are under the benchmark expectation of 18.18%.

In the IRR calculations the annual power generation of the proposed project activity is taken as 383 GWh. With the transmission loss this figure goes down to 374 GWh per annum. This production figure was taken from the feasibility study to be able to reflect the situation during the decision making process. However with recent developments in the EIA regulation and changes in the minimum amount of water that will be left to the riverbed, the final generation figure is revised as 335.03 GWh. However the IRR calculations are not revised using this figure, which means that the calculations are on the conservative side.

The electricity sales price is taken as 0.06 USD/kWh which is the average electricity sales price of TEIAS at the time of investment decision. This price is also given in the feasibility report which is a basis for the investment decision. The minimum purchase guarantee of 0.05 €/kWh offered by the State as an incentive to renewable energy investments was not valid at the time of preparation of the feasibility report. Hence this sales price is accepted by the validation team.

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

Under Sub-step 2d, sensitivity analysis is applied to the following items:

- Total investment
- Electricity selling price
- Annual operational costs

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

The annual generation value is not included in the sensitivity analysis because even with the 10% increase in electricity production, the revised annual electricity production figure can not reach the electricity production value estimated at the time of investment decision.

According to this sensitivity analysis;

When the investment costs decrease 10%, the IRR of the project activity rises up to 14.9 % without VER revenues and up to 15.8 % with 7 USD/ton VER revenues. The IRR value decreases with the rise of the investment costs down to 12.1% without VER revenues and 12,8 with VER revenues at 7 USD/ton CO_2.

When electricity price raises 10%, the IRR of the project activity rises up to 14,8% without VER revenues and up to 15.5 % with 7 USD/ton VER revenues. The IRR value decreases with the decrease of the electricity price down to 11.9%

without VER revenues and 12.7% with VER revenues at 7 USD/ton CO_2. However as there is an electricity purchase guarantee, the decrease seems improbable.

For the operational expenses, when expenses decrease 10% the IRR goes up to 13.5% without VER and up to 14.3% with 7 USD/ton VER revenues. The IRR value decreases with the increase in operational expenses down to 13.3% and 14.0% with VER revenues at 7 USD/ton CO_2.

The above investment analysis show that only with the VER benefits the proposed project activity comes close to the benchmark IRR expectations.

The project proponent has also applied "Step 3: Barrier Analysis" of the additionality tool. The following barriers have been defined:

- Technological Barriers: Under technological barriers the lack of infrastructure for implementation and logistics for maintenance of the technology is explained as follows:

  The proposed project activity requires the construction of 21 km of new transmission line to be connected to the national grid. Even though connection costs will be offset against operational fees, they are prepaid in advance by the project owner. Since the project is the largest and the first of its kind in the region it had to construct the transmission lines and other connection facilities to the grid. Some other similar projects in the region will be able to use the same transmission line and connection facilities and they will not face a similar barrier like the project.

  Also as the turbines are tailor made for the proposed project activity, they need specific services and maintenance, which thus represents an additional operational cost as it is almost impossible to supply maintenance services locally for the turbines used in the project.

  This barrier is verified depending on the sectoral and regional experience of the validation team.

- Barriers due to Prevailing Practice: Under this barrier it is explained that the project activity is the biggest size run-off-river project ever realised in Turkey considering its installed capacity and first of its kind as it is constructed underground. Therefore, there is a lack of local knowledge and experience for both designing of civil works and construction for such a project as it was first of its kind. This barrier is verified via letter No. B.18.1.DSİ.0.12.05.00/21 dated 04 January 2010 from the State Hydraulic Works stating that the project is the biggest Run-off-river HEPP with an underground powerhouse in the Host country.

- Other Barriers: Under this barrier the bureaucratic structure in the host country is explained. The lack of coordination and cooperation within and between various ministries, agencies, institutes and other stakeholders is major obstacle to the introduction and implementation of renewable energy technologies in the country. This is reflected in the long waiting processes that the project developers must go through in order to obtain the legal permits. This barrier is verified depending on the sectoral and regional experience of the validation team.

The barriers listed above have been assessed by the validation team. The validation team has concluded that these barriers are valid and possess high risk for the proposed project activity. All of the barriers are barriers specific to HEPPs and do not pose a risk to thermal power plants.

The common practice analysis:

According to the "Tool for the demonstration and assessment of additionality" version 05.2, the common practice analysis shall be applied unless the proposed project activity has demonstrated to be first of its kind. As this project has demonstrated to be the first of its kind a detailed common practice analysis is not necessary. However the project proponents have also applied the common practice analysis results of which also supports the barrier analysis.

Under the common practice analysis section of the PD, HEPP projects in the host country is compared to the proposed project activity. Also an analysis of the HEPPs in Turkey is given. It is stated that according to the Turkish Electricity Generation Company (EUAS), only 18% of the hydroelectric installed capacity has a private participation, which shows that there is a lack of investor interest. The hydroelectric power plants put into operation between 2003 and 2006 is given in a tabular form in the PD and this shows that the plants with a generation capacity similar to the proposed project activity corresponds to HEPPs with dams and there is no other run-off-river project with a similar size.

The validation team has concluded that the proposed project activity is not common practice in the region due to the reasons that are explained above.

3.3 Monitoring Plan

- *Approval of the monitoring methodology:*

  The consolidated monitoring methodology for grid connected generation from renewable sources named as "Approved Monitoring Methodology ACM0002 / Version 10 is applied. All the applicability conditions of the monitoring methodology are the same as the applicability conditions of the baseline methodology which are given under section 3.2 of this validation report. The data will be archived electronically and be kept at least for 2 years after the end of the last crediting period. All measurements will be conducted with calibrated measurement equipment according to relevant industry standards.

- *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, this parameter will be the basis for the emission reduction calculations.

  According to the methodology ACM0002 version 10, the parameters used to calculate the Power Density of HEPPs also need to be monitored. These parameters are also included in the monitoring plan.

  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
$EG_{PJ,y}$	Quantity of net electricity generation supplied by the project to the grid in year y	Project activity site/electricity meters	MWh/y	Continuous measurement and at least monthly recording	Cross check measurement results with records for sold electricity. There will be two sets of meters one main meter and one check meter. If there is a measuring difference between these meters, then one of the parties may request calibration.
Cap_{PJ}	Installed capacity of the HEPP after implementation	Project site	MW	Yearly	Data will be determined based on recognized standards
A_{PJ}	Area of the regulation pond measured in the surface of the water after the implementation of the project activity when the reservoir is full	Project site	m^2	Yearly	Measured from topographical surveys, maps, satellite pictures, etc.
$NCV_{l,y}$	Net Calorific Value of fossil fuel types	TEIAS website	TJ	Once for each crediting period	-
$EF_{CO2,l,y}$	CO_2 Emission factor of fossil fuel type in year y	IPCC default values	tCO_2/GJ	Once for each crediting period	-
Electricity Capacity Additions	Power plants which are most recently taken into operation	TEIAS website	-	Once for each crediting period	-
$\eta_{m,y}$	Average net energy conversion efficiency of power unit m in year y	Tool to calculate emission factor for an electricity system	%	Once for each crediting period	
$EF_{Grid,CM}$	Combined margin CO_2 emission factor for grid connected power generation	TEIAS website and IPCC default values	tCO_2/MWh	Once for each crediting period	As per *"Tool to calculate the emission factor for an electricity system"*

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

1. *Electrical Engineers* will undertake the specific actions required by the monitoring plan, i.e. they will measure the electricity generation,will make calibration according to procedures, the electricity supplied to the Turkish grid by the power plant, the electricity imports and the amount of fuel consumed, if fuel is consumed.
2. *Mechanical Engineers* will ensure that all the instrumentations and devices to perform the monitoring are working properly.
3. *Accounting Manager* will be in charge of providing the electricity sales receipts to the Operations Manager of the plant.
4. *Operations Manager* will be the VER coordinator. He will be in charge of:
   a) Ensuring that instrumentations and devices are available and properly suited to perform efficiently the monitoring.
   b) Communicating and coordinating the monitoring tasks of all business units.

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 335.03 MWh per annum. The annual baseline emissions amount to 187,471.5 tCO_2e. Over the period of ten years, the total amount of baseline emissions will reach 1,874,715 tCO_2e. For all calculations, the rounded value of the combined emission factor, 0.559 is applied.

Year	Annual estimation of emissions reductions in tones of CO_2e
2010	111,455.7
2011	187,471.5
2012	187,471.5
2013	187,471.5
2014	187,471.5
2015	187,471.5
2016	187,471.5
2017	187,471.5
2018	187,471.5
2019	187,471.5
2020	76,015.9
TOTAL	**1,874,715**

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

  According to ACM0002/Version 10 if the power density (PD) of the hydro power plant is above 10 $W/m^{2,}$ Project Emissions is 0. The following calculation of the PD and the assumptions for the Project Emissions and

Leakage made afterwards, is found acceptable and suitable for the project activity by the validation team.

The power density of the project activity is calculated as follows:

$$PD = \frac{Cap_{PJ} - Cap_{BL}}{A_{PJ} - A_{BL}}$$

Where:

PD: Power density of the project activity, in W/m^2

Cap_{PJ}: Installed capacity of the hydro power plant after the implementation of the project activity (W)

Cap_{BL}: Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero

A_{PJ}: Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m^2)

A_{BL}: Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m^2). For new reservoirs, this value is zero

Cap_{PJ} = 92,960,000 W

Cap_{BL} = 0 (Justification: The project is a new hydro power plant)

A_{PJ} = 14,091 m^2

A_{BL} =0 (Justification: The project is a new hydro power plant))

Therefore;

PD = (92,960,000–0)/(14,091–0) = 6,957.0 W/m^2

Therefore;

PE_y and LE_y are assumed to be 0.

- *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 which 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 sytem". The efficiency factors used are on the conservative side.

- *The assumptions made for estimating GHG emission reductions*

  The only assumption is the one about project emissions which is 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*

  There are no uncertainties in the calculations.

3.5 Environmental Impact

According to the laws and regulations the project owners have prepared a detailed environmental impact assessment report and submitted this report to the Ministry of Environment and Forestry. After reviewing this report the Ministry of Environment and Forestry has granted the company with an EIA Positive document which is presented in Annex 1 of the PD.

The project has gone though two EIA processes, in the first EIA the amount of water to be left from the reservoir was around 150 liters/sec which was in line with the regulation. However there were some objections from the public and a lawsuit was filed in request for the stay of execution. As a part of this lawsuit, a panel of experts from Istanbul Technical University was consulted and after the experts have reviewed the flora and fauna of the region they have given a report stating that the amount of water to be left from the regulator shall be raised to 500 liters/sec. In line with this report, project proponent offered to raise the amount to 750 liters/sec.

However public has also objected the expert opinion and the court has consulted another panel of experts from University of Rize. The experts have given a report stating that the amount of water to be left from the regulator shall be raised to 2.800 liters/sec. In line with this decision the project activity has gone through another EIA and revised the EIA report to include the amount of water to be left from the regulator to 2.800 liters/sec. The revised EIA dated February 2009 was also approved by the Ministry of Environment and Forestry.

A fish-pass is also included in the design for the fish to travel upstream during spawning period.

To assess whether the project is in compliance with the environmental license, Rize Governorship Directorate of Environment and Forestry officials pays spot visits to the project site. During the site visit the protocol of such a visit dated 02.11.2009 No: 297 is seen by the validation team. This protocol also shows the project is in compliance.

3.6 Comments by stakeholders

The project owners organized a stakeholder consultation meeting according to EIA regulations of the host country on March 16, 2006. The stakeholders were informed via announcements in newspapers copies of which are presented in Annex 5 to the PD. The attendance list is also provided in Annex 5.

The participants comprised representatives from the community, relevant municipalities, public institutions and organizations, members of Parliament, scientists and inhabitants of the surrounding villages. All the aspects of the project including the socio-economic and environmental aspects were presented to the participants by a project developer representative and were discussed by the stakeholders. Clarifications were requested and the overall response to the project was encouraging and positive. All the hearings were held in Turkish.

The main concern of the stakeholders was the amount of water released to the riverbed. After the stakeholder consultation meeting there also has been a court case regarding the minimum water flow rate that should be left to the river bed. During the court case several experts from different universities have been consulted by the court. The reports of these experts list of which is given below below, were submitted to and reviewed by the validation team:

- Ondokuz Mayıs University Report prepared by Prof. Dr. Recep Bircan and Prof. Dr. Nazmi Polat with the cover letter no. B.30.2.ODM.0.70.00.00/ 184-04012 dated 04.06.2007
- The report prepared by Assoc. Prof. Davut Turan (Rize University) dated 18.07.2008 which was sent directly to the court.
- The report dated 31.07.2007, prepared by Prof. Dr. Izzet Ozturk, Prof. Dr. Ismail Toroz, Dr. Suleyman Ovez from Environmental Engineering Department of Istanbul Technical University.

According to these expert opinions the court has decided that the minimum amount of water flow that shall be left to the river bed shall be 2800 liters/sec and the EIA positive decision of the Turkish Ministry of Environment and Forestry dated 24.07.2006 lost its validity.

After this decision of the court the EIA report was revised on February 2009 and submitted to the Turkish Ministry of Environment and Forestry. The revised EIA report was also submitted to and reviewed by the validation team. In the revised EIA report the minimum amount of water flow rate to be left to the river bed is revised as 2800 liters/sec.

The Turkish Ministry of Environment and Forestry has reviewed this EIA Report and gave and EIA Positive Document No: 1657 dated 20.02.2009. This document was also submitted to and reviewed by the validation team.

Another concern was unemployment in the region. During the site visit it was seen that, the project provides job opportunities to many local workers.

The stakeholders were also present during the site visit. They were interviewed by the validator. All of the stakeholders that were interviewed were content with the project activity and the general opinion was that the project was very beneficial for the surrounding villages.

4 VALIDATION CONCLUSION

Bureau Veritas Certification has made the validation of "Cevizlik Hydroelectric Power Plant Project (HEPP), in Rize, Turkey".

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 (November-December 2009)

iii) Review of the investment analysis by the specialist and the validator (December 2009-April 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 2009 – June 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 and other barriers 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 14 October 2009 until Version 06 dated 17 June 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 06 dated 17 June 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 AKIM ENERJI that relates directly to the GHG components of the project and other reference documents are given below:

1. PD for "Cevizlik, Hydroelectric Power Plant Project(HEPP), in Rize, Turkey"
   Version 01 dated 14 October 2009
   Version 02 dated 15 January 2010
   Version 03 dated 10 March 2010
   Version 04 dated 28 April 2010
   Version 05 dated 20 May 2010
   Version 06 dated 17 June 2010
2. Baseline Calculation Excel Sheet
   Version 01 dated 11 September 2009
   (Emission factor-TurkishGrid-september 09)
   Version 02 dated 25 January 2010
   (New Baseline_Final -Total carbon emission)
   Version 03 dated 11 March 2010
   (New_Baseline_Final+_Total_carbon_emission March)
   Version 04 dated 24 May 2010
   (New_Baseline_Final+_Total_carbon_emission May)
   Version 05 dated 17 June 2010
   (New_Baseline_Final+_Total_carbon_emission May)
3. Investment Analysis – IRR Calculation Excel Sheet
   Version 01 dated 26 October 2009
   (Cevizlik Cash Flow Analysis for PDD)
   Version 02 dated 26 January 2010
   (Cevizlik Cash Flow Analysis for PDD (IterateD)2003)
   Version 03 dated 16 March 2010
   (IRR Analysis for PD)
   Version 04 dated 22 April 2010
   (IRR Analysis for PD)
   Version 05 dated 17 June 2010
   (IRR Analysis for PD-cvz)
4. Cevizlik HEPP Project Feasibility Report dated May 2005 prepared by "Hidro Dizayn Muhendislik ve Musavirlik Turizm ve Tic. Ltd. Sti."
5. The Final Environmental Impact Assessment Report prepared in February 2009 by "Dokay CED Cevre Muhendisligi Ltd. Sti."
6. The related pages of the electromechanical equipment purchase agreement with "ALSTOM Power Hidroelektrik Uretim Tesis Ticaret Isletme Ltd. Sti." and "ALSTOM-HYDRO-ESPANA-S.L."
7. The related pages of the construction contract with "Palet Insaat ve Ticaret A.S" and "Pustiler Insaat Ticaret ve Sanayi A.S."
8. The related pages of electric works contract with "Siemens Sanayi ve Ticaret A.S."
9. The insurance records of the regional employees.

10. The expert witness reports that were presented to the court regarding the minimum amount of water that shall be left to the riverbed.
11. The decision No: 2008/914 of the Rize Administrative Court regarding the minimum amount of water that shall be left to the riverbed.
12. The expert witness report that was presented to the court regarding the place of the switchyard station.
13. Docket No: 2009/469 of the Rize Administrative Court regarding the place of the switchyard station.
14. A complete list and protocols of the social aids that were made to the surrounding villages.
15. Approved consolidated baseline and monitoring methodology ACM 0002 version 10.
16. UNFCCC's Methodological Tool: "Tool for the demonstration and assessment of additionality", version 05.2
17. UNFCCC's Methodological Tool: "Tool to calculate the emission factor for an electricity system", version 01.1
18. VCS PD Template – 19 November 2007
19. VCS Validation Report Template – 19 November 2007
20. 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. Volkan Doğan, HEPP Investment Manager, Sanko Holding Inc.
2. Mr. Mustafa Gunbulut, Finance Director, Sanko Holding Inc.
3. Mr. Taner Sengonul, HEPP Investment Assistant Coordinator, Sanko Engineering & Consulting Co.
4. Mr. Mehmet Turkmen, Power Plant Manager, AKIM Enerji Uretimi San. Ve Tic. A.S.
5. Mr. Fazil Bostan, Staff & Local Resident, AKIM Enerji, Cevizlik HEPP
6. Mr. Selim Isik, Staff & Local Resident, AKIM Enerji, Cevizlik HEPP
7. Mr. Birol Topcakan, Cevizlik Village Head
8. Mr. Kemal Kose, Guneyce Mayor
9. Mr. Yuksel Yilmaz, Village Resident, Restaurant Owner

ANNEX I – Validators' Competence

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

Bureau Veritas Certification - Internal Technical Reviewer

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 : Ms. Hande Sezer – Mining Engineer

Bureau Veritas Certification SAS– 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 Arıkan 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 ''CO_2 Emission Research'' Studies. Academically, Yıldiz Arıkan is working also on GHG project since 2005

Investment Analysis Specialists:

Mr. Murat Gençer – Master of Economics

RiskTürk Software Development and Consultancy – Head of Financial Analysis Team

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

Mr. Haluk Cengiz – Business Administration

Bureau Veritas Certification – Financial Controller

Haluk Cengiz is a financial controller of Bureau Veritas Turkey since 1999. He has been graduated from Marmara University, Business Adminstration.

Internal Technical Reviewer : Ms. Burcu Mutman – Environmental Engineer

Bureau Veritas Certification – Senior Technical Specialist

Burcu Mutman is an auditor for environment, safety and quality management systems.

She is also lead verifier for GHG projects. Bureau Veritas Certification Holding SAS – Internal Technical Reviewer

ANNEX II - Validation Protocol

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 1.13 of the VCS PD. Also an official statement stating that the project has not created any other form of environmental credit is given in Annex 2 of the VCS 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 letter given in Annex 1. Please make sure the official no. of the letter is also included in the scanned copy.	**CAR1**	**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 ACM0002 version 10 and tools that are referred in ACM0002.	**OK**	**OK**
b. Is the Project Start Date before 1 January 2002? (If yes, a CAR shall be raised as the	VCS	5.2.1	The project start date is not before 1 January 2002.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Project Start Date for non-AFOLU projects for the VCS 2007.1 shall not be before 1 January 2002)					
c. Will this validation be completed within two 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)	VCS	5.2.1	This validation will be completed within two years of the project start date.	**OK**	**OK**
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 1 December 2011.	**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	VCS	5.2.1	N/A	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
removals generated by the project have been cancelled from the program; or national cap as applicable or; purchase and cancellation of GHG 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 GS crediting as it is a large scale HEPP. The project is not eligible for any of the compliance markets because of the position of the host country.	**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	VCS	5.2.3	N/A	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
been updated taking account of new data and changed VCS Program requirements where applicable?					
b. Standards and factors					
a. 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, publishedGovernment 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**
c. Project grouping					
a. Is this a grouped project?	VCS	5.6	This is not a grouped project, which is also stated under section 1.2 of the VCS PD. This was also verified during the site visit.	**OK**	**OK**
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	5.6	This is not a grouped project. The checklist	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
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?			question is N/A.		
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 and guidance from the VCS.	**OK**	**OK**
b. Is there a project title?	PD temp	1.1.	The project title is ***"The Cevizlik Run-of-River Hydroelectric Power Plant"*** as stated under section 1.1 of the PD. Please also state the date of the document in dd/mm/yyyy format under this section.	**CL1**	**OK**
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 wether the project category is part of a GHG program that has been approved by the VCS Board?	PD temp	1.2	It is stated under section 1.2 of the VCS PD that the project follows CDM rules which are approved by the VCS Board.	**OK**	**OK**
ii. Is it specified if the project is a Grouped project?	PD temp	1.2	It is stated under section 1.2 of the VCS PD that the project is not a grouped project.	**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 1.3 of the VCS PD the amount of emission reductions over the crediting period is estimated including the project size. In VCS PD version 01, it is estimated that the project will reduce **201,789 tons CO_2** every year resulting in a total reduction of **2,017,886 tons of CO_2 for the first crediting period.** As the project will reduce more than 5,000 tons of CO_2 and less than 1,000,000 tons of CO_2 per	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			year the project size Is defined as "Project" as per VCS rules.		
e. Is a brief description of the project provided?	PD temp	1.4	The brief description of the project activity is provided under section 1.4 of the VCS PD. In this section the location and purpose of the project is given together with the projects contribution to the region's sustainable development. The project is a 92.96 MW HEPP.	**OK**	**OK**
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 1.5 of the VCS PD. The location of the project activity is verified during the site visit using a GPS device.	**OK**	**OK**
g. Duration of the project activity/crediting period	PD temp	1.6			
i. Is the project start date, the date on which a financial commitment was made to the project and the project reached financial closure, provided?	PD temp	1.6	Under Section 1.6 of the VCS PD version 01, it is stated that: "- *Project start date: January 2008 (Date on which the project reached financial closure)* *- VCS crediting period start date: 1st December 2011.* *- VCS project crediting period: 10 years, renewable once."* According to VCS 2007.1 The Project Start Date is the date on which the project began reducing or removing GHG emissions. Please correct accordingly. Please also state the date on which a financial commitment was made to the project activity	**CL2**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			(i.e. the date of the investment decision)		
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	The crediting period start date is given as 1 December 2011 under section 1.6 of the VCS PD version 01. However during the site visit it was stated that the project will commence electricity generation starting from late December 2009. It is also stated under section 7 of the PD version 01 that the project will be commissioned on December 2009. The monitoring period and the crediting period starts when the project supplies electricity to the grid. Please clarify the crediting period start date.	**CL3**	**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, which is defined as the continuation of the current situation, is provided under section 1.7 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 as follows: *"The Cevizlik Hydroelectric Power Plant reduces greenhouse gas emissions that would have otherwise occurred in the absence of the project activity by avoiding electricity generation from fossil fuel sources both in the operating margin and build margin of the system"* under section 1.8 of the VCS PD.	**OK**	**OK**
j. Are project technologies, products, services and the expected level of activity described?	PD temp	1.9	The project technologies are given in a tabular format under section 1.9 of the VCS PD. Also detailed information on the products, services and expected level of activity is given under the	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			same section.		
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	The applicable mandatory laws that will be applied for the project are given under section 1.10 of the VCS PD version 01. Under this section the reference law number (footnote #3) given for the environmental law is wrong. Please clarify. Please send the scanned copy of the letter given in Annex-1 showing the letter number. (Footnote #6) Please send a scanned copy of the reference letter given under footnote #7	**CL4**	**OK**
l. Are risks that may substantially affect the project's GHG emission reductions or removal enhancements idendified?	PD temp	1.11	The only risk that may substantially effect the project's GHG emission reductions is defined as follows: *"According to Water Utility Rights which was signed for Cevizlik HEPP with Turkish State Hydraulic Works (DSI), DSI may instruct to increase the amount of water to be released from the water intake structure to the river bed for the future basin's needs for potable water. This means that the expected electricity generation may be subject to decrease upon DSI's request. Thus, substantially affecting the project's GHG emission reductions."*	**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 1.12 of the VCS PD.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
n. Has the project created another form of environmental credit (for example renewable energy certificates)?	PD temp	1.13	The project has not created another form of environmental credit. This is stated under section 1.13 of the VCS PD. Also an official statement stating that the project has not created any other form of environmental credit is given in Annex 2 of the VCS PD.	**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, this was also stated under section 1.14 of the VCS PD. The project is not eligible for GS crediting as it is a large scale HEPP. The project is not eligible for any of the compliance markets because of the position of the host country.	**OK**	**OK**
q. If yes, does the project:	PD temp	1.14	N/A	**OK**	**OK**
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 section 1.15 of the VCS PD. Please also briefly define the responsibilities of	**CL5**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			the contact persons regarding the carbon crediting process.		
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 is not provided. Please provide the projects social, economic, environmental, site-specific contributions which are given under section 1.4 of the VCS PD version 01 under this section. During the site visit it was seen that apart from the contributions listed under section 1.4 of the VCS PD version 01, the project owner has made many more contributions to the project area. Please also list these contributions under this section.	**CAR2**	**OK**
t. Is there any commercially sensitive infromation 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	There is no commercially sensitive information that has been excluded from the public version of the VCS PD that will be displayed on the VCS Project Database. In the VCS PD section 1.17 this section is defined as N/A.	**OK**	**OK**
u. If yes, was it listed?	PD temp	1.17	Please reconfirm that there is no commercially sensitive information that needs to be excluded from the public version of the VCS PD that will be displayed on the VCS Project Database.	**CL6**	**OK**
v. Are title and reference of the VCS methodology applied to the project activity and explanation of methodology choices provided?	PD temp	2.1	Under section 2.1 of the VCS PD, the title and the reference of the methodology are given as follows: *"The approved baseline and monitoring methodology ACM0002-Version 10:*	**CL7**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			"Consolidated baseline methodology for grid-connected electricity generation from renewable sources" ("ACM0002") is applied. For the purpose of establishing additionality, Version 05.2 of the "Tool for the demonstration and assessment of additionality" ("Additionality Tool") is also used." However, although the UNFCCC Methodological Tool "Tool to calculate emission factor for an electricity system" is used, this tool is not referred under this section of the PD version 01. Please clarify.		
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 2.2 of the VCS PD as follows: Applicability to ACM0002 Version 10: ℘ The project activity is a Greenfield grid connected run-of-river hydropower project. The project activity is located across the Iyidere river basin. The water is diverted using a diversion wall structure to the energy tunnel and then to the powerhouse. The water will be fed back to river through the tailrace canal. The diversion structure does not result in storage of water. ℘ The project activity involves the construction of a regulation pond with a		

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			surface area of 14,091 m^2. The power density (PD) for this regulation pond is calculated as follows: PD = 92,960,000 W/14,091 m^2 = 6,597 W/m^2 > 4 W/m^2		
			In ACM0002 Version 10, under the project emissions section it is stated that for hydropower plants if the power density of the project activity (PD) is greater than 10 W/m^2, $PE_{HP,y}=0$"	**CL8**	**OK**
			Please also state in the VCS PD that the PD is greater than 10 W/m^2.		
			Please define the compliance of the project activity to the applicability conditions for both the UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality" Version 05.2 and UNFCCC Methodological Tool " Tool to calculate the emission factor for an electricity system" Version 01.1.	**CAR3**	**OK**
y. Are GHG sources, sinks and reservoirs identified for the baseline scenario and for the project?	PD temp	2.3	Under section 2.3 of the PD version 01, the GHG sources are identified for both the baseline scenario and the project using the tabular format given in the methodology ACM0002 Version 10. There are no GHG sinks and reservoirs defined in the methodology and in the PD version 01. Under section 2.3 of the PD version 01 it is stated that: *"The life cycle emissions of alternative power generation plants, in particular fossil fuel-fired power plants, are typically higher than those*	**CL9**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			from hydroelectric power plants when including emissions due to mining, refining and transportation of fossil fuel." Please provide objective evidence or a reference source to prove the above mentioned statement.		
			Please send a scanned copy of the reference source given in footnote #8 (and 26) to the validation team.	**CL10**	**OK**
z. Is it described how the baseline scenario is identified and the identified baseline scenario?	PD temp	2.4	Under section 2.4 of the VCS PD version 01 it is stated that the baseline scenario is identified according to the methodology ACM0002 which is as follows: *"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"".* It is also approved by the validation team that the selected baseline scenario is in line with the methodology.	**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 source in baseline scenario are reduced below those that would have occurred in the absence of the project activity (assessment and	PD temp	2.5	Under section 2.5 of the VCS PD version 01, it is described how the GHG emissions by source are reduced below those that would have occurred in the absence of the project activity using the	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
demonstration of additionality)?			latest version (version 05.2) of the UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality" as suggested by the methodology ACM0002. For further information please refer to "Table 3: Checklist based on Methodological tool for assessment of additionality (version 05.2 - EB 39 report Annex 10)"		
dd. Has the project proponent demonstated, 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 UNFCCC Approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" and the additionality tool referred in this methodology. 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	Under section 3.1 of the VCS PD the title and reference of the VCS methodology applied to the project activity is given as follows: *"The approved baseline and monitoring methodology ACM0002-Version 10: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" ("ACM0002") is applied"*	**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	Under section 3.2 of the VCS PD version 01, the purpose of monitoring plan is described as follows: *"to ensure that the monitoring and calculation of emission reductions of the proposed Project*	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			within the crediting period is complete, consistent, clear and accurate"		
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 under section 3.4 of the VCS PD version 01, however according to VCS PD template this information should be given under section 3.2. Please revise accordingly.	**CL11**	**OK**
iii. Origin of the data?	PD temp	3.2	The origin of the data is given as the readings from the meters obtained by the Electrical Engineers which is stated under section 3.4 of the VCS PD version 01, however according to VCS PD template this information should be given under section 3.2. Please revise accordingly.	**CL12**	**OK**
iv. Monitoring, including estimation, modelling, measurement or calculation approaches?	PD temp	3.2	Information about the monitoring is given under section 3.4 of the VCS PD version 01. Measuring will be done by the meters; Electrical Engineers will obtain the readings from the meters and will report them in a spreadsheet, however according to VCS PD template this information should be given under section 3.2. Please revise accordingly.	**CL13**	**OK**
v. Monitoring times and periods, considering the needs of intended users?	PD temp	3.2	Monitoring period is given as annual under section 3.4 of the VCS PD version 01, however according to VCS PD template this information should be given under section 3.2. Please clarify.	**CL14**	**OK**
vi. Monitoring roles and responsibilities ?	PD temp	3.2	Monitoring roles and responsibilities have been defined clearly in the monitoring plan. Under section 3.4 of the VCS PD version 01 It is stated that the Electrical Engineers will be trained on	**CL15**	**OK**

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			calibration of the equipment however calibration is not listed as one of their responsibilities under section 3.2.		
vii. Managing data quality?	PD temp	3.2	It is stated under section 3.2 of the VCS PD version 01 that: *"Data will be recorded for each crediting period and maintained at least 2 years after its end. The company will establish a dedicated maintenance system to ensure the data availability for the required period."*	**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	The only data and parameters that are monitored are $EG_{PJ,y}$ (which is equal to $EG_{facility,y}$ as per ACM0002) and $EF_{grid,CM}$. However for hydropower plants parameters Cap_{PJ} and A_{PJ} also need to be monitored according to ACM0002. Also according to UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" the following parameters needs to be included in the monitoring plan: ℘ $FC_{i,y}$ ℘ $NCV_{i,y}$ ℘ $EF_{CO2,i,y}$ ℘ EG_y, $EG_{m,y}$ ℘ $\eta_{m,y}$ ℘ $PE_{FF,y}$ As $EF_{grid,CM}$ is calculated using these parameters, all of these parameters needs to be monitored. Please revise the monitoring plan to include the above mentioned parameters.	**CAR4**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
i. Data unit?	PD temp	3.3	In the VCS PD version 01, data unit is given as MWh/y for $EG_{PJ,y}$ and tCO_2/MWh for $EF_{grid,CM,y}$ as per the methodology ACM0002. The data units will be checked again when the revisions requested in section gg of this checklist are reflected in the monitoring plan.		**OK**
ii. Description?	PD temp	3.3	In the VCS PD version 01, the descriptions for both of the parameters ($EG_{PJ,y}$ and $EF_{grid,CM,y}$) are given as per the methodology ACM0002. The descriptions of the parameters will be checked again when the revisions requested in section gg of this checklist are reflected in the monitoring plan.		**OK**
iii. Source of data to be used?	PD temp	3.3	In the VCS PD version 01, the source of data used for $EG_{PJ,y}$ is given as per the methodology ACM0002. The source of data for the parameter $EF_{grid,CM,y}$ is given as TEIAS, however this parameter is calculated using data both from TEIAS and IPCC. Please clarify. The source of data for $EF_{grid,CM,y}$ and the other parameters will be checked again when the revisions requested in section gg of this checklist are reflected in the monitoring plan.	**CL16**	**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 $EG_{PJ,y}$ is given as 335,030 MWh/yr. Please explain how this value is calculated by giving the calculation details. The value applied for the parameter $EF_{grid,CM}$ is given as 0.6023 as per the baseline calculations.	**CL17**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			This value will be validated after all the CARs and CLs on the baseline calculations are resolved. 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.		
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 as per ACM0002 for the parameters $EG_{PJ,y}$ and $EF_{grid,CM,y}$. The monitoring frequency for the parameter $EF_{grid,CM}$ is not given. The monitoring frequency for the parameter $EG_{PJ,y}$ is given as *"hourly measurement and monthly recording"* where it should be "continuous measurement and at least monthly recording" as per ACM0002. Please revise accordingly. The description of measurement methods and procedures to be applied will be checked again when the revisions requested in section gg of this checklist are reflected in the monitoring plan.	**CAR5**	**OK**
vi. QA/QC procedures to be applied?	PD temp	3.3	QA/QC procedures to be applied for the parameter $EG_{PJ,y}$ is given as per ACM0002. However QA/QC procedures to be applied for the parameter $EF_{grid,CM,y}$ is not given in the monitoring plan. Please clarify. The QA/QC procedures to be applied will be checked again when the revisions requested in section gg of this checklist are reflected in the	**CL18**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			monitoring plan.		
vii. Any comment?	PD temp	3.3	No comment is given for parameter $EG_{PJ,y}$ and a comment for the parameter $EF_{grid,CM,y}$. is given as per ACM0002. The comments will be checked again when the revisions requested in section gg of this checklist are reflected in the monitoring plan.		**OK**
hh. Is the monitoring plan described?	PD temp	3.4	The monitoring plan is described in detail under section 3.4 of the VCS PD version 01.	**OK**	**OK**
ii. Are methodological choices explained?	PD temp	4.1	Methodological choices are explained under section 4.1 of the VCS PD version 01. However the UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" is not referred to under this section. Please clarify.	**CL19**	**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 4.2 of the VCS PD version 01.	**OK**	**OK**
kk. Are GHG emissions and/or removals for the project quantified?	PD temp	4.3	*"The project activity involves the construction of a regulation pond with a surface area of 14 091 m2. The power density (PD) for this regulation pond is calculated as follows: PD = 92 960 000 W/14 091 m^2 PD = 6 597 W/m^2 PD > 4 W/m^2"* According to ACM0002 version 10, "If the PD of the project activity is greater than 10 W/m^2: $PE_{HP,y}$=0" Please also state in the VCS PD that the PD is greater than 10 W/m^2.	**CL8**	**OK**
ll. Are GHG emission reductions and removal enhancements for the GHG project quantified?	PD temp	4.4	The GHG emission reductions and removal enhancements for the GHG project are quantified	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			under section 4.4 of the VCS PD version 01.		
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	A summary of the environmental impact assessment is given under section 5 of the VCS PD version 01. The whole EIA report was also submitted to the validation team. This summary has been validated using the original EIA report.	**OK**	**OK**
nn. Were relevant outcomes from stakeholder consultations and mechanisms for on-going communication provided?	PD temp	6	Relevant outcomes from stakeholder consultations are provided under section 6 of the VCS PD version 01. The stakeholders comments were also taken during the site visit via interviews. All the stakeholders that were interviewed were content about the project activity.	**OK**	**OK**
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 given under section 7 of the VCS PD version 01. Please also include in this chronological plan the following: ℘ 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	**CAR6**	**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 revised generation license was sent to the validation team as a proof of title, and please also present the generation license taken from EMRA as an attachment to the VCS PD. Please also state who will have the ownership of the emission reductions. Please correct the numbering under section 8 of	**CL20**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			the VCS PD version 01.		
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**
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	PD temp	8.2	N/A	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
cap?					
e. Additionality					
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 Approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" and the additionality tool referred in this methodology. According to Frequently Asked Questions sections on the VCS website, the VCS additionality guidance is not a substitute for the additionality requirements set out in the methodology being used. Therefore the checklist question is N/A. The additionality of the project activity is assessed using "Table 3: Checklist based on Methodological tool for assessment of additionality (version 05.2 - EB 39 report Annex 10)" of this protocol.	**OK**	**OK**
b. If the project proponent used Test 1:	VCS	5.8			
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. The additionality of the project activity is assessed using Table 3 of this protocol.	**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. The additionality of the project activity is assessed using Table 3 of this protocol.	**OK**	**OK**
i. Investment Barrier – Does the project face capital or investment	VCS	5.8	Please refer to question a above. The checklist question is N/A. The additionality of the project	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
return constraints that can be overcome by the additional revenues associated with the generation of VCUs?			activity is assessed using Table 3 of this protocol.		
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. The additionality of the project activity is assessed using Table 3 of this protocol.	**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. The additionality of the project activity is assessed using Table 3 of this protocol.	**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. The additionality of the project activity is assessed using Table 3 of this protocol.	**OK**	**OK**
ii. if it is common practice, have the project proponents identified barriers faced compared with existing projects?	VCS	5.8	Please refer to question a above. The checklist question is N/A. The additionality of the project activity is assessed using Table 3 of this protocol.	**OK**	**OK**
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. The additionality of the project activity is assessed using Table 3 of this protocol.	**OK**	**OK**
iv. Was it collected data on all baseline candidates within the geographic area and calculating a relative percentage for each different technology or practice?	GHG PROTOCOL	7.4.2 AND 7.6	Please refer to question a above. The checklist question is N/A. The additionality of the project activity is assessed using Table 3 of this protocol.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
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). 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.					
c. If the project proponent used Test 2:	VCS	5.8			
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. The additionality of the project activity is assessed using Table 3 of this protocol.	**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. The additionality of the project activity is assessed using Table 3 of this protocol.	**OK**	**OK**
ii. Are performance standard based	VCS	5.8	Please refer to question a above. The checklist	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
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)			question is N/A. The additionality of the project activity is assessed using Table 3 of this protocol.		
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. The additionality of the project activity is assessed using Table 3 of this protocol.	**OK**	**OK**
ix. Step 2: Technology Additionality – Are the project and its location contained in the list of project types and applicable areas approved as being additional by the VCS Program? (The approved list is available on www.v-c-s.org)	VCS	5.8	Please refer to question a above. The checklist question is N/A. The additionality of the project activity is assessed using Table 3 of this protocol.	**OK**	**OK**
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 ACM0002 Methodology. According to ACM0002 for greenfield renewable power plants the only applicable baseline scenario is as follows: *"Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and*	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			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" Under section 2.4 of the VCS PD version 01, the project proponent has stated that the above mentioned baseline scenario is used for the project.		
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 ACM0002 therefore the checklist question is N/A. The appropriateness of the baseline scenario and the calculations are assessed using "Table 2: Baseline and Monitoring Methodologies: ACM0002 Version 10" of this protocol.	**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 ACM0002 therefore the checklist question is N/A. The appropriateness of the baseline scenario and the calculations are assessed using "Table 2: Baseline and Monitoring Methodologies: ACM0002 Version 10" of this protocol.	**OK**	**OK**
i. Does the project proponent select or establish criteria and procedures for identifying and assessing potential baseline scenarios considering the following ? a) the project description, including identified GHG	ISO 1406 4.2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. The appropriateness of the baseline scenario and the calculations are assessed using "Table 2: Baseline and Monitoring Methodologies:	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
sources, sinks and reservoirs (see 5.3); b) existing and alternative project types, activities and technologies providing equivalent type and level ofactivity of products or services to the project; c) data availability, reliability and limitations; d) other relevant information concerning present or future conditions, such as legislative, technical, economic,sociocultural, environmental, geographic, site-specific and temporal assumptions or projections.			ACM0002 Version 10" of this protocol.		
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 ?	ISO 1406 4.2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. The appropriateness of the baseline scenario and the calculations are assessed using "Table 2: Baseline and Monitoring Methodologies: ACM0002 Version 10" of this protocol.	**OK**	**OK**
iii. Does the project proponent select or establish, explain and apply criteria and procedures for identifying and justifying the baseline scenario ?	ISO 1406 4.2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. The appropriateness of the baseline scenario and the calculations are assessed using "Table 2: Baseline and Monitoring Methodologies: ACM0002 Version 10" of this protocol.	**OK**	**OK**
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 ?	ISO 1406 4.2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. The appropriateness of the baseline scenario and the calculations are assessed using "Table 2: Baseline and Monitoring Methodologies: ACM0002 Version 10" of this protocol.	**OK**	**OK**
v. Does the project proponent select or establish, justify and apply criteria and	ISO 1406	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the	**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 wouldoccur in the baseline scenario ?	4.2		checklist question is N/A. The appropriateness of the baseline scenario and the calculations are assessed using "Table 2: Baseline and Monitoring Methodologies: ACM0002 Version 10" of this protocol.		
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 project participant has demonstrated that the project has met all relevant regulations. This was also confirmed during the site visit by seeing the originals of the permits.	**OK**	**OK**
h. Monitoring the GHG project					
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 activity.	**OK**	**OK**
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	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			activity.		
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 3.4 of the PD version 01 that: *"The meters will be calibrated according to the procedures and specifications established in the applicable legislation."* The calibration records of all the equipment used in monitoring shall be checked during the verification of the project activity.	**OK**	**OK**
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. Monitoring reports for the GHG project					
a. Do monitoring reports include all the monitoring data, calculations, estimations,	VCS	5.12	The project is at validation stage therefore the checklist question is N/A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
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)					
j. Records relating to the project					
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**
k. Information to validator and verifier					
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 supporting information and data needed to evidence statements and data in the monitoring report?	VCS	5.14	The project is at validation stage therefore the checklist question is N/A.	**OK**	**OK**

TABLE 2 BASELINE AND MONITORING METHODOLOGIES: ACM 0002 VERSION 10

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
1. Baseline Methodology					
1. 1. Applicability					
1.1.1. Does the project activity generate electricity from a renewable source?	PD1.2	DR	The project is a run-off river hydro electric power plant, which generates electricity from a renewable source.	**OK**	**OK**
1.1.2. Is the power connected to the grid?	PD1.4	DR	The project is connected to the Turkish National grid.	**OK**	**OK**
1.1.3 If answer to question above is 'No', whether it displaces the electricity generated in grid ?	-	-	N/A	**OK**	**OK**
1.1.4 Is the baseline methodology used in conjunction with the approved monitoring methodology ACM0002	PD2.1 2.2	DR	In the VCS PD version 01, the baseline methodology is used in conjunction with the approved monitoring methodology ACM0002. The choice of the baseline methodology is justified in section 2.2 of the VCS PD.	**OK**	**OK**
1.1.5 Does the project activity relate to electricity capacity additions from renewable sources?		DR	The project activity is not a capacity addition to an existing plant, therefore the checklist question is N/A.	**OK**	**OK**
1.1.6 Does proposed project activity falls in either of the categories – Green filed Power Project, Power capacity expansion, Energy efficiency Improvement / Fuel Switch	PD2.2	DR	The project activity is a Greenfield grid connected run-of-river hydropower project as it involves the construction of a new hydro electric power plant, which was also verified during the site visit.	**OK**	**OK**
1.1.7 Can the geographic and system boundaries for the relevant electricity grid be clearly identified?	PD2.3	DR	The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the national electricity grid. There is an interconnected sytem for the electricity distribution in Turkey. This is also stated under section 2.3 of the PD		

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			version 01. Please send a scanned copy of the reference source given in footnote #8 (and 26) to the validation team.	**CL10**	**OK**
1.1.8 Is the information on the characteristics of the grid available?	TEIAS	DR	The information on the characteristics of the grid is available on the TEIAS website.	**OK**	**OK**
1.1.9 Will the Project activity consume in-house biomass or will it be purchased from outside?			Project will not consume biomass in any stage, as it is a hydropower plant.	**OK**	**OK**
1.1.10 Will implementation of Project result in increase in processing capacity of raw input?			Implementation of the Project will not result in increase in processing capacity of raw input.	**OK**	**OK**
1.1.12 Will biomass to be used by Project activity be stored for more than one year?			N/A	**OK**	**OK**
1.1.13 Will biomass require significant energies (like Processing) other than transportation?			N/A	**OK**	**OK**
1.1.14 Is material and energy balance (heat and steam requirements for the processes) information available and assessed Old plants Proposed plants			N/A	**OK**	**OK**
1. 2. Project boundary					
1.2.1. Did the project participant account for the CO_2 emissions from electricity generation in fossil fuel fired power that is displaced due to project activity?	PD2.3	DR	Yes the project participant accounts for the CO_2 emission from electricity generation in fossil fuel fired power that is displaced due to project activity under section 2.3 of the VCS PD version 01, according to ACM0002 version 10 Table 1.	**OK**	**OK**
1.2.2 Did the project participant account for the CO2 emission from Heat generation in fossil fuel based power that is displaced due to project activity?			N/A	**OK**	**OK**
1.2.3. Does the spatial extent of the project boundary include the power plant at project site, means of transportation of biomass and all power plants connected physically to the electricity system that the	PD2.3	DR	There is not an independent regional grid system neither in Rize nor in Eastern Black Sea region therefore the project electricity system and the connected system are the same.		

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
VCS project power plant is connected to?			There is an interconnected sytem for the electricity distribution in Turkey. This is also stated under section 2.3 of the PD version 01. Please send a scanned copy of the reference source given in footnote #8 (and 26) to the validation team.	**CL10**	**OK**
1.2.4. Is 'Biomass dumped or left to decay or burned in uncontrolled manner without utilizing for energy purposes most likely scenario?			N/A	**OK**	**OK**
1.2.5. If answer to Question 1.2.3 is Yes, then are CH4 emissions in the project boundary are included?			N/A	**OK**	**OK**
1.2.6. If answer to Question 1.2.3 is Yes, then are CH4 emissions calculated in a conservative manner using emission factors for uncontrolled burning of biomass?			N/A	**OK**	**OK**
1.2.7. Whether choice of inclusion/exclusion CH_4 emissions in project and baseline are documented in PDD?	PD2.2	DR	It is stated under section 2.2 of the VCS PD version 01 that: *"The project activity involves the construction of a regulation pond with a surface area of 14 091 m2. The power density (PD) for this regulation pond is calculated as follows: PD = 92 960 000 W/14 091 m^2 PD = 6 597 W/m^2 PD > 4 W/m^2"* According to ACM0002 version 10, "If the PD of the project activity is greater than 10 W/m^2: $PE_{HP,y}$=0" Please also state in the VCS PD that the PD is greater than 10 W/m^2.	**CL8**	**OK**
1.2.8. Is the regional project electricity system identified by the spatial extent of the power plants	PDv01 2.3	DR	There is an interconnected system for the electric distribution in Turkey. Thus there is no	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
that can be dispatched without significant transmission constraints?			independent regional electricity system or any significant transmission constraints.		
1.2.9. Whether N_2O has been excluded as GHG source within the project boundary?	PDv01 2.3	DR	N_2O has been excluded as a GHG source within the project boundary as suggested by the methodology.	OK	OK
1.2.10. Are the assumptions made in determining the project electricity system defined and justified?	PDv01 4.2	DR	The assumptions made in determining the project electricity system are not defined and justified. Please define and justify the assumptions made in determining the project electricity system in line with the requirements given in ACM0002 and "Tool to calculate the emission factor for an electricity system"	CL21	OK
1.2.11. Does the application of this methodology result in a clear grid boundary?	PDv01	DR	The application of this methodology results in a clear grid boundary which is the Turkish National grid.	OK	OK
1.2.12. Does the application of this methodology result in a given country specific variations in grid management policies?	PDv01	DR	The application of this methodology does not result in a given country specific variations in grid management policies.	OK	OK
1.2.13. If answer to question is yes then whether DNA of the host country provides the delineation of grid boundaries.	PDv01	DR	N/A	OK	OK
1.2.14. If answer to question is no whether DNA guidance is available for defining the boundary.	PDv01	DR	There is no DNA in Turkey, therefore the checklist question is N/A.	OK	OK
1.2.15. If answer to question is no whether the layered dispatch system (e.g. state/provincial/regional/national) the regional grid is used	PDv01	DR	There is no layered dispatch system in Turkey, therefore the checklist question is N/A.	OK	OK
1.2.16. If the regional grid is not used whether the national or state grid is used.	PDv01 2.3	DR	The Turkish national grid is used.	OK	OK
1.3. Identification of alternative baseline scenarios					
1.3.1. Are Realistic and credible alternatives separately determined for power, biomass and Heat?	PDv01 2.4	DR	The project activity is the implementation of a new grid-connected renewable power plant, therefore	OK	OK

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			there is only one applicable baseline scenario according to the ACM0002 which is: *"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"".* Therefore the checklist question is N/A.		
1.3.2. Are the various options for alternatives explained in PDD?	PDv01 2.4	DR	The checklist question is N/A. Please refer to question 1.3.1.	**OK**	**OK**
1.3.3. Is the explanation of these options transparent and complete	PDv01 2.4	DR	The checklist question is N/A. Please refer to question 1.3.1.	**OK**	**OK**
1.3.4 Did the project participant provide evidence and supporting documents to exclude baseline options that do not comply with legal and regulatory requirements; or depend on key resources such as fuels, materials or technology that are not available at the project site?	PDv01 2.4	DR	The checklist question is N/A. Please refer to question 1.3.1.	**OK**	**OK**
1.3.5 Are the calculations for baseline are as per latest version of ACM0002 as required by this methodology?	PDv01 2.1	DR	The baseline calculations are as per ACM0002 version 10 which is the latest version of the methodology.	**OK**	**OK**
1.3.6 Are transmission & Distribution losses neglected as required by the methodology?	PDv01	DR	Transmission & distribution losses are neglected in the emission reduction calculations as required by the methodology. But this is not stated in the VCS PD version 01. Please clarify.	**CL22**	**OK**
1.3.7 Is quantity of electricity required for operation of plant subtracted?	PDv01	DR	The electricity which will be supplied to the grid will be the net electricity. However this should be checked during the verification stage.	**OK**	**OK**
1.3.8 Where EG-historical is the average of historical electricity delivered by the existing facility to the Grid, whether spanning all data from the most recent	PDv01	DR	The project is a Greenfield power plant, therefore the checklist question is N/A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
available year (or month, week or other time period) to the time at which the facility was constructed, retrofit, or modified in a manner that significantly affected output (i.e., by 5% or more), expressed in MWh per year. A minimum of 5 years (120 months) (excluding abnormal years) of historical generation data is required in the case of hydro facilities.					
1.3.9. Whether a minimum of three years data is referred and used in case the project is non-hydro?	PDv01	DR	The project is a Greenfield power plant, therefore the checklist question is N/A.	**OK**	**OK**
1.3.10. Is it required to estimate the point in time when the existing equipment would need to be replaced in the absence of project activity?	PDv01	DR	The project is a Greenfield power plant, therefore the checklist question is N/A.	**OK**	**OK**
1.3.11 If the answer to question is Yes Whether project participants have taken any of the two approaches, indicated in the ACM0002 into account?	PDv01	DR	The project is a Greenfield power plant, therefore the checklist question is N/A.	**OK**	**OK**
1.3.12 Whether the typical average technical lifetime of the type equipment is determined and documented taking into account common practices in the sector and country e.g. based on industry surveys, statistics, and technical literature?	PDv01 2.5	DR	The project is a Greenfield project and does not involve any capacity addition to an existing power plant. Therefore the checklist question is N/A.	**OK**	**OK**
1.3.13. Whether the common practices of the responsible company regarding the replacement schedules is evaluated and documented, e.g. based on historical replacement records for such equipment?	PDv01	DR	The project is a Greenfield project and does not involve any capacity addition to an existing power plant. Therefore the checklist question is N/A.	**OK**	**OK**
1.3.14. Whether the baseline emission factor is calculated as a combined margin consisting of the combination of operating margin (OM) and build margin factors according to three steps indicated in the methodology ACM0002?	PDv01 4.2	DR	The baseline emission factor is calculated as a combined margin consisting of the combination of OM and BM factors according to the steps indicated in the UNFCCC methodological tool "Tool to calculate the emission factor of an electricity system" as suggested by the methodology ACM0002 version 10.	**OK**	**OK**
1.3.15 Whether the weighted average applied by project participant is fixed for a crediting period.	PDv01 4.2	DR	The weighted average applied by the project participant is fixed for the first crediting period as	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			suggested by the UNFCCC methodological tool "Tool to calculate the emission factor of an electricity system".		
1.3.16. Whether operating margin emission factors calculations are based on one of the four methods described in the methodology ACM 0002?	PDv01 4.2	DR	OM emission factor calculations are based on the "Option C of the Simple OM (Method (a))" method described in ACM0002's referred methodological Tool to Calculate the Emission Factor for an Electricity System. The reasoning behind this selection is given below: *"The method (c) requires the detailed operation and hourly dispatch data of power plants in the grid. To date, there is no publicly available dispatch data for the Turkish grid. Method (c) is therefore not applicable.* *The method (b), simple adjusted OM, needs the annual load duration curve of the grid. Based on the same reason stated above, the data required are difficult to obtain. Method (b) is therefore not applicable.* *The method (d), average OM, is used when low-cost/must run resources constitute more than 50% of the total amount of power generation on the grid. According to TEIAS, the total electric power generation of the Turkish Grid in 2007 is 191,558 GWh, in which gas power generation is 95,025 GWh, accounting for 61.3% and coal/lignite power generation is 53,431GWh accounting for 34.5%. Therefore, the Turkish grid generation system is dominated by gas power, and this trend will not be easy to curb in the mid-long term. Method (d) is therefore not applicable.*	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			The Simple OM method (a) can be used when low-cost/must run resources constitute less than 50% of the total amount of the power generation on the grid, in average of the five most recent years. As mentioned before, in 2007 the Turkish grid generation system is dominated by gas power. Therefore, method (a) is the most appropriate method to calculate the OM emission factor."		
1.3.17 Is the most likely baseline scenario 'electricity production from other sources feeding into the grid?	PDv01 2.4	DR	The most likely baseline scenario is the 'electricity production from other sources feeding into the grid' as also stated under section 2.4 of the VCS PD version 01.	**OK**	**OK**
1.3.18 If the project activity modifies or retrofits an existing electricity generation facility, is the guidance by EB08 taken into account?	PDv01	DR	The project activity is a Greenfield power plant, therefore the checklist question is N/A.	**OK**	**OK**
1.4. Additionality					
1.4.1. Was the additionality of the project activity demonstrated and assessed using the latest version of the "Tool for demonstration and assessment of additionality"?	PDv01 2.5	DR	The additionality of the project activity is demonstrated and assessed using the latest version of the "Tool for the demonstration and assessment of additionality" (version 05.2)	**OK**	**OK**
1.5 Project Emissions					
1.5.1. Are the relevant project emissions indicators have been considered?	PDv01 2.2	DR	The project activity involves the construction of a regulation pond with a surface area of 14.091 m^2. The power density (PD) for this regulation pond is calculated as follows: PD = 92.960.000 W/14.091 m^2 PD = 6 597 W/m^2 PD > 4 W/m^2 In ACM0002 Version 10, under the project emissions section it is stated that "for hydropower plants if the power density of the project activity	**CL8**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			(PD) is greater than 10 W/m^2, $PE_{HP,y}$=0" Please also state in the VCS PD that the PD is greater than 10 W/m^2.		
1.5.2 Are there project emissions arising out of transportation of biomass and/or on site use of fossil fuel and/or CO_2 emissions due to on site electricity consumption and/or Methane emissions from combustion of biomass residues?	PDv01 2.2 4.3	DR	According to the methodology ACM0002 version 10, the only defined emission source for the hydro power plants are the emissions of CH_4 from the reservoir. As the PD is greater than 10 W/m^2, the project emissions are "0" (Please refer to question 1.5.1 for the PD calculation details) It is stated under section 4.3 of the VCS PD version 01 that: *"The project internal consumption is approximately 500 kVA, which can be considered negligible. This consumption will be satisfied from the electricity generation when the plant is in operation or from the grid when the plant is not in operation. Eventually, if there is no electricity available in the grid and the plant is not in operation the internal consumption will be satisfied from a diesel generator, but this would rarely occur. If diesel engines would be used, emissions associated would be calculated according to the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" and considered as project emissions."* Please also include this parameter ($PE_{FF,Y}$ – Project emissions from fossil fuel consumption in year y) in the monitoring plan.	**CAR7**	**OK**
1.5.3 Is the approach for project emissions conservative and transparent?	PDv01 2.2	DR	Yes, the approach for project emissions is conservative and transparent.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
1.5.4 In case of Methane emissions due to combustion of biomass, are the relevant IPCC values are taken in to account with appropriate uncertainty?	PDv01	DR	N/A	OK	OK
1.6. Baseline Emissions					
1.6.1. Are the baseline emissions determined according to the formula $BE_y = EG_y \times EF_y$?	PDv01 4.2	DR	The baseline emissions are determined according to the formula: $BE_y = EG_{PJ,y} * EF_{grid,CM,y}$ As suggested by the methodology.	OK	OK
1.6.2. Were the Emissions Factor for displaced electricity calculated as in ACM0002?	PDv01	DR	As Simple OM method is used calculating the Emissions Factor for displaced electricity is not required. (Only required in Dispatch data analysis OM)	OK	OK
1.6.3 Were the baseline emissions for heat correctly represent the existing situation of heat generation?	PDv01	DR	N/A	OK	OK
1.6.4 Whether 'life time aspects' are taken into account if required so by applicable scenario?	PDv01	DR	No. There is no applicable scenario which requires taking "life time aspects" into account	OK	OK
1.6.5 Does project account for baseline emissions due to natural decay or uncontrolled burning of anthropogenic sources of biomass residues ?	PDv01	DR	N/A	OK	OK
1.6.6 Does project account for quantity of biomass residues used as a result of the project activity ?	PDv01	DR	N/A	OK	OK
1.7. Leakage					
1.7.1. Are the leakage considered?	PDv01 4.3	DR	It is stated under section 4.3 of the VCS PDv01 that: *"No leakage emissions are considered. The main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction and upstream emissions from fossil fuel use (e.g. extraction, processing and*	OK	OK

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			transport). These emissions sources are neglected." This statement is also given in the methodology ACM0002 version 10, and is applicable for the subject project activity.		
1.7.2. Have any credits been claimed for the project on account of reducing the emissions due to power plant construction, fuel handling and land inundation below the level of the baseline scenario?	PDv01	DR	No. No credits have been claimed for the project on account of reducing the emissions due to power plant construction, fuel handling and land inundation below the level of the baseline scenario.	**OK**	**OK**
1.7.3 Has it been demonstrated that biomass availability from the region is abundant enough & that the use of the biomass residues does not result in increased fossil fuel consumption elsewhere ?	PDv01	DR	N/A	**OK**	**OK**
1.7.4 Is this demonstration done through one of the options L1 to L3 as recommended by the methodology?	PDv01	DR	N/A	**OK**	**OK**
1.7.5 When either L2 or L3 is chosen as a option, the radius for procurement of biomass is at least 20 km and not more than 200 km in any case?	PDv01	DR	N/A	**OK**	**OK**
1.7.6 Where Project cannot demonstrate the procurement of biomass in above stated limits, is leakage penalty applied?	PDv01	DR	N/A	**OK**	**OK**
1.8. Emission Reduction					
1.8.1. Were the emissions reductions determined according to the formula ERy = ER_{heaty} + $ER_{electricity}$ y + $BE_{biomassy}$ −PE_y − L_y	PDv01 4.3	DR	Emission reductions were determined according to the following formula: $ER_y = BE_y - PE_y$ Which is also stated in the PD and suggested by the methodology ACM0002 version 10. (equation11)	**OK**	**OK**
1.8.2 Are the emission reduction calculations for displacement of power done as appropriate to chosen scenario?	PDv01	DR	There is no displacement of power in the baseline scenario as the proposed project activity is a Greenfield investment.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
1.8.3. Were all values chosen in a conservative manner and was the choice justified?	PDv01 4.2 EF Calculation Sheet	DR	According to UNFCCC Methodological Tool "Tool to calculate emission factor for an electricity system" for simple OM calculations, the EF can be calculated using: *"Ex ante option: A 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation, without requirement to monitor and recalculate the emissions factor during the crediting period."* For BM calculations, the EF can be calculated using: *"The set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently."* TEIAS has published the statistical data for the year 2008 on their website. Please revise your calculations by using these data.	**CAR8**	**OK**
			In the OM calculations the CO_2 emission values taken from the Turkish statistical yearbook is used for the years 2005 and 2006, however these values can not be used because emissions caused by petroleum refining is also included in these values. Also, the calculation methods are not known, therefore there is a high level of uncertainty. Also these values are not conservative compared to the values that were calculated using the	**CAR9**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			guidance given in the tool. Please correct accordingly.		
			In the PD version 01 under Step 3, OM calculations, it is stated that *"NCVi of different fuels come from TEIAS website"* however the link to the reference source is missing, it is also not given under the "Step 3" tab of the Emission Factor Calculation Excel Sheet, and in Annex 4 where all the data used in the EF calculations are presented. Please clarify.	**CL23**	**OK**
			In the PD version 01, under Step 3 of the EF calculations, it is stated as follows: *"An specific emission factor is calculated for each type of power plant based on the CO2 emission factor, the generation efficiency and the unit conversion factor from TJ to MWh (277,8)."* Please clarify by giving more detailed explanation in the PD explaining where the generation efficiency and unit conversion factor is used in the calculation of the OM EF.	**CL24**	**OK**
			In the OM calculations, under the "Step 2" tab of the Emission Factor Calculation Excel Sheet, the value given on cell F27 does not match with the reference source, please clarify.	**CL25**	**OK**
			In the OM calculations, under the "Step 2" tab of the Emission Factor Calculation Excel Sheet, the references given for the cells D32, D33, E32, E33, F32, F33, G32, G33, H32, H33 are wrong, these	**CL26**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			values are calculated in the excel sheet and not taken from the given reference source. Please clarify.		
			In the BM calculations, please clarify why the calculations are made until the year 2006 whereas in OM calculations the calculations are made until 2007. Please revise your calculations using the most up-to date data available.	**CAR10**	**OK**
			Please give the link to the reference source to the capacity projection data (list of power plants) for all the related years.	**CL27**	**OK**
			In the BM calculations please clarify where the plant efficiency values are taken from, and please justify your selection in the PD.	**CL28**	**OK**
			Under the "Feuil 2" tab of the Emission Factor Calculation excel sheet the value for Imported coal consumption for the year 2004 (cell F8) is wrong, although the value is given correctly under "Step 3" tab, please also correct the value given in Feuil 2 tab.	**CL29**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			Under the "Feuil 2" tab of the Emission Factor Calculation excel sheet the value for Imported coal consumption for NCV and EF values it is stated that: "*IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.2 and 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories*" Are used, however the values that are given are the default values. Please clarify. Please also clarify where the values given in "Feuil 2" tab are used.	**CL30**	**OK**
1.8.4. Whether an estimate of likely project emission reductions for the proposed crediting period is prepared as part of the PDD?	PDv01 1.3	DR	An estimate of likely project emission reductions for the first crediting period is prepared and shown in a table in section 1.3 of the PD version 01.	**OK**	**OK**
1.8.5. Whether the estimate in principle employs the same methodology ACM0006?	PDv01	DR	Project is not biomass residue, therefore checklist question is N/A	**OK**	**OK**
1.8.6. Whether the emission factor is determined ex-post during monitoring?	PDv01 4.2	DR	EF is determined as ex-ante as stated in VCS PD version 01 under section 4.2 Step 2	**OK**	**OK**
1.8.7. If yes whether project participants have used models or other tools to estimate the emission reductions prior to validation?	PDv01	DR	N/A	**OK**	**OK**
2. Monitoring Methodology					
2.1. Applicability					
2.1.1. Does the project activity generate electricity from a renewable source?	PDv01	DR	Yes. The project generates electricity from water.	**OK**	**OK**
2.1.2. Is the power connected to the grid?	PDv01	DR	Yes. The project will be connected to the grid.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
2.1.3. Does the project activity relate to electricity capacity additions from renewable sources?	PDv01	DR	Yes. The project relate to electricity capacity additions from hydro sources.	**OK**	**OK**
2.1.4. Is fuel switch done in the process?	PDv01	DR	No, there is no fuel switch done in the process.	**OK**	**OK**
2.1.5. Can the geographic and system boundaries for the relevant electricity grid be clearly identified?	PDv01	DR	Yes, the geographic and system boundaries of the grid are clearly identified.	**OK**	**OK**
2.1.6. Is the information on the characteristics of the grid available?	PDv01	DR	Yes. The information on the characteristics of the grid is available.	**OK**	**OK**
2.2. Monitoring Methodology					
2.2.1. Does the monitoring plan require monitoring of increased electricity generation from the proposed project activity?	PDv01 3.3	DR	Yes, the monitoring plan requires the monitoring of the increased electricity generation from the proposed project activity.	**OK**	**OK**
2.2.2 Does monitoring takes in to account the lower value between (a) the net quantity of electricity generated in the new power unit that is installed as part of the project activity and (b) the difference between the total net electricity generation from firing the same type(s) of biomass at the project site (EG total,y) and the historical generation of the existing power unit(s), (EG historic, 3yr) based on the three most recent years.	PDv01	DR	The project activity is a Greenfield project, therefore the checklist question is N/A.	**OK**	**OK**
2.2.3. Does the methodology requires monitoring of Data needed to recalculate the operating margin emission factor, if needed, based on the choice of the method to determine the operating margin (OM), consistent with ACM0002?	PDv01 3.3	DR	The only data and parameters that are monitored are $EG_{PJ,y}$ (which is equal to $EG_{facility,y}$ as per ACM0002) and $EF_{grid,CM}$. However for hydropower plants parameters Cap_{PJ} and A_{PJ} also need to be monitored according to ACM0002. Also according to UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" the following parameters needs to be included in the monitoring plan:	**CAR4**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			℘ $FC_{i,y}$ ℘ $NCV_{l,y}$ ℘ $EF_{CO2,I,y}$ ℘ EG_y, $EG_{m,y}$ ℘ $\eta_{m,y}$ ℘ $PE_{FF,y}$ As $EF_{grid,CM}$ is calculated using these parameters, all of these parameters needs to be monitored. Please revise the monitoring plan to include the above mentioned parameters.		
2.2.4. Does the monitoring plan require monitoring of Data needed to recalculate build margin emission factor, if needed, consistent with ACM0002?	PDv01 3.3	DR	The only data and parameters that are monitored are $EG_{PJ,y}$ (which is equal to $EG_{facility,y}$ as per ACM0002) and $EF_{grid,\ CM}$. However for hydropower plants parameters Cap_{PJ} and A_{PJ} also need to be monitored according to ACM0002. Also according to UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" the following parameters needs to be included in the monitoring plan: ℘ $FC_{i,y}$ ℘ $NCV_{l,y}$ ℘ $EF_{CO2,I,y}$ ℘ EG_y, $EG_{m,y}$ ℘ $\eta_{m,y}$ ℘ $PE_{FF,y}$ As $EF_{grid,CM}$ is calculated using these parameters, all of these parameters needs to be monitored.	**CAR4**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			Please revise the monitoring plan to include the above mentioned parameters.		
2.2.5. Does the monitoring plan require monitoring of data needed to calculate fugitive carbon dioxide and methane emissions and carbon dioxide emissions from combustion of fossil fuels required to operate the geothermal power plant ?	PDv01	DR	The proposed project activity is a hydro electric power plant, therefore the checklist question is N/A.	**OK**	**OK**
2.3. Quality Control (QC) and Quality Assurance (QA) Procedures					
2.3.1. Did all measurements use calibrated measurement equipment that is regularly checked for its functioning?	PDv01 3.4	DR	It is stated under section 3.4 of the PD version 01 that: *"The meters will be calibrated according to the procedures and specifications established in the applicable legislation."* The calibration records of all the equipment used in monitoring shall be checked during the verification of the project activity.	**OK**	**OK**
2.3.2 Are frequency of monitoring the parameters defined hourly/daily ?			The monitoring frequency for the parameter $EF_{grid,CM}$ is not given. The monitoring frequency for the parameter $EG_{PJ,y}$ is given as *"hourly measurement and monthly recording"* where it should be "continuous measurement and at least monthly recording" as per ACM0002. Please revise accordingly.	**CAR5**	**OK**

TABLE 3 CHECKLIST BASED ON METHODOLOGICAL TOOL FOR ASSESSMENT OF ADDITIONALITY (VERSION 05.2 - EB 39 REPORT ANNEX 10)

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 2.1 2.5	DR	Under section 2.1 and 2.5 of the PD version 01 it is stated that: *"For the purpose of establishing additionality, Version 05.2 of the "Tool for the demonstration and assessment of additionality" ("Additionality Tool") is also used."*	**OK**	**OK**
b. Has the tool used the following steps to assess additionality 1. Identification of alternatives to the project activity 2. Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible 3. Barriers analysis; and 4. Common practice analysis.	PDv01 2.5	DR	Additionality of the project activity is assessed under section 2.5 of the VCS PD version 01. All of the four steps of the tool have been used to assess the additionality of the project activity.	**OK**	**OK**
c. In Step 1 have all the sub-steps as below followed 1. Sub-step 1a: Define alternatives to the project activity 2. Sub-step 1b: Consistency with mandatory laws and regulations	PDv01 2.5	DR	All the sub-steps of Step 1 have been followed in the VCS PD version 01.	**OK**	**OK**

d.	Have the following alternatives been included while defining alternatives as per sub-step 1a 1. (a) The proposed project activity undertaken without being registered as a CDM project activity 2. (b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology 3. (c) If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	PDv01 2.5	DR	The alternatives that are defined in the VCS PD version 01 are as follows: *"Alternative 1: The proposed project activity undertaken without being registered as a VCS project activity.* *Alternative 2: Construction of a coal-fired power plant with equivalent installed capacity or annual electricity generation.* *Alternative 3: Construction of a new power plant generating the same annual power generation from other renewable sources such as wind power, solar power and biomass.* *Alternative 4: The continuation of the current situation. The equivalent electricity will be provided by the existing power units connected to the national grid."* The credibility of the alternatives of the project activity have been discussed under Sub-Step 1b, however it should be discussed under Sub-step 1a. The outcome of Sub-step 1a shall be the identified realistic and credible alternative scenarios. Please correct accordingly.	**CAR11**	**OK**
e.	Has the project participant included the technologies or practices that provide outputs or services with comparable quality, properties and application areas as the proposed VCS project activity and that have been implemented previously or are currently being introduced in the relevant country/region.	PDv01 2.5	DR	The project participant has included the technologies that provide outputs with comparable quality as the proposed project activity however these alternatives have been eliminated. Please give more detailed justification for the elimination of Alternative 3, by giving objective evidence about the wind availability in the region, as the project owner has also invested in a wind power plant.	**CAR12**	**OK**
f.	Has the outcome of Step 1a: Identified	PDv01	DR	In VCS PD version 01 the outcome of Sub-step 1a	**CAR13**	**OK**

	realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	2.5		is not stated.		
g.	Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.	PDv01 2.5	DR	The compliance of the alternatives with all mandatory applicable legal and regulatory requirements have been assessed under Section 2.5, Sub-Step 1b of the VCS PD version 01. The only credible alternatives are given as alternative 1 and 4 and both of these alternatives are in compliance with the applicable legal and regulatory requirements.	**OK**	**OK**
h.	If an alternative does not comply with all mandatory applicable legislation and regulations, has it been shown that, based on an examination of current practice in the country or region in which the law or regulation applies, those applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country.	PDv01 2.5	DR	N/A	**OK**	**OK**
i.	Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations done correctly? Please state the outcome.	PDv01 2.5	DR	The outcome of Sub-step 1b is not clearly mentioned.	**CAR14**	**OK**
j.	Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3.)	PDv01 2.5	DR	The PP has selected both step 2 and step 3.	**OK**	**OK**

k. In step 2 have all the sub-steps as below followed? 1. Sub-step 2a: Determine appropriate analysis method 2. Sub-step 2b: Option I. Apply simple cost analysis 3. Sub-step 2b: Option II. Apply investment comparison analysis 4. Sub-step 2b: Option III. Apply benchmark analysis 5. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III): 6. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III):	PDv01 2.5	DR	Under step 2 the following sub-steps were followed in the PD version 01: 1. Sub-step 2a: Determine appropriate analysis method 2. Sub-step 2b: Option III apply benchmark analysis 3. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III) 4. Sub-step 2d: Sensitivity analysis	**OK**	**OK**
l. In sub-step 2a has the determination of appropraite method of analysis done as per the guidance as below 1. Simple cost analysis if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income (Option I). 2. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification	PDv01 2.5	DR	Under sub-step 2a the appropriate method of analysis is determined as the "Benchmark Analysis (Option III)" The justification of this choice is given as follows: *"The proposed Project generates financial and economic benefits through the sales of electricity other than Voluntary Emissions Reduction (VCS-VER) related income. Therefore the simple cost analysis (Option I) cannot be taken.* *Investment comparison analysis (Option II) is only applicable to projects where alternatives should be similar investment projects. The alternative baseline scenario of the proposed project is the continuation of the current situation, where the equivalent electricity will be provided by the existing power units connected to the national grid. Among the investment comparison analysis (Option II) and the benchmark analysis (Option*	**OK**	**OK**

			III), the benchmark analysis (Option III) is preferred."		
m. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis 1. Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	PDv01 2.5	DR	Option III Benchmark analysis is selected therefore the checklist question is N/A.	**OK**	**OK**
n. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis 1. Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making context. Please specify	PDv01 2.5	DR	Option III Benchmark analysis is selected therefore the checklist question is N/A.	**OK**	**OK**
o. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis 1. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context. 2. When applying Option II or Option III, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the project activity can be implemented by the project participant, the specific financial/economic situation of the	PDv01 2.5	DR	1. Under sub-step 2b, please identify the financial indicator. 2. The financial / economic analysis has not been based on to the subjective profitability expectation or risk profile of a particular project developer.	**CL31** **OK**	**OK** **OK**

company undertaking the project activity can be considered. 3. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect N/A private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data; (b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views and private equity investors/funds' required return on comparable projects; (c) A company internal benchmark (weighted average capital cost of the company), only in the particular case referred to above in 2. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same benchmark; (d) Government/official approved benchmark where such benchmarks are used for investment decisions; (e) Any other indicators, if the project participants can demonstrate that the above Options are not applicable and their indicator is appropriately justified. Please specify benchmark and justify.			3. In PD version 01, the benchmark is derived from Ziraat Bank's Eurobond rates (risk free rate) and a risk premium and beta value which is used to determine the level of risk is added to this value. Please clarify the following points regarding the selection of the baseline:		
			When the Eurobond rate is checked from the link given in the PD version 01, the interest rate of the given Eurobond is 6.75%. Also the duration of this Eurobond is 30 years whereas the IRR analysis is made for a 49 year period, therefore these two values can not be compared. Please select a more realistic benchmark.	**CL32**	**OK**
			According to item 14 of guidance section of the UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality" *"The risk premiums applied in the determination of required returns on equity shall reflect the risk profile of the project activity being assessed, established according to national / international accounting principles."* However the risk premium which is used for the project activity is a country risk premium and does not reflect the risk profile of the project activity being assessed. Please select and justify a risk premium which reflects the risk profile of hydro power projects in Turkey.	**CL33**	**OK**
			Please clarify the value β, how this value is selected.	**CL34**	**OK**
			Please also explain where the formula	**CL35**	**OK**

			Ce=Rf+β(Rm-Rf) is derived from by giving objective evidences and references.		
			The benchmark calculations has been taken from the feasibility report which is dated May 2005 as the rest of the calculations, however in the feasibility study the details and the references of these calculations are not given in detail. Therefore please select a benchmark which is applicable to the proposed project activity.	**CAR15**	**OK**
p. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III): 1. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, as appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country. 2. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	PDv01 2.5	DR	For the calculation of the financial indicators the values are taken from the feasibility report. The following points need further clarification and correction in the IRR calculations: The capacity of the proposed project activity is taken as 90 MW, however with the revisions made the current capacity of the power plant is 92.96 MW. Please correct.	**CAR16**	**OK**
			The utilization rate is taken as 48,60% as given in the feasibility study, please justify your choice by giving objective references from the industry and/or scientific studies.	**CL36**	**OK**
			The average yearly generation is taken as 383 GWh in both the feasibility report and the IRR calculations, however in the generation license, this value is given as 330 GWh. Under section 1.9 of the VCS PD version 01, it is stated that the project will generate 335,03 GWh annually. Please clarify why there is a difference between these values and please clarify which will be the real figure. Please also show the calculation details for the average annual generation figure in the PD.	**CL37**	**OK**

3. Justify and/or cite assumptions. 4. In calculating the financial/economic indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions 5. Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated. 6. Present in the CDM-PDD a clear comparison of the financial indicator for the proposed CDM activity Please specify details for above					
			Average unit price per kWh is taken as 0,06$ and the reason behind this selection is given under footnote #11 (decision no 412 dated 30 December 2005 by EMRA) however the electricity sales price can not be taken as 0,06 USD as the minimum electricity sales price for renewable energy investments is set to 0,05 € with the energy efficiency law. Please correct accordingly.	**CAR17**	**OK**
			From the feasibility study it is seen that the assumptions used for the calculations are made by using 2005 DSI (State Hydraulic Works) unit prices. Please send objective evidence from DSI showing that these unit prices were valid at the time of calculating the assumptions.	**CL38**	**OK**
			Under section 7 of the PD version 01 that the date of contract signature for the electrical works is given as December 4th 2006. Please send a copy of this contract as a proof of the investment decision date.	**CL39**	**OK**
			The license fee is estimated to be 20.000.000,- USD please send an objective evidence of the realized license fee as it makes up 14% of the total investment cost, please use the realized license fee in the financial analysis.	**CL40**	**OK**
			Please send a copy of the loan agreement approved by the bank. Please use the actual loan conditions in the calculations and do not use the estimated conditions taken from the feasibility report (including the debt ratio)	**CAR18**	**OK**
			In the IRR calculation sheet for the year 2009 it is assumed that the plant will work at 80% of its	**CAR19**	**OK**

			capacity and will generate 299 GWh. However the plant still has not started generation, therefore please correct the calculations accordingly.		
			Please send a copy of the electromechanical equipment agreement and use the actual value in the IRR calculations.	**CAR20**	**OK**
			Please give detailed explanation about the Operational Expenses, how many people are going to work? What will be their positions? What are their projected salaries? What is the projected cost for their transportation, meals? Please give objective evidences for these expenses and revise the calculations using these expenses.	**CAR21**	**OK**
			The insurance value is taken as 0,05% of total assets. Please send the insurance policy and revise the financial model using the data from the insurance policy.	**CAR22**	**OK**
			For depreciation times of license (15 years), construction (40 years) and electro mechanics (15 years), please give reference from Tax Procedural Law Communiques (Vergi Usul Kanunu Tebliğleri) as an objective evidence.	**CL41**	**OK**
			Please explain why transmission loss is taken as 2.5% by giving objective evidences.	**CL42**	**OK**
			Please send detailed information about the short term borrowings including objective evidences	**CL43**	**OK**

			Although it is stated that the loan has 10 years payback period, please clarify why interest expenses are paid until 2055?	**CL44**	**OK**
			On raw 133 of the financial analysis without carbon sheet, for long term loan, the principal loan amount (96,075) is not the same with the sum of the repayments (82,350). Please clarify.	**CL45**	**OK**
			Please send detailed information about the maintenance schedules, please give the frequency of maintenance and expected costs by giving objective evidences. Is there a need for higher cost maintenance for 10^{th}, 20^{th} ....years, or will the same type of maintenance be done for every year? Please revise the financial model using the actual maintenance schedules and expenses projected by the manufacturer of the equipment.	**CAR23**	**OK**
q. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III): 1. Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	PDv01 2.5	DR	A sensitivity analysis is included in the investment analysis for the following parameters: ℘ Investment amount ℘ Electricity sales price ℘ Operational Expenses As a result of the sensitivity analysis it is seen that even with the variations, without the carbon revenues the project activity can not pass the benchmark expectation. The most sensitive parameter here is the electricity sales price. The price was assumed as 6 $ cents at the time of investment decision.	**OK**	**OK**

			However after the investment decision is made renewable energy law came into effect, and this law has set the minimum electricity sales price to 5€ cents. With this law, the electricity sales price is capped at 5,5€ cents. When the IRR analysis was run using these prices, it was seen by the validator that the proposed project activity still can not pass the benchmark expectation without the carbon revenues.		
r. Has the outcome of Step 2 clearly mentioned with justification?	PDv01 2.5	DR	Outcome of step 2 is given as follows: *"Hence, the above figures have demonstrated that the project activity is not the most economically or financially attractive alternative."*	**OK**	**OK**
s. In step 3: Barrier analysis have all the sub-steps as below followed? 1. Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity 2. Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity):	PDv01 2.5	DR	Barrier analysis has both sub-step 3a and sub-step 3b.	**OK**	**OK**
t. Has the below guideline followed for Sub-step 3a: Identify barriers that would prevent the implementation of the proposed VCS project 1. (a) 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 capital is available from domestic or international capital markets due to real or perceived risks associated with	PDv01 2.5	DR	Under sub-step 3a the barriers have been categorized into 4 categories as follows: a. Investment/financial barriers, b. Technological barrier c. Legal and bureaucratic barriers and d. Climatic conditions According to UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality" the barriers may include: a. Investment barriers	**CAR24**	**OK**

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. 2. (b) 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. 3. (c) Barriers due to prevailing practice: The project activity is the "first of its kind". 4. (d) Other barriers, preferably specified in the underlying methodology as examples.			b. Technological Barriers c. Barriers due to prevailing practice d. Other barriers Please revise the categories accordingly. In PD version 01 the identified barriers are as follows: *(a) Investment/financial barriers:* - Country risk - National Grid System Usage Fee - Price Cap for Renewable Electricity - Long payback period *(b) Technological barriers* - The equipment's market availability - Lack of infrastructure : Transmission line - Lack of local practice and experience to construct such a big installed capacity run-off-river hydro power plant *(c) Legal and bureaucratic barriers* *(d) Climatic Conditions*		
			The following points about the identified barriers needs further clarification: <u>Country Risk:</u> In this barrier it is stated that Turkey has a high risk profile both financially and security-wise. And it is stated that *"investors are not particularly appealed to investment projects in Turkey especially when long-term financing is required."*	**CL46**	**OK**

			However the investor is a Turkish company and they have many similar investments in the energy field. This is apparently not a specific barrier for this project activity. Please clarify. The footnote #13 which is given as a reference source for the statements given in the above barrier can not be reached. Please check the references once again and give publicly reachable references.	**CL47**	**OK**
			National Grid System Usage Fee: In this barrier it is stated that the system usage fee is based on installed capacity of the power plant and HEPPs suffer from this regulation because they work on 40% capacity on average whereas thermal power plants work on up to 80% of their capacity. Please provide objective evidence to prove these statements.	**CL48**	**OK**
			Price Cap for Renewable Electricity: In this barrier it is stated that the renewable energy law gives a minimum purchase guarantee of 5 €¢ and caps the purchase price at 5.5 €¢. The banks consider the minimum purchase guarantee for providing the loans, therefore the project had extreme difficulties to obtain non-recourse financing from banks due to low guaranteed electricity price compared to all risks attached to the project. Please give detailed information about the difficulties the project owner has faced during the financing stage, by giving objective evidences. Please also give objective evidences to prove the statements under this barrier.	**CL49**	**OK**

			Long payback period: Under this barrier it is stated as follows: *"Access to local finance is low and project developers have to turn to the international market to fund their projects. The first problem encountered by project developers relates to the IRR that investors can accept for hydropower projects in Turkey – and even more within a context of financial crisis, credit crunch and global market collapse.* *Hydropower plants require a high level of financing at the initial stage and have long payback periods. The "Law on Utilization of Renewable Energy Sources for the Purpose of Generating Electrical Energy", provides guaranteed electricity price only for 10 years, whereas the repayment period of the loan is 12 years. Thus there is a strong risk exposure for a period of 2 years that is not yet covered.* *Furthermore, the government has incentive plans for other power generation plants such as coal fired, liquid fuel fired, and nuclear power plants. For instance, for nuclear and coal fired power plants the government offers 15 years of purchase guarantee, and for liquid fuel fired power plants a tax exemption is considered, making these kinds of investments more attractive for investors."* Please provide objective evidence and/or literature reference to prove the above mentioned statements.	**CL50**	**OK**
			The equipment's market availability: Under this barrier it is expained that the equipment is	**CAR25**	**OK**

			purchased from Alstom which is a French company. It is also stated that there is a shortage for hydro electrical equipments in global markets. Therefore equipments must be ordered two or more years in advance. Hence, the necessity of the equipment importation increases the investment costs. Furthermore, these equipments need specific services and maintenance, which thus represents an additional operational cost. Please provide objective evidence proving these statements, and please also explain in detail why this is a barrier for the proposed project activity, as this may be the case for all kinds of projects which depend on technologies that are not currently manufactured in the country.		
			Lack of infrastructure : Transmission line: In this barrier it is stated that the proposed project activity requires the construction of 21 km of new transmission line and this additional cost leads to higher financial risks. In the feasibility study the projected cost for the transmission line is USD 2.000.000,- this amount is only 1,46% of the total investment amount, which is USD 137.249.844,- therefore it is not a very big amount in the whole investment cost. On top of all, this amount will be offset against operational fees during the operational life of the project. Please explain in detail why this should be considered as a barrier specifically for this type of project activity.	**CAR26**	**OK**
			Lack of local practice and experience to construct such a big installed capacity run-off-river hydro power plant:	**CAR27**	**OK**

			In this barrier it is stated that: *"The project activity is the biggest size run-off-river project ever realised in Turkey considering its installed capacity. Therefore, there is a lack of local knowledge and experience for both designing of civil works and construction. This means that the installation of such big installed capacity equipments within a run-of-river hydro project will bring experience to the Turkish hydropower sector."* Please give objective evidence to prove the above mentioned statement.		
			Legal and Bureaucratic Barriers: In this barrier the legal structure in Turkey is explained and it is stated that the project developers must go through long waiting processes in order to obtain the legal permits. A time schedule showing the steps project owners had to go through has been given in a table form. Please provide scanned copies of the letters sent to and from EMRA and DSİ, that are listed in the table. Please provide scanned copies of the references that are given in the footnotes 16,17,18,19. The information given in the reference website in footnote #20 does not relate to the statement given under this reference please clarify. Please cross-check the reference given in footnote #23 with the statement related to that footnote. According to the reference given in this footnote the share of private hydro in total hydro capacity	**CL51**	**OK**

			of Turkey is a different percentage.		
			Climatic Conditions: In this barrier it is stated as follows: *"climate conditions, such as long and heavy rains and water floods at the project site may affect the construction works, causing interruptions and delays in the project's schedule, which may arise in additional expenses."* This is not a risk specific for this type of project activity. This is a risk all project activities can face, therefore this can not be accepted as a barrier.	**CAR28**	**OK**
			According to UNFCCC Methodological Tool "Tool for the assessment and demonstration of additionality" the barriers shall be realistic and credible and shall prevent the implementation of the proposed project activity from being carried out if the project activity was not registered as a CDM activity. Please re-assess the barriers given in the VCS PD as none of these barriers are strongly proven enough to have prevented the implementation of this project activity.	**CAR29**	**OK**
u. Has the outcome from Step 3a clearly mentioned in PDD?		PDv01 2.5	DR	Outcome of Sub-step 3a is not clearly mentioned.	**CAR30**	**OK**
v. Has the below guideline followed for Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity): 1. If the identified barriers also affect other alternatives, explain how they are affected less strongly than they affect the proposed CDM project activity. In other words, demonstrate that the identified barriers do not prevent the implementation of at least one of the alternatives. Any alternative that would		PDv01 2.5	DR	It is stated under Sub-step 3b as follows: *"Alternative 4: The continuation of the current situation. The equivalent electricity will be provided by the existing power units connected to the Turkish grid. The identified barriers would not prevent the implementation of the continuation of the current situation.* *It is clear from the above that in the absence of the project, the only option available as an alternative to the Project is the non-implementation and the continuation of the current situation."* The above statement is reasonable as it is evident	**OK**	**OK**

	be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration. 2. provide transparent and documented evidence, and offer conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of the identified barriers and whether alternatives are prevented by these barriers. 3. The type of evidence to be provided should include at least one of the following: (a) Relevant legislation, regulatory information or industry norms; (b) Relevant (sectoral) studies or surveys (e.g. market surveys, technology studies, etc) undertaken by universities, research institutions, industry associations, companies, bilateral/multilateral institutions, etc; (c) Relevant statistical data from national or international statistics; (d) Documentation of relevant market data (e.g. market prices, tariffs, rules); (e) Written documentation of independent expert judgments from industry, educational institutions (e.g. universities, technical schools, training centres), industry associations and others. Please specify.			that when there is no project, there would be no barriers preventing the implementation of the project, therefore this statement is accepted by the validation team.		
	w. Has the outcome from Step 3 clearly	PDv01	DR	Outcome of step 3 is not clearly mentioned.	**CAR31**	**OK**

	mentioned in PDD?	2.5				
x.	In step 4: Common practice analysis have all the sub-steps as below followed? 1. Sub-step 4a: Analyze other activities similar to the proposed project activity 2. Sub-step 4b: Discuss any similar Options that are occurring	PDv01 2.5	DR	All of the sub-steps of step 4 are followed.	**OK**	**OK**
y.	Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity 1. Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other VER 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.	PDv01 2.5	DR	Under sub-step 4a please give the reference source for Table 7, and please also include the HEPPs that were put into operation in the years 2007 and 2008. Please give a list of HEPPs that are currently operational and under construction at the eastern black sea region and compare the proposed project activity with those projects. Please give detailed information describing what aspects of the proposed project activity differs it from the project activities that are present in the region.	**CL52**	**OK**
z.	Has the below guideline followed for Sub-step 4b: Discuss any similar Options that are occurring: 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	PDv01 2.5	DR	A list of HEPPs that are put into operation between 2003-2006 are given in the VCS PD under sub-step 4a. However as the project activity is the first of its kind, there are no similar project activity in the region in terms of capacity and power house design.	**OK**	**OK**

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.					
æ. Has the outcome from Step 4 clearly mentioned in PDD?	PDv01 2.5	DR	In PD version 01, the outcome of step 4 is mentioned as follows: *"As shown in Step 2 and Step 3 above, the project is unlikely to move forward without the additional financial support of the VCS-VER."* This outcome will be evaluated when all the CARs and CLs regarding all of the steps of additionality tool have been clarified.		**OK**
ø. Has it been proved that the project is additional?			The projects additionality will be decided after all the CARs and CLs in this protocol have been clarified.		**OK**

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	DR	Yes the project has EIA positive document given by the Turkish Ministry of Environment and Forestry. According to Turkish Law the proposed project activity first needs to do an EIA (Environmental Impact Assessment) and submit this report to the Ministry of Environment and Forestry. After this report has been reviewed, the Ministry either gives an EIA positive or EIA negative report. In the case of the proposed project activity the EIA positive report was taken on 24.07.2006. However there was some objection from the public and there has been a court case regarding the minimum water flow rate that should be left to the river bed. During the court case several experts from different universities have been consulted by the court. The reports of these experts list of which is given below below, were submitted to and reviewed by the validation team: - Ondokuz Mayıs University Report prepared by Prof. Dr. Recep Bircan and Prof. Dr. Nazmi Polat with the cover letter no. B.30.2.ODM.0.70.00.00/ 184-04012 dated 04.06.2007 - The report prepared by Assoc. Prof. Davut Turan (Rize University) dated 18.07.2008 which was sent directly to the court. - The report dated 31.07.2007, prepared by Prof. Dr. Izzet Ozturk, Prof. Dr. Ismail Toroz, Dr. Suleyman Ovez from Environmental Engineering	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV *	COMMENTS	Draft Concl	Final Concl
			Department of Istanbul Technical University. According to these expert opinions the court has decided that the minimum amount of water flow that shall be left to the river bed shall be 2800 liters/sec and the EIA positive decision of the Turkish Ministry of Environment and Forestry dated 24.07.2006 lost its validity. After this decision of the court the EIA report was revised on February 2009 and submitted to the Turkish Ministry of Environment and Forestry. The revised EIA report was also submitted to and reviewed by the validation team. In the revised EIA report the minimum amount of water flow rate to be left to the river bed is revised as 2800 liters/sec. The Turkish Ministry of Environment and Forestry has reviewed this EIA Report and gave and EIA Positive Document No: 1657 dated 20.02.2009. This document was also submitted to and reviewed by the validation team.		
1.2. Are the conditions of the environmental license being met?	2	DR	The conditions of the environmental licence are being met. The Rize County Environment and Forestry Directorate is making spot visits to the project site to see if the project is in line with the regulations. Also a flow rate measurement device is being installed which will remotely inform the flow rates of the water released to the river bed. The official report of the most recent audit made to the project site dated 02.11.2009 was also submitted to and reviewed by the validation team.	**OK**	**OK**
1.3 Are the conditions of the Designated National Authority being met?	2	DR	Turkey does not have a DNA.	-	-

TABLE 5 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
CAR1- Please present the English translation of the letter given in Annex 1. Please make sure the official no. of the letter is also included in the scanned copy.	Table 1, 1.c	Please find the attachment.#1 **Response to Review 1:** Please refer to Annex 1 of the PDD Version 3 where the English translation of the letter has been included. **Response to Review 2:** According to the interviews made with the validation team, relevant documents has been deleted from the PD Version4	**Review 1:** The English translation of the document was sent to the validation team. Please also include the English translation in the PD. Please make sure that all the documents presented in the PD (including figures, tables and pictures) are in English or have English translations attached to the PD. The corrective action request is still open. **Review 2:** In the PD version 03, there are still some documents in Annex 6 which does not have the English translations. The corrective action request is still open. **Review 3:** In the PD version 04, all the documents are either in English or have English translations attached to the original document. The corrective action request is closed.
CAR2- Information relevant for the eligibility of the project and quantification of emission	Table 1	During the site visit we had presented social aids for that region and we also	**Review 1:**

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
reductions or removal enhancements, including legislative, technical, economic, sectoral, social, environmental, geographic, site-specific and temporal information is not provided. Please provide the projects social, economic, environmental, site-specific contributions which are given under section 1.4 of the VCS PD version 01 under this section. During the site visit it was seen that apart from the contributions listed under section 1.4 of the VCS PD version 01, the project owner has made many more contributions to the project area. Please also list these contributions under this section.	2.d.s	explained our technical solution which is best fit for this geographic area. However we had presented these documents during the site visit and we had sent other related documents (the employers list who is hired by Akım Enerji from that region) by e-mail on 5th of November 2009. In addition to these social aids Akım Enerji built a bridge for transition to Soguksu Village. This bridge was built from Akım Enerji because one of the village folk's (Mr. Dursun Ali ASLAN) son fell down into this river while passing the river and he lost his life there. Picture of bridge is attached. Please find Attachment #2 **Response to Review 1:** As we explained during the site visit that Akım Enerji made social aid financial aids in that area, which we have presented as document to validation team, Please refer to Soğuksu Bridge picture in PD version03 page# 81 As Akım Enerji, company policy we do not find ethical to announce this social and financial aids, therefore this is	Under section 1.16 of the PD it is stated that *"There is not any relevant information to supplement."* Please include a summary of all of the contributions that were made to the region. Although these contributions were seen during the site visit and evidences of these contributions were submitted to the validation team, these contributions shall also be listed in the PD. The corrective action request is still open. **Review 2:** During the site visit it was seen that the project has many positive contributions to the surrounding villages. The records of these contributions were submitted to the validation team. The company treats this information as commercially sensitive and this was also indicated under section 1.17 of the PD version 03, The corrective action request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		commercially sensitive information that needs to be excluded from the public version of the VCS PD that will be displayed on the VCS Project Database.	
CAR3- Please define the compliance of the project activity to the applicability conditions for both the UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality" Version 05.2 and UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" Version 01.1.	Table 1 2.c.x	Section 2.2 has been modified in the Version 2 of the PDD. The following paragraph has been added: "The project activity also complies with the applicability conditions of the "Tool to calculate the emission factor for an electricity system" (Version 01.1) as it displaces electricity generated by power plants in the Turkish electricity system. Moreover, it complies with the applicability criteria of the "Tool for the demonstration and assessment of additionality" (Version 05.2), as according to paragraph 6, this tool provides a general framework for demonstrating and assessing additionality and is applicable to a wide range of project types".	In PD version 2 the applicability conditions are revised. The corrective action request is closed.
CAR4- The only data and parameters that are monitored are $EG_{PJ,y}$ (which is equal to $EG_{facility,y}$ as per ACM0002) and $EF_{grid,\ CM}$. However for hydropower plants parameters Cap_{PJ} and A_{PJ} also need to be monitored	Table 1 2.c.gg Table 2 2.2.3	Please refer to Version 2 of the PDD where the monitoring plan has been revised and the mentioned parameters have been included. Please find in Section 3.3 page 33 in	The relevant parameters have been added to PD version 02. The corrective action request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
according to ACM0002. Also according to UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" the following parameters needs to be included in the monitoring plan: ℘ $FC_{i,y}$ ℘ $NCV_{i,y}$ ℘ $EF_{CO2,I,y}$ ℘ EG_y, $EG_{m,y}$ ℘ $\eta_{m,y}$ ℘ $PE_{FF,y}$ As $EF_{grid,CM}$ is calculated using these parameters, all of these parameters needs to be monitored. Please revise the monitoring plan to include the above mentioned parameters.	2.2.4	PD Version 2.	
CAR5- The monitoring frequency for the parameter $EF_{grid,CM}$ is not given. The monitoring frequency for the parameter $EG_{PJ,y}$ is given as *"hourly measurement and monthly recording"* where it should be "continuous measurement and at least monthly recording" as per ACM0002. Please revise accordingly.	Table 1 2.c.gg.v Table 2 2.3.2	Please refer to Section 3.3 where the monitoring frequency for the parameter $EG_{PJ,y}$ has been revised and the monitoring frequency for the $EF_{grid,CM}$ has been added. Please find in page 33 of the PD Version 2. **Response to Review 1:** Please refer to the PDD Version 3, page 36, where the monitoring frequency for A_{PJ} is now given	**Review 1:** The monitoring frequencies of all the parameters that are monitored are revised. However monitoring frequency for A_{PJ} is not given. The corrective action request is still open. **Review 2:** The monitoring period for the parameter is defined in PD version 03.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
			The corrective action request is closed.
CAR6- A chronological plan for the date of initiating project activities is given under section 7 of the VCS PD version 01. Please also include in this chronological plan the following: ℘ 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	Table 1 2.c.oo	There has not been any termination, milestones events are indicated with the dates into the project timeline. Also frequency of monitoring and reporting and project period included in Section 7 "Schedule" . Please find page #50 of the PD version 02	In PD version 02 the chronological plan is revised. The corrective action request is closed.
CAR7- It is stated under section 4.3 of the VCS PD version 01 that: *"The project internal consumption is approximately 500 kVA, which can be considered negligible. This consumption will be satisfied from the electricity generation when the plant is in operation or from the grid when the plant is not in operation. Eventually, if there is no electricity available in the grid and the plant is not in operation the internal consumption will be satisfied from a diesel generator, but this would rarely occur. If diesel engines would be used, emissions associated would be calculated according to the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion" and considered as project emissions."* Please also include this parameter ($PE_{FF,Y}$ – Project emissions from fossil fuel consumption	Table 2 1.5.2	Please refer to the Section 3.3 of the PDD Version 2, where $PE_{FF,Y}$ (Project emissions from fossil fuel consumption in year y) has been included in the monitoring plan. Please find page #33 of the PD version 02	The monitoring plan is revised in PD version 02. The corrective action request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
in year y) in the monitoring plan.			
CAR8- According to UNFCCC Methodological Tool "Tool to calculate emission factor for an electricity system" for simple OM calculations, the EF can be calculated using: *"Ex ante option: A 3-year generation-weighted average, based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation, without requirement to monitor and recalculate the emissions factor during the crediting period."* For BM calculations, the EF can be calculated using: *"The set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently."* TEIAS has published the statistical data for the year 2008 on their website. Please revise your calculations by using these data.	Table 2 1.8.3	Please refer to Emission Factor Calculation excel sheet where the EF calculation has been updated using the latest statistical data published by TEIAS.	The baseline emission factor calculations have been revised with the latest data. The corrective action request is closed.
CAR9- In the OM calculations the CO_2 emission values taken from the Turkish statistical yearbook is used for the years 2005 and 2006, however these values can not be used because emissions caused by petroleum refining is also included in these values. Also, the calculation methods are not known, therefore there is a	Table 2 1.8.3	Please refer to the Emisson Factor Calculation excel sheet where the EF calculation has been updated and the CO_2 emission values calculated are now used in the OM calculations. Please also note that the emission	**Review 1:** In the VCS PD version 02, it is stated that for the EF of fuells "IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
high level of uncertainty. Also these values are not conservative compared to the values that were calculated using the guidance given in the tool. Please correct accordingly.		factor and the emission reductions calculations have been changed accordingly in the PDD Version 2. **Response to Review 1:** The baseline calculation is revised by using the values given under Table 1.4 of the 2006 IPCC Guideline for National Grenhouse Gas Inventories. Also, the statement about Turkey's National Inventory is excluded from the VCS PD, as all the calculations are made based on the IPCC values. Please see revised baseline calculation excel sheet and the VCS PD Version 03.	Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories." Is used however in the excel sheet the C emission values taken from the IPCC EFDB is used by multiplying by 3,66667. It is also stated in the excel sheet that these values are exactly the same as the values given in the Turkish national inventory. Please use the values given in Table 1.4 to comply with both the methodology and your statement in the PD. The corrective action request is still open. **Review 2:** In the PD version 03, it is stated as follows: *"In order to calculate the emission amounts from each fuel types, emission factors from IPCC website were used. Three sets of emission factors were identified as minimum, medium and maximum values. To be conservative side, the minimum values are used in the OM calculations."* These values are the same as the min. values given in the 2006 IPCC Guidelines for NGGI. The corrective action request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
CAR10- In the BM calculations, please clarify why the calculations are made until the year 2006 whereas in OM calculations the calculations are made until 2007. Please revise your calculations using the most up-to date data available.	Table 2 1.8.3	Please refer the Emission Factor Calculation excel sheet the EF calculation has been updated.	In PD version 02 the BM calculations are revised with the most recent data. The corrective action request is closed.
CAR11- The credibility of the alternatives of the project activity have been discussed under Sub-Step 1b, however it should be discussed under Sub-step 1a. The outcome of Sub-step 1a shall be the identified realistic and credible alternative scenarios. Please correct accordingly.	Table 3 1.d	Please refer to PDD Version 2 where the credibility of the alternatives is now discussed under Sub-step 1a. **Response to Review 1:** Please refer to the PDD Version 3, where the following sentence has been erased: "according to Step 2, the proposed Project activity is economically or financially less attractive without the revenue from the sale of the VCS-VERs." And therefore Alternative 1 has not been eliminated at this stage.	**Review 1:** In PD version 02, Alternative 1 which is "The proposed project activity undertaken without being registered as a VCS project activity" is defined as a not credible alternative. The reason is given as follows: *"according to Step 2, the proposed Project activity is economically or financially less attractive without the revenue from the sale of the VCS-VERs."* This alternative can not be eliminated at this stage as under step 2 the IRR of the project activity without VER revenues is calculated and used as a comparison. The corrective action request is still open. **Review 2:** Alternative 2 is not eliminated in the PD version 03.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
			The corrective action request is closed.
CAR12- Please give more detailed justification for the elimination of Alternative 3, by giving objective evidence about the wind availability in the region, as the project owner has also invested in a wind power plant.	Table 3 1.e	Please refer to the PDD Version 2 where the following sentence has been deleted: "In addition, due to its topography, the project area is not a proper location for a wind farm." Alternative 3 has been eliminated since all the wind power generation projects in Turkey are applying for a VER support, which shows that those projects are not themselves feasible and need VERs to overcome the investment barriers. Related to publication entitled "The wind Atlas of Turkey", (please find the attachment # 3 and also wind map indicated to PD document page 20) Cevizlik HEPP is not located in area where wind speed has been recorded. The situation of site has the lowest wind speed. The wind power plant is in Holding's other firm, and when we started to construction of this project, there has not been any investigation yet for wind project. **Response to Review 1:**	**Review 1:** In PD version 02, the wind map of Turkey is attached to the PD. It is clear from this map that there is no wind potential in the vicinity of the project activity. However it is also stated that all the wind power projects in Turkey are applying for VER support. Please give objective evidence to support this statement. The corrective action request is still open. **Review 2:** The sentence has been revised in the PD version 03. It is also known by the validation team that most of the wind power plants are applying for VER support in the Turkey. The corrective action request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		Please refer to the PDD Version 3, where the sentence has been modified to the following: "In addition, power plants using wind energy face unattractive financial index like the proposed hydropower project; *most of all the new* wind power generation projects in Turkey are applying for a VER support". Objective evidence of this statement can be found when entering, for instance, to the GS project registry, where the recent listed projects in Turkey are wind projects.	
CAR13- In VCS PD version 01 the outcome of Sub-step 1a is not stated.	Table 3 1.f	Please refer to the PDD Version 2, where the outcome of Sub-step 1a is now stated. Please find page# 18 of the PD Version 2	In the PD version 2 outcome of Sub-step 1a is stated. The corrective action request is closed.
CAR14- The outcome of Sub-step 1b is not clearly mentioned.	Table 3 1.i	Please refer to the PDD Version 2, where the outcome of Sub-step 1b is now stated. Please find page# 19 of the PD Version 2	In PD version 02 outcome of Sub-step 1b is given. The corrective action request is closed.
CAR15- The benchmark calculations has been taken from the feasibility report which is dated May 2005 as the rest of the calculations, however in the feasibility study the details and the references of these calculations are not given in detail. Therefore please select a	Table 3 1.o	Mutually agreed about this item. **Response to Review 1:** According to the interviews made with the validation team, it has been concluded that the feasibility report	**Review 1:** Please include your justifications in the validation protocol. The corrective action request is still open.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
benchmark which is applicable to the proposed project activity.		which was submitted to the validation team is the basis for the benchmark calculations, therefore this assumption can also be reflected to the calculations.	**Review 2:** The benchmark selection has been explained in detail in the PD version 03 and found ok. The corrective action request is closed.
CAR16- The capacity of the proposed project activity is taken as 90 MW, however with the revisions made the current capacity of the power plant is 92.96 MW. Please correct.	Table 3 1.p	Project activity is taken 90MW because this was the board decision regard to presented feasibility report.	It was seen from the calculations that although the capacity of the project activity is taken as 90 MW, the annual electricity production is taken as 383 GWh which is significantly higher than the currently estimated electricity production. The current estimated annual production is given as 330 GWh in the license. The corrective action request is closed.
CAR17- Average unit price per kWh is taken as 0,06$ and the reason behind this selection is given under footnote #11 (decision no 412 dated 30 December 2005 by EMRA) however the electricity sales price can not be taken as 0,06 USD as the minimum electricity sales price for renewable energy investments is set to 0,05 € with the energy efficiency law. Please correct accordingly.	Table 3 1.p	The sales price when the investment decision was given **Response to Review 1:** Every year EMRA declares next year's electricity selling price end of the year with TETAS The decision number 412 which was announced by Decision Committee for 2005. This table is about wholesale electricity price for each electricity distribution companies. Cevizlik HEPP project is in Rize	**Review 1:** The decision No.412 which is given as a reference to the electricity price gives many different sales prices for different regions varying from 8,17 Ykr/kWh to 10,41 Ykr/kWh. It is not clear which region is used as a reference. Taking the lowest price is not a conservative approach. Even when the lowest value is taken, using the USD/TL exchange rate which is defined as 1,35 under section 8 of the Feasibility Study (which is used as

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		Province and Rize was involved in TEDAS. As it is seen that TEDAS 's active electricity selling price decision was 8,27kr/kWh for 2005. Please refer to page #100 In 2005 exchange rate was 1,35TL/$ and it was around 6, 2 cent/$. In 2004 and 2005, no one has sufficient information about electricity market. Therefore Akım Enerji's consultant presented and used a price assumption which was for to stay on safety side. This price and assumption was accepted by Akım Enerji's board.	a basis of the investment analysis), the electricity sales price becomes 0,0605 $. Please clarify. To be on the conservative side, please also calculate the IRR for 5,5 €cent and discuss your findings in the PDD. The corrective action request is still open. **Review 2:** It is acceptable for the PP to use the data on the investment decision date, because the renewable energy law was not valid at the time of investment decision. Hence the choice is in line with the methodology. The corrective action request is closed.
CAR18- Please send a copy of the loan agreement. Please use the actual loan conditions in the calculations and do not use the estimated conditions taken from the feasibility report (including the debt ratio)	Table 3 1.p	Mutually agreed about this item. **Response to Review 1:** According to the interviews made with Validation Team, it has been concluded that the feasibility report which was submitted to the validation team is the basis for the investment decision, therefore this assumption can also be reflected to the loan agreement. **Response to Review 2:** Turkish Accounting Principals assumes	**Review 1:** Please include your justifications in the validation protocol. The corrective action request is still open. **Review 2:** The feasibility study is taken as the basis of the investment decision. Hence the data from the feasibility study can be reflected to the IRR calculations. However, in the analysis part it is

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		timely recording of expenses in their occurrence period. However, it also allows capitalization of interests during the investment period. But this is an option to the main rule. Therefore, it is assumed in the calculation that interests will not be capitalized but expensed as they occur. Please see: http://www.alomaliye.com/kasim_05/tms_borclanma_maliyeti_stand_teb_9.htm Paragraph 7-10	presented that there is a grace period of 3 years. There are interest payments (cash outflow) seen in those years years. Interest expenses must be added to the asset value to be amortised. The corrective action request is still open. **Review 3:** Capitalization or expensing the interest expenses occurred in the investment period is the investor's choice. So, the response is accepted. The corrective action request is closed.
CAR19- In the IRR calculation sheet for the year 2009 it is assumed that the plant will work at 80% of its capacity and will generate 299 GWh. However the plant still has not started generation; therefore please correct the calculations accordingly.	Table 3 1.p	This is an assumption which is given during the investment decision.	According to the interviews made with the project owners, it has been concluded that the feasibility report which was submitted to the validation team is the basis for the investment decision, therefore this assumption can also be reflected to the IRR calculations. The corrective action request is closed.
CAR20- Please send a copy of the electromechanical equipment agreement and use the actual value in the IRR calculations.	Table 3 1.p	Mutually agreed about this item. **Response to Review 1:** According to the interviews made with the validation team, it has been concluded that the feasibility report	**Review 1:** Please include your justifications in the validation protocol. The corrective action request is still open.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		which was submitted to the validation team is the basis for the investment decision, therefore this assumption can also be reflected to the IRR calculations.	**Review 2:** The feasibility study is taken as the basis of the investment decision. Hence the data from the feasibility study can be reflected to the IRR calculations. The projected loan conditions have been validated from page 12-3 of the feasibility study dated May 2005. The corrective action request is closed.
CAR21- Please give detailed explanation about the Operational Expenses, how many people are going to work? What will be their positions? What are their projected salaries? What is the projected cost for their transportation, meals? Please give objective evidences for these expenses and revise the calculations using these expenses.	Table 3 1.p	Mutually agreed about this item. **Response to Review 1:** According to the interviews made with the validation team, it has been concluded that the feasibility report which was submitted to the validation team therefore this assumption "expenses such as salaries, transportation and meals costs".	**Review 1:** Please include your justifications in the validation protocol. The corrective action request is still open. **Review 2:** The feasibility study is taken as the basis of the investment decision. Hence the data from the feasibility study can be reflected to the IRR calculations. The operating expenses have been validated from the feasibility study dated May 2005. The corrective action request is closed.
CAR22- The insurance value is taken as 0,05% of total assets. Please send the insurance policy and revise the financial model using the data from the insurance policy.	Table 3 1.p	Mutually agreed about this item. **Response to Review 1:** According to the interviews made with the validation team, it has been concluded that the feasibility report	**Review 1:** Please include your justifications in the validation protocol. The corrective action request is still open.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		which was submitted to the validation team, is include insurance value assumption and it is also included calculations in feasibility report. **Response to Review 2:** It is assumed that the insurance will be on the original asset value.	**Review 2:** The feasibility study is taken as the basis of the investment decision. Hence the data from the feasibility study can be reflected to the IRR calculations. The insurance value has been validated from page 12-3 of the feasibility study dated May 2005. However please clarify if insurance cost depends on the original asset value or on the book / market value of the asset throughout the asset life? The corrective action request is still open. **Review 3:** The explanation is accepted. The corrective action request is closed.
CAR23- Please send detailed information about the maintenance schedules, please give the frequency of maintenance and expected costs by giving objective evidences. Is there a need for higher cost maintenance for 10^{th}, 20^{th} ....years, or will the same type of maintenance be done for every year? Please revise the financial model using the actual maintenance schedules and expenses projected by the manufacturer of the equipment.	Table 3 1.p	Mutually agreed about this item. **Response to Review 1:** According to the interviews made with the validation team, it has been concluded that the feasibility report which was submitted to the validation team is, therefore maintenance and expected cost assumption is also mentioned in feasibility report.	**Review 1:** Please include your justifications in the validation protocol. The corrective action request is still open. **Review 2:** The feasibility study is taken as the basis of the investment decision. Hence the data from the feasibility study can be reflected to the IRR calculations. The maintenance expenses have been

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
			validated from page 12-3 of the feasibility study dated May 2005. The corrective action request is closed.
CAR24- Under sub-step 3a the barriers have been categorized into 4 categories as follows: a. Investment/financial barriers, b. Technological barrier c. Legal and bureaucratic barriers and d. Climatic conditions According to UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality" the barriers may include: a. Investment barriers b. Technological Barriers c. Barriers due to prevailing practice d. Other barriers Please revise the categories accordingly.	Table 3 1.v	Please find the attachment # 4 "Letter from DSI" **Response to Review 1:** Please refer to the PDD Version 3, where the barriers are now categorized according to the categories given in the UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality".	**Review 1:** The barriers are still categorized under the same categories in the PD version 02. Please categorize the barriers according to the categories given in UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality". The referred attachment is not related to the corrective action request. The corrective action request is still open. **Review 2:** In PD version 03, the barriers are categorized under three categories, namely: ℘ Investment/Financial Barriers ℘ Technological Barriers ℘ Other Barriers The corrective action request is closed.
CAR25- The equipment's market availability: Under this barrier it is explained that the equipment is purchased from Alstom which is a French company. It is also stated that there is a shortage for hydro electrical equipments in	Table 3 1.v	Turbines and generators have high prices. In the energy market, there are shortages for equipments such as turbines and generators from the manufacturer companies. Mainly the	**Review 1:** According to Guideline 4 given in EB50 Report Annex 13 "Guidelines for Objective Demonstration and

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
global markets. Therefore equipments must be ordered two or more years in advance. Hence, the necessity of the equipment importation increases the investment costs. Furthermore, these equipments need specific services and maintenance, which thus represents an additional operational cost. Please provide objective evidence proving these statements, and please also explain in detail why this is a barrier for the proposed project activity, as this may be the case for all kinds of projects which depend on technologies that are not currently manufactured in the country.		turbines, generators and other equipments are being manufactured and imported from other countries. However, the companies mainly schedule the orders for 2 or more years. Besides, these equipments will need specific services and maintenance, which should be in needed quality, will be an additional cost for the operational costs. The transportation of these equipments to the job site also requires special equipments. Hydro turbines are usually individual products, which have to be designed according to the local conditions such as discharge, head and given geometrical situations. This requires an individual tailor-made design for the different components of the turbine, which causes a great demand of engineering effort. To obtain shapes with superior hydraulic efficiency for the components the designer must investigate many geometry variations. Therefore, there is the need for a qualified tool for the flow analysis, where many variations can be made in a short time, safety analysis carried out, and whether a variation needs an improvement over certain period. The	Assessment of Barriers": *"Barriers that can be mitigated by additional financial means can be quantified and represented as costs and* ***should not be identified as a barrier for implementation of project*** *while conducting the barrier analysis, but rather should be considered in the framework of investment analysis."* These kind of expenses are included in the Feasibility study under the Unknown expenses which is taken as 5% of the projected turbine costs. Turbines being designed according to special needs can not be identified as a prohibitive barrier for the project activity. As a matter of fact, having the turbines designed specifically for this project activity will have a positive effect in terms of efficiency and optimum generation capacity. Although the project owners had to wait for the turbines to be delivered for two years, the projects other construction works have been completed during this period. The project did not stop because the turbines were not delivered. The corrective action request is still

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		research work shall focus on a combination of field testing, accurate laboratory testing and current computational modeling methods." http://www.unilorin.edu.ng/unilorin/index.php/nachred-research-projects/small-hydro-turbines Hydro power is dependent on individual dam site conditions, technical and operational requirements differ from plant to plant. This project's hydro generators are tailor-made for every project http://www.power.alstom.com/home/new_plants/hydro/products/generators/41332.EN.php?languageId=EN&dir=/home/new_plants/hydro/products/generators/ **Response to Review 1:** The above argumentation does not stress any additional financial burden but a technological barrier. Yes it is true that tailor-made production may increase the efficiency of turbines but it also limits the flexibility of the investor to choose any turbine producer. The tailor-made engineering requirements of turbines force the investor to go to a producer with a good reputation.	open. **Review 2:** The project proponents have presented an offical letter from the state Hydraulic Works stating that the project activity is the first run-off river HEPP with the biggest capacity and which has an underground power house. This document is assessed to be a sufficient proof showing that the project is the first of its kind, however according to the tool, the first of its kind barrier shall be defined under the category "Barriers due to prevailing practice". Although the barrier is defined under technological barriers, it is not explained clearly how this effected projects implementation. Please explain in more detail. The corrective action request is still open. **Review 3:** The barrier analysis section is revised in the PD version 4. Under the technological barriers, lack of transmission lines to connect to the grid is given as a barrier as per the methodology. (lack of infrastructure)

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		Usually these producers have long waiting lists and they ask a premium over a regular producer's price. It means taking extra engineering risk for the investor going to Chinese or Russian turbine producers who do not have reputations as strong as European producers. Cevizlik HEPP has the biggest installed capacity underground powerplant project, as DSI letter declared, and the first company that constructs this style of HEPP. During the construction Akım Enerji faced several barriers, one of them TEIAS transmission line procedures, as referred in page # 89 PD version03. After then, other companies who will start to HEPP project in that region will not face those problems. Also If TEIAS has done this procedure, TEIAS would not have faced such as problems either. After we finished this construction and start to operation of HEPP, İkizdere HES, which was done by Government and sold to a private company, will use Cevizlik HEPP switchyard for to renew its transmission equipments.	Also as the turbines are very high in capacity, the project requires tailor made turbines, which requires maintenance services from the producer which is a French company. The corrective action request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		Response to Review 2: The barrier is combined under "technological barriers" in the PD. Please see related section in the PD version 04.	
CAR26- Lack of infrastructure : Transmission line: In this barrier it is stated that the proposed project activity requires the construction of 21 km of new transmission line and this additional cost leads to higher financial risks. In the feasibility study the projected cost for the transmission line is USD 2.000.000,- this amount is only 1,46% of the total investment amount, which is USD 137.249.844,- therefore it is not a very big amount in the whole investment cost. On top of all, this amount will be offset against operational fees during the operational life of the project. Please explain in detail why this should be considered as a barrier specifically for this type of project activity.	Table 3 1.v	Beside the cost of transmission line payment, other biggest barrier has long procedure as bureaucratic barriers (Please find the attachment# 5), **Response to Review 1:** Yes it is true that all kinds of projects suffer from bureaucratic barriers in Turkey. But this should not mean that we should eliminate the whole bureaucratic barrier option which is made available in the tool. The purpose of the above argument was to prove that besides the extra cost of transmission line, it is a long bureaucratic procedure to get the necessary permits from official bodies. Since the project is the largest and the first of its kind in the region it had to construct the transmission lines and other connection facilities to the grid. Some other similar projects in the region will be able to use the same transmission line and connection	**Review 1:** The bureaucratic procedures for the transmission lines starting from *"The arrival of connection agreement by TEIAS"* is given as an attachment to identify the bureaucratic barriers that are faced by HEPP projects. However this is not a specific barrier for this project activity. All kinds of projects suffer from bureaucratic barriers in Turkey. Corrective action request is still open. **Review 2:** The project proponents have presented an offical letter from the state Hydraulic Works stating that the project activity is the first run-off river HEPP with the biggest capacity and which has an underground power house. This document is assessed to be a sufficient proof showing that the project is the first of its kind, however according to the tool, the first of its

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		facilities and they will not face a similar barrier unlike the project. Please refer to PD Version03 page# 89 **Response to Review 2:** The barrier is combined under "technological barriers" in the PD. Please see related section in the PD version 04.	kind barrier shall be defined under the category "Barriers due to prevailing practice", the other arguments can be supportive arguments for this barrier but they can not be defined as sole barriers. According to the tool, the barriers identified should be *"realistic and credible barriers that would prevent the implementation of the proposed project activity from being carried out if the project activity was not registered as a CDM activity"* However these barriers have not prevented the implementation of the proposed project activity. Also in the PD version 03, the bureaucratic barriers and Lack of Infrastructure are identified as two different barriers. Please identify the barriers in line with the tool. The corrective action request is still open. **Review 3:** The barrier analysis section is revised in the PD version 4. Under the technological barriers, lack of transmission lines to connect to the grid is given as a barrier as per the

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
			methodology. (lack of infrastructure) Also as the turbines are very high in capacity, the project requires tailor made turbines, which requires maintenance services from the producer which is a French company. The corrective action request is closed.
CAR27- Lack of local practice and experience to construct such a big installed capacity run-off-river hydro power plant: In this barrier it is stated that: *"The project activity is the biggest size run-off-river project ever realised in Turkey considering its installed capacity. Therefore, there is a lack of local knowledge and experience for both designing of civil works and construction. This means that the installation of such big installed capacity equipments within a run-of-river hydro project will bring experience to the Turkish hydropower sector."* Please give objective evidence to prove the above mentioned statement.	Table 3 1.v	As we mentioned during the site visit, and also from attachment # 4, this project is the biggest one which has underground powerhouse and underground power tunnels. Underground powerhouse projects always have rain threats, floods especially for Eastern Black Sea Region. Unfortunately we were faced this problems end of July 2009. Please find attached #8 pictures during the Akım Enerji faced because of flood disaster. Actually, power house level is lower than the road and river level. **Response to Review 1:** Please refer the pictures in PD Version03 about flood disaster, Figure #19,#20,#21	**Review 1:** Please include these justifications in the VCS PD. Please also attach the letter taken from State Hydraulic Works and the photos to the PD. The corrective action request is still open. **Review 2:** The pictures and the letter taken from the state hydraulic works (DSI) has been attached to the PD version 03. The corrective action request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
CAR28- Climatic Conditions: In this barrier it is stated as follows: *"climate conditions, such as long and heavy rains and water floods at the project site may affect the construction works, causing interruptions and delays in the project's schedule, which may arise in additional expenses."* This is not a risk specific for this type of project activity. This is a risk all project activities can face, therefore this can not be accepted as a barrier.	Table 3 1.v	Black Sea region is heavy rainfall region. Sometimes flood damages occur because of this heavy rainfall which we have faced such a disaster this summer. Such disasters cause losing time and extra cost to investors. Underground powerhouse level is lower than road and İyidere river level. **Response to Review 1:** The design of the project which is under ground creates an additional risk of flood compared to traditional designs where the power houses are located above the ground. Therefore the barrier argument is based on the extra risk taken compared to a traditional power house design. **Response to Review 2:** The project activity faced a flood during the construction and the power house which was constructed underground filled with water. This happened just before the installment of turbines. It would be a disastrous for the project if the flood had happened	**Review 1:** Please also include your explanations in the PD. According to Guideline 4 given in EB50 Report Annex 13 "Guidelines for Objective Demonstration and Assessment of Barriers": *"Barriers that can be mitigated by additional financial means can be quantified and represented as costs and **should not be identified as a barrier for implementation of project** while conducting the barrier analysis, but rather should be considered in the framework of investment analysis."* These kind of expenses are included in the Feasibility study under the Unknown expenses which is taken as 10% of the projected construction costs. The corrective action request is still open. **Review 2:** Please explain in detail how this barrier effected the project activity and what kinds of precautions are taken against these risks. The corrective action request is still

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		after the installment of turbines. Experiencing such an unexpected flood in the power house, the project owner had to construct a specially designed barrier on the tail water exit of the power house which is planned to prevent water entrance back to power house. It is obvious that this unexpected flood had happened due to several reasons, but lack of enough experience in underground power house construction and harsh climatic condition being the major ones.	open **Review 3:** In the PD version 04, the barrier analysis section is revised. Climatic conditions is not given as a separate barrier but it is given as a supportive agreement for the barriers due to prevailing practice. As the project activity entails the construction of the first and highest capacity underground powerhouse in the host country, the project owners couldn't foresee the flood risk. As the power house is built underground, flood is a bigger risk compared to projects with power houses built over ground. The corrective action request is closed.
CAR29- According to UNFCCC Methodological Tool "Tool for the assessment and demonstration of additionality" the barriers shall be realistic and credible and shall prevent the implementation of the proposed project activity from being carried out if the project activity was not registered as a CDM activity. Please re-assess the barriers given in the VCS PD as none of these barriers are strongly proven enough to have prevented the implementation of this project activity.	Table 3 1.v	**Response to Review 1:** Please refer to the PDD version 2, Section 2.5 and 2.2 **Response to Review 2:** Please see related sections in PDD version 04 for requested amendments.	**Review 1:** The barriers identified in the PD version 02 are still not strong and preventive enough for the project activity. According to step 3 of the additionality tool *"If the CDM does not alleviate the identified barriers that prevent the proposed project activity from occurring, then the project activity is not additional."* For all of the barriers defined in the PD, please identify how the VER revenues

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
			alleviate the barrier. The corrective action request is still open. **Review2:** In the PD version 03 a general definition is given on how the VER revenues will help overcome the identified barriers. Please extend this explanation, and discuss how the VER revenues alleviate **each of the barriers**.The corrective action request is still open. **Review 3:** In the PD version 4 how the VER revenues help alleviate each of the barriers are explained. The corrective action request is closed.
CAR30- Outcome of Sub-step 3a is not clearly mentioned.	Table 3 1.w	Please refer to the PDD Version 2 where the outcome of Sub-step 3a is now clearly mentioned.	Outcome of sub-step 3a is clearly mentioned in the VCS PD version 02. The corrective action request is closed.
CAR31- Outcome of step 3 is not clearly mentioned.	Table 3 1.y	Please refer to the PDD Version 2 where the outcome of Step 3 is now clearly mentioned.	Outcome of Step 3 is clearly mentioned in the VCS PD version 02. The corrective action request is closed.
CL1- The project title is ***"The Cevizlik Run-of-River Hydroelectric Power Plant"*** as stated	Table 1	The date of the document is stated under section 1.1 of the PD as	In PD version 02 the date of the document is included.

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under section 1.1 of the PD. Please also state the date of the document in dd/mm/yyyy format under this section.	2.d.b	15.01.2010.	The clarification request is closed.
CL2- Under Section 1.6 of the VCS PD version 01, it is stated that: "- *Project start date: January 2008 (Date on which the project reached financial closure)* - *VCS crediting period start date: 1st December 2011.* - *VCS project crediting period: 10 years, renewable once."* According to VCS 2007.1 The Project Start Date is the date on which the project began reducing or removing GHG emissions. Please correct accordingly. Please also state the date on which a financial commitment was made to the project activity (i.e. the date of the investment decision)	Table 1 2.d.g.i	We have mentioned these issue in 27 and 28th page of PD. Briefly, the date of investment decision is the board decision date. The first financial commitment date is 16.11.2005 which is submitted the performance bond to EMRA. Please find attachment #6 **Response to Review 1:** Below information added to PD Version3 in Page 4 -Investment decision date: May 2005 -Financial Commitment date: 16.11.2005 -Construction Start date: Jan 2008 **Response to Review 2:** The requested change has been done in the PD Version 04.	**Review 1:** The date of investment decision is taken as the date of the feasibility. And all of the IRR calculations are based on this feasibility study. The board decision date can not be taken as the date of investment decision as this board decision is related to the prior consideration of VER revenues. The clarification request is still open. **Review 2:** In the PD version 03, under section 7, it is stated as follows: *"Loan signature (considered as the starting date of the project activity)"* However according to VCS 2007.1, the project start date is the date on which the project began reducing GHG emissions. Also project start date is still not given in the PD version 03. The clarification request is still open. **Review 3:** The project start date is given as May 2010 as the date when the project commences electricity production

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
			under section 1.6 as per the rules of VCS 2007.1. The clarification request is closed.
CL3- The crediting period start date is given as 1 December 2011 under section 1.6 of the VCS PD version 01. However during the site visit it was stated that the project will commence electricity generation starting from late December 2009. It is also stated under section 7 of the PD version 01 that the project will be commissioned on December 2009. The monitoring period and the crediting period starts when the project supplies electricity to the grid. Please clarify the crediting period start date.	Table 1 2.d.g.ii	Date of VCS project crediting period is updated "as 1st February 2010" in PD document page 4. Updated: Date of VCS project crediting period is updated as" 1st of March 2010"in PD Document Version 3. The suggested changes updated in PD Version04.	In VCS PD version 02 the crediting period start date is revised. The clarification request is closed.
CL4- The applicable mandatory laws that will be applied for the project are given under section 1.10 of the VCS PD version 01. Under this section the reference law number (footnote #3) given for the environmental law is wrong. Please clarify. Please send the scanned copy of the letter given in Annex-1 showing the letter number. (Footnote #6) Please send a scanned copy of the reference letter given under footnote #7	Table 1 2.d.k	Environmental Law number shall be 2872 instead of 2827. Related footnote is changed. Please find the attachment "footnote #6" Please find the attachment "footnote #7"	The footnotes have been corrected. The clarification request is closed.
CL5- The contact information of the project	Table 1	**HEPP Invesment manager**, briefly	**Review 1:**

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
proponent and carbon consultants are given in a tabular format under section 1.15 of the VCS PD. Please also briefly define the responsibilities of the contact persons regarding the carbon crediting process.	2.d.r	who is responsible of all HEPP projects investments and progress of Hydro projects. **HEPP Investments Assistance Coordinator,** Analyze the related documents and coordinate between internal department and setup meetings with companies. **Ecosur,** responsibilities are; Preparation of the PD Documents Standardization the Project Assisting the Akım Enerji during the validation process, **Response to Review 1:** Please refer to the PDD Version 3, Section 1.15, where the responsibilities of the contact persons regarding the carbon crediting process are now stated.	Please also include this information in the PD. The clarification request is still open. **Review 2:** The responsibilities of the contact persons are given under section 1.15 of the PD version 03. The clarification request is closed.
CL6- Please reconfirm that there is no commercially sensitive information that needs to be excluded from the public version of the VCS PD that will be displayed on the VCS Project Database.	Table 1 2.d.u	There is no commercially sensitive information that needs to be excluded from the public version of the VCS PD that will be displayed on the VCS Project Database. Updated: As Akım Enerji, company policy we do not find ethical to announce this social	It has been stated in PD version 02 that there is no commercially sensitive information. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		and financial aids, therefore this aids are commercially sensitive information that needs to be excluded from the public version of the VCS PD that will be displayed on the VCS Project Database.	
CL7- Under section 2.1 of the VCS PD, the title and the reference of the methodology are given as follows: *"The approved baseline and monitoring methodology ACM0002-Version 10: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" ("ACM0002") is applied. For the purpose of establishing additionality, Version 05.2 of the "Tool for the demonstration and assessment of additionality" ("Additionality Tool") is also used."* However, although the UNFCCC Methodological Tool "Tool to calculate emission factor for an electricity system" is used, this tool is not referred under this section of the PD version 01. Please clarify.	Table 1 2.d.v	The following sentence has been added in Section 2.1 of the PDD Version 2: *"Additionally, for the purpose of calculating the emission factor of the Turkish electricity grid, "Tool to calculate emission factor for an electricity system", Version 01.1 is employed."*	In VCS PD version 02 the "tool to calculate emission factor for an electricity system" is referred under section 2.1. The clarification request is closed.
CL8- In ACM0002 Version 10, under the project emissions section it is stated that for hydropower plants if the power density of the project activity (PD) is greater than 10 W/m^2, $PE_{HP,y}=0$" Please also state in the VCS PD that the PD is	Table 1 2.d.x 2.d.kk Table 2	The following sentence has been added in Section 2.2 of the PDD Version 2: "PD > 10 W/m^2, therefore, according to the methodology, there will be no emissions from the regulation pond".	The sentence has been added to PD version 02. The clarification request is closed.

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greater than 10 W/m^2.	1.2.7 1.5.1		
CL9- Under section 2.3 of the PD version 01 it is stated that: *"The life cycle emissions of alternative power generation plants, in particular fossil fuel-fired power plants, are typically higher than those from hydroelectric power plants when including emissions due to mining, refining and transportation of fossil fuel."* Please provide objective evidence or a reference source to prove the above mentioned statement.	Table 1 2.d.y	Section 2.3 is renewed in PD Version 2 so PD Version 1's footnote#8 is deleted.	The referred sentence is taken out from the PD version 02. The clarification request is closed.
CL10 - Please send a scanned copy of the reference source given in footnote #8 (and 26) to the validation team.	Table 1 2.d.y Table 2 1.1.7 1.2.3	Section 2.3 and Section 4.2 are renewed in PD Version 2 so PD Version 1's footnote#8 and #26 is deleted. (not necessary with new information)	Footnotes 6 and 26 have been taken out from the PD version 02. The clarification request is closed.
CL11- Types of data and information to be reported including the units of measurement is given under section 3.4 of the VCS PD version 01, however according to VCS PD template this information should be given under section 3.2. Please revise accordingly.	Table 1 2.d.ff.ii	Please refer to the PDD Version 2 where the type of data and information to be reported is now given under Section 3.2.	In PD version 02 the information is given under section 3.2. The clarification request is closed.
CL12- The origin of the data is given as the readings from the meters obtained by the Electrical Engineers which is stated under section 3.4 of the VCS PD version 01, however according to VCS PD template this information	Table 1 2.d.ff.iii	Please refer to the PDD Version 2 where the origin of the data given as the readings from the meters obtained by the Electrical Engineers is now stated under Section 3.2.	In PD version 02 the information is given under section 3.2. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
should be given under section 3.2. Please revise accordingly.			
CL13- Information about the monitoring is given under section 3.4 of the VCS PD version 01. Measuring will be done by the meters; Electrical Engineers will obtain the readings from the meters and will report them in a spreadsheet, however according to VCS PD template this information should be given under section 3.2. Please revise accordingly.	Table 1 2.d.ff.iv	Please refer to the PDD Version 2 where the information about the monitoring plan is now given under Section 3.2.	In PD version 02 the information is given under section 3.2. The clarification request is closed.
CL14- Monitoring period is given as annual under section 3.4 of the VCS PD version 01, however according to VCS PD template this information should be given under section 3.2. Please clarify.	Table 1 2.d.ff.v	Please refer to the PDD Version 2 where the monitoring period is now given under Section 3.2.	In PD version 02 the information is given under section 3.2. The clarification request is closed.
CL15- Monitoring roles and responsibilities have been defined clearly in the monitoring plan. Under section 3.4 of the VCS PD version 01 It is stated that the Electrical Engineers will be trained on calibration of the equipment however calibration is not listed as one of their responsibilities under section 3.2.	Table 1 2.d.ff.vi	Related part is added to the Section 3.2 in to the PD version 2, page #31	In PD version 02 under section 3.2 it is stated that the electrical engineers will be responsible for the calibration. The clarification request is closed.
CL16- The source of data for the parameter $EF_{grid,CM,y}$ is given as TEIAS, however this parameter is calculated using data both from TEIAS and IPCC. Please clarify.	Table 1 2.d.gg.iii	Please refer to Section 3.3 of the PDD Version 2, where the source of data for the parameter $EF_{grid,CM,y}$ has been clarified.	The source of data for this parameter is correctly identified under section 3.3 of the PD version 02. The clarification request is closed.
CL17- In the VCS PD version 01 the value applied for the parameter $EG_{PJ,y}$ is given as 335,030 MWh/yr. Please explain how this value	Table 1 2.d.gg.iv	Please find the attachment # 7, related table and explanation is about the calculation of Cevizlik monthly and	The detailed information about the calculation of the energy generation is submitted to and reviewed by the

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
is calculated by giving the calculation details.		annual electricity power generation.	validation team. The clarification request is closed.
CL18- QA/QC procedures to be applied for the parameter $EG_{PJ,y}$ is given as per ACM0002. However QA/QC procedures to be applied for the parameter $EF_{grid,CM,y}$ is not given in the monitoring plan. Please clarify.	Table 1 2.d.gg.vi	Please refer to the PDD Version 2 where the QA/QC procedures to be applied for the parameter $EF_{grid,CM,y}$ have been stated. The following sentence has been added: "QA/QC procedures to be applied: As per *"Tool to calculate the emission factor for an electricity system""*	The QA/QC procedures to be applied for all of the parameters that are monitored are given under section 3.3 of the VCS PD version 02. The clarification request is closed.
CL19- Methodological choices are explained under section 4.1 of the VCS PD version 01. However the UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" is not referred to under this section. Please clarify.	Table 1 2.d.ii	The following sentence has been added in Section 4.1 of the PDD Version 2: *"In line with the application of the methodology the emission factor for grid electricity is calculated as per the procedures detailed in the "Tool to calculate the emission factor for an electricity system" (Version 01.1)"*	The UNFCCC Methodological Tool "Tool to calculate the emission factor for an electricity system" is referred in PD version 02. The clarification request is closed.
CL20- The revised generation license was sent to the validation team as a proof of title, and please also present the generation license taken from EMRA as an attachment to the VCS PD. Please also state who will have the ownership of the emission reductions. Please correct the numbering under section 8 of the VCS PD version 01.	Table 1 2.d.pp.i	Please refer to the PDD Version 2 where the numbering under Section 8 has been corrected. Also, Section 8.1 has been changed: *"The revised generation license is presented in Annex 6 as proof of title.* *The ownership of the emission reductions will be Akım Enerji Üretimi Sanayi ve Ticaret A.Ş."*	**Review 1:** The ownership of emission reductions have been included in the VCS PD version 02. The license is also added to the PD as a proof of title, please also include an English translation of the license as according to section 3.2 of VCS 2007.1, all VCS program related documents have to be presented in

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		And, the generation license is presented in Annex 6. **Response to Review 1:** Please refer to English translation of Generation License in PD Version3.	English. The clarification request is still open. **Review 2:** The English translation of the generation license is given in the PD version 03. The clarification request is closed.
CL21- The assumptions made in determining the project electricity system are not defined and justified. Please define and justify the assumptions made in determining the project electricity system in line with the requirements given in ACM0002 and "Tool to calculate the emission factor for an electricity system"	Table 2 1.2.10	Please refer to the Section 4.2 of PDD Version 2	The assumptions made in determining the project electricity system are defined and justified in PD version02. The clarification request is closed.
CL22- Transmission & distribution losses are neglected in the emission reduction calculations as required by the methodology. But this is not stated in the VCS PD version 01. Please clarify.	Table 2 1.3.6	Please refer to the PDD Version 2 where the footnote #52 has been added in page 48: *"Transmission & distribution losses are neglected in the emission reduction calculations as required by the methodology".*	In PD version 02 it is stated that transmission and distribution losses are neglected. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
CL23- In the PD version 01 under Step 3, OM calculations, it is stated that *"NCVi of different fuels come from TEIAS website"* however the link to the reference source is missing, it is also not given under the "Step 3" tab of the Emission Factor Calculation Excel Sheet, and in Annex 4 where all the data used in the EF calculations are presented. Please clarify.	Table 2 1.8.3	Emission Factor Calculation excel sheet Version where the EF calculation has been updated. The link to this data is: http://www.teias.gov.tr/istatistik2008/46.xls **Response to Review 1:** The OM Calculation is revised accordingly. Please see revised Baseline Excel Sheet and Baseline Calculation Section of the VCS PD Version3.	**Review 1:** In the revised EF calculation excel sheet, the Simple OM Option C has method been used. This requires application of the following formula: $$EF_{grid,OMsimple,y} = \frac{\sum_i FC_{i,y} \times NCV_{i,y} \times EF_{CO2,i,y}}{EG_y}$$ Obviously, each year 's (y) NCV has to be multiplied with the same year's FC and EF. However, in the calculations there is no explicit data for NCV; the fuel consumption values are not taken as mass or volume units which is required by the methodology. Instead the figures taken correspond to $FC_{i,y}xNCV_{i,y}$ values. This approach hides the NCV assumptions inherent in the values and is not acceptable. The use of regional or national average default values can only be accepted if values are reliable and documented in regional or national energy statistics. However, it cannot be verified as there is no such data/information neither in the PDD nor in the Excel sheet. The clarification request is still open. **Review 2:** In PD version 03, the EF calculations

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
			are revised to include the NCV of each year. The excel sheet is also revised. The clarification request is closed.
CL24- In the PD version 01, under Step 3 of the EF calculations, it is stated as follows: *"An specific emission factor is calculated for each type of power plant based on the CO2 emission factor, the generation efficiency and the unit conversion factor from TJ to MWh (277,8)."* Please clarify by giving more detailed explanation in the PD explaining where the generation efficiency and unit conversion factor is used in the calculation of the OM EF.	Table 2 1.8.3	Please refer the PDD Version, the EF calculation has been updated.	The EF calculation sheet has been revised. The clarification request is closed.
CL25- In the OM calculations, under the "Step 2" tab of the Emission Factor Calculation Excel Sheet, the value given on cell F27 does not match with the reference source, please clarify.	Table 2 1.8.3	Emission Factor Calculation excel sheet Version, the EF calculation has been updated	The EF calculation sheet has been revised. The clarification request is closed.
CL26- In the OM calculations, under the "Step 2" tab of the Emission Factor Calculation Excel Sheet, the references given for the cells D32, D33, E32, E33, F32, F33, G32, G33, H32, H33 are wrong, these values are calculated in the excel sheet and not taken from the given	Table 2 1.8.3	Emission Factor Calculation excel sheet Version, the EF calculation has been updated.	The EF calculation sheet has been revised. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
reference source. Please clarify.			
CL27- Please give the link to the reference source to the capacity projection data (list of power plants) for all the related years.	Table 2 1.8.3	The link references to capacity projection data are the following: 2008: http://www.teias.gov.tr/istatistik2008/8.xls 2007: http://www.teias.gov.tr/ist2007/8.xls 2006: http://www.teias.gov.tr/ist2006/8.xls 2005: http://www.teias.gov.tr/istatistik2005/7.xls **Response to Review 1:** The links above are not used in the BM Calculation. As the Capacity Projection Reports of TEIAS includes the capacity additions in more detail (plant based capacities), the data for the BM calculation is taken from the Annex 1 and Annex 2 of these reports. The links for the Capacity Projection Reports of TEIAS are as follows: http://www.teias.gov.tr/projeksiyon/KAPASIT	**Review 1:** It is seen from the excel sheet and the PD version 02 that the capacity additions are taken from the capacity projection reports that were published in the TEIAS website. The links to these reports are also presented in the VCS PD. Please clarify where the data in the links given in the left column are used. The clarification request is still open. **Review 2:** The links to the capacity addition data are revised in the PD version 03. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		E%20PROJEKSIYONU%202005.pdf http://www.teias.gov.tr/projeksiyon/KAPASITE%20PROJEKSIYONU%202006.pdf http://www.teias.gov.tr/projeksiyon/KAPASITE%20PROJEKSIYONU%202007.pdf http://www.teias.gov.tr/projeksiyon/KAPASITEPROJEKSIYONU2008.pdf http://www.teias.gov.tr/projeksiyon/KAPASITEPROJEKSIYONU2009.pdf Please see the calculation details in the Baseline excel sheet and the BM Calculation Section of the VCS PD Version 03.	
CL28- In the BM calculations please clarify where the plant efficiency values are taken from, and please justify your selection in the PD.	Table 2 1.8.3	Since there are no official efficiency values based on each power plant or each fuel type is available in Turkey, the default values from Annex 1 of the "Tool to calculate the emission factor for an electricity system" where used. Most natural gas power plants in Turkey are combined cycle, most coal power plants operate sub-critical and most liquid fuel power plants adopt an open cycle technology. Please refer to the PDD Version 2 where page# 35. **Response to Review 1:** The above response of the project	**Review 1:** When the excel calculation sheet is reviewed it is seen that efficiency values are not taken from Annex 1 of the tool. It is also stated in the VCS PD version 02 that: *"The electric efficiency rates for different fuel types across ownership structures of the facilities (state owned vs privately owned vs mobile facilities) were calculated through actual energy consumption figures of these facility types in the last 3 years. All additional facilities were assumed to be equal to its specific group's average efficiency."* Also in the new calculation sheet for

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		owner requires a correction as the efficiency values are calculated from actual figures as explained in the VCS PD version 02. However yearly calculations were revised as suggested in the Review.	the BM calculations: The BM formula is as follows: $EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}}$ Obviously, the EF for each year has to be calculated separately whereas in the computations the formula is used over the total for 2004-2008. Please revise your calculations accordingly. The clarification request is still open. **Review 2:** The BM calculations are revised both in the PD version 03 and the excel calculation sheet. The clarification request is closed.
CL29- Under the "Feuil 2" tab of the Emission Factor Calculation excel sheet the value for Imported coal consumption for the year 2004 (cell F8) is wrong, although the value is given correctly under "Step 3" tab, please also correct the value given in Feuil 2 tab.	Table 2 1.8.3	Please refer to CAR8 and to the Emission Factor Calculation excel sheet Version, the EF calculation has been updated.	The baseline emission factor calculations have been revised with the latest data. The corrective action request is closed.
CL30- Under the "Feuil 2" tab of the Emission	Table 2	Please refer to the Emisson Factor	The baseline emission factor

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
Factor Calculation excel sheet the value for Imported coal consumption for NCV and EF values it is stated that: *"IPCC default values at the lower limit of the uncertainty at a 95% confidence interval as provided in table 1.2 and 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories"* Are used, however the values that are given are the default values. Please clarify. Please also clarify where the values given in "Feuil 2" tab are used.	1.8.3	Calculation excel sheet Version the EF calculation has been updated.	calculations have been revised with the latest data. The corrective action request is closed.
CL31- Under sub-step 2b, please identify the financial indicator	Table 3 1.o	Please refer to the Sub-step 2c, related financial indicators. Page#21 in PDD version 02. **Response to Review 1:** The suggested change was done in the PD Version 3.	**Review 1:** According to "Tool for the demonstration and assessment of additionality" Under Sub-step 2b (4) first the financial/economic indicator (such as IRR) most suitable for the project type and decision context shall be identified. The project uses IRR as an economic indicator but this should be identified and this selection shall be justified under Sub-step 2b. The clarification request is still open. **Review 2:** The financial indicator is selected as Equity IRR in the PD version 03 under Sub-Step 2b.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
			The clarification request is closed.
CL32- When the Eurobond rate is checked from the link given in the PD version 01, the interest rate of the given Eurobond is 6.75%. Also the duration of this Eurobond is 30 years whereas the IRR analysis is made for a 49 year period, therefore these two values can not be compared. Please select a more realistic benchmark.	Table 3 1.o	The related link indicates the ratios on its updated date. However, while it is acknowledged that the feasibility is given on May 2005, the Eurobond value that belongs to such dates should be noticed. As the Eurobond `sales rates` of May being checked in the attached link 8% should be corrected. Especially, it is just 8% on 4th of May. 2. Since the longest period for Eurobond in 2005 has 2034 period, We consider that this date has been taken as the benchmark date. As it is considered the interest will increase as the period increases, however a 49 years period does not exist, but if such a Eurobond existed, it would negatively affect the project's profitability because of the high interest rates. **Response to Review 1:** Since there is no Eurobond with the same maturity of the investment at the time of decision the yield of a synthetic bond was calculated from the yield curve.	**Review 1:** The rate of the subject Eurobond has been checked from the website of T.C. Ziraat Bankasi. It is seen that on 4th of May 2005 this rate is 8%. The benchmark is used as a comparison, to be able to make a valid comparison between the benchmark and the calculated IRR, either a benchmark with the same period shall be selected or the calculations shall be adjusted according to the selected benchmark. The clarification request is still open. **Review 2:** Please present more information about the yield curve calculation. Which method is used? If it is NelsonSiegel , what are the optimized parameters (β and Γ) and which data set is used for the model preparation. If it is taken from any other source, please provide the reference source. The clarification request is still open.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		Response to Review 2: The yield curve estimation depends on a polynomial regression analysis on the realized yield curve at the time of decision making. It is far beyond project proponent's abilities to calculate an estimated yield curve with Nelson Siegel as the required data for Nelson Siegel calculation is difficult to reach. Therefore, the polynomial regression was used as a proxy to the estimated yield curve. On the other side, the realized yield curve at the time of decision making is a typical upward sloping shaped yield curve. Therefore, this means that any estimation for 50 years bond interest would be higher than the interest rate of 30 years bond. Hence, using the interest rate of 30 years bond as the risk free rate in the benchmark calculation would be conservative as far as the purpose of this calculation is concerned. The benchmark can be estimated around 17.5% if the interest rate of 30 year bond is used in the calculation. This rate is still above the estimated IRR of the project which is 13,4%.	**Review 3:** Polynomial estimation of yield curve can be accepted. Nelson Siegel would give 7.5% and this would lead to a benchmark IRR of 17.1% which is higher than the equity IRR as well. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
CL33- According to item 14 of guidance section of the UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality" *"The risk premiums applied in the determination of required returns on equity shall reflect the risk profile of the project activity being assessed, established according to national / international accounting principles."* However the risk premium which is used for the project activity is a country risk premium and does not reflect the risk profile of the project activity being assessed. Please select and justify a risk premium which reflects the risk profile of hydro power projects in Turkey.	Table 3 1.o	A reliable risk premium related to hydro power projects in Turkey (i.e. technology risk) cannot be identified due to a lack of public information on this sector. Energy sector projects face overall levels of risk that may be higher than other sectors of the economy, and hydro power plants specifically face significant levels of performance risk, related to uncertain climatic factors. Additionally, there are risks associated with the fact that hydro technology, when compared to conventional thermal power generation (throughout the world), has a high capital cost and low load factor, which result in low financial rates of return. This suggests that a realistic risk premium for hydro projects would be higher than the premium indicated by the country risk, suggesting that this approach (i.e. the one used) is conservative." Beta is equal to 1 as the result of expectations of the market's behavior will be in the same rate with the energy sector. When the Beta is bigger than 1, it means that there are more risks. This causes the increase in the cost of equity. This will further worsen the project. As Akım Enerji, we use 1 in our analysis for both the difficulties in	**Review 1:** In the study of Aswath Damodaran the country risk premium for Turkey is given as 5,40 %. The total risk premium is given as 10,2%, however in the benchmark calculations using the CAPM model the Total risk premium is used. According to item 14 of the Annex: Guidance on the Assessment of Investment Analysis: *"Risk premiums applied in the determination of required returns on equity shall reflect the risk profile of the project activity being assessed, established according to national/international accounting principles. It is not considered reasonable to apply the rate general stock market returns as a risk premium for project activities that face a different risk profile than an investment in such indices.* *Rationale: The required rate of return for any project activity will necessarily reflect the underlying risk profile of this project.* ***To apply generalized risk profiles may result in an over statement of the rate of return required to attract investment in a***

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		measurement of Beta, and disputes causing the use of different levels. **Response to Review 1:** The country risk premium defined in the reference refers to the rsik premium over AAA rated countries like USA. Please notice the fact that the country risk premium of AAA rated countries are 0 which is not possible at all. Therefore the risk premium which should be used in CAPM model is 10.2% instead of 5.2%. The reason of using the approach of Aswat Damadoran instead of calculating Market return is the fact that market volatilities are high in emerging markets and this makes statistical calculation less reliable (Please refer to http://www.performancetrading.it/Documents/AdMeasuring/AdM_Estimating.htm). In order to illustrate the fact that calculated market return are less reliable a calculation for market return for the Turkish market has been provided as an attachment to this document (Market Return.xls). As you can see, the market return is calculated as around 20%. But the Standard Error of this calculation is around 13% which makes the result	***specific project type."*** When using the CAPM model, instead of directly taking the country risk premium as the value of "$E(R_m)$-R_f" it would be better to calculate the expected excess return of the market and then subtracting the risk free rate from this value. The clarification request is still open. **Review 2:** Although it would be better to adjust the equity risk premium by reflecting the volatilities of equity and bond prices in CAPM calculations, this approach is also accepted by the financial expert because it leads to a more conservative benchmark assumption. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		questionable. In order to reflect the risk of the project, Beta coefficient is used in CAPM model. We have calculated the average of Betas of similar companies traded in the ISE as a proxy to the Beta of the project. However, please note that Greenfield projects usually have a higher risk profile compared to established up and running companies as they inherit higher construction risks, performance risks, financing risks etc (http://www.finance30.com/profiles/blogs/valuing-a-greenfield-project). Therefore greenfield projects should have higher Betas compared to its peers in stock exchanges. However, using a lower Beta would be a conservative choice in this calculation. You can find the details of this calculation in the PD version 3.	
CL34 Please clarify the value β, how this value is selected.	Table 3 1.o	We assume that the cause for Beta is equal to 1 as the result of expectations of the market's behavior will be in the same rate with the energy sector. When the Beta is bigger than 1, it means that there are more risks. This causes the increase in the cost of equity. This will further worsen the project. As Akım Enerji, we use 1 in our	The explanation is found satisfactory. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		analysis for both the difficulties in measurement of Beta, and disputes causing the use of different levels.	
CL35- Please also explain where the formula Ce=Rf+β(Rm-Rf) is derived from by giving objective evidences and references.	Table 3 1.o	http://www.docstoc.com/docs/3156656/I-Estimating-Discount-Rates-DCF-Valuation-Aswath-Damodaran-Estimating-Inputs This model is named as Capital Asset Pricing Model. This model's definition is this formula in everywhere. It is frequently used in the calculation of Cost of Equity. At least, We have not seen a different version. Thus, use of this model by third party engineering company Hidrodizayn is very normal for us.	The justification is found satisfactory. The clarification request is closed.
CL36- The utilization rate is taken as 48,60% as given in the feasibility study, please justify your choice by giving objective references from the industry and/or scientific studies.	Table 3 1.p	As it is mentioned in feasibility report; energy calculation was done according to water supply value. If the selected value 90MW was worked 8769 hours per year, we can able to obtain 788.400.000Kwh energy. When we compare this value with 383.000.000kWh which is calculated as a result of business activities, from this rate 383 / 788,4 =0,486 will be find. Please find Section 12-2 in feasibility report.	The explanation is found satisfactory. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
CL37- The average yearly generation is taken as 383 GWh in both the feasibility report and the IRR calculations, however in the generation license, this value is given as 330 GWh. Under section 1.9 of the VCS PD version 01, it is stated that the project will generate 335,03 GWh annually. Please clarify why there is a difference between these values and please clarify which will be the real figure. Please also show the calculation details for the average annual generation figure in the PD.	Table 3 1.p	In the feasibility report the calculation of energy producing was 383Gwh then release water amount has been changed to 2,8 m3/s so increasing this amount effects (decrease) the energy generation capacity. Please find the attachment # 7 about this calculation.	The details of the calculations were reviewed by the validation team. Taking the higher production value results in a more conservative IRR calculation. The clarification request is closed.
CL38- From the feasibility study it is seen that the assumptions used for the calculations are made by using 2005 DSI (State Hydraulic Works) unit prices. Please send objective evidence from DSI showing that these unit prices were valid at the time of calculating the assumptions.	Table 3 1.p	Mutually agreed about this item. **Response to Review 1:** According to the interviews made with the validation team, it has been concluded that the feasibility report which was submitted to the validation team is the basis for the calculations by using DSI unit prices, therefore this assumption can also be reflected to the calculations.	**Review 1:** Please include your justifications in the validation protocol. The clarification request is still open. **Review 2:** The feasibility study is taken as the basis of the investment decision. Hence the data from the feasibility study can be reflected to the IRR calculations. The clarification request is closed.
CL39- Under section 7 of the PD version 01 that the date of contract signature for the electrical works is given as December 4th 2006. Please send a copy of this contract as a proof of the investment decision date	Table 3 1.p	After the site visit we had sent the board decision documents and also we have mentioned these dates in page 50 & 51 of PD document.	The investment decision date is taken as the date of the feasibility report which is May 2005. The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
CL40- The license fee is estimated to be 20.000.000,- USD please send an objective evidence of the realized license fee as it makes up 14% of the total investment cost.	Table 3 1.p	Please find the attachment # 6. **Response to Review 1:** Akım Enerji paid for Cevizlik HEPP project License 20.892.650YTL+VAT(18%) and total amount was 24.653.077YTL. As it is seen from the guarantee letter that the first payment was 50.000YTL, No: 003205000146 from Yapı Kredi Bank, was given in 21.09.2005. The rest of the balance's , 20.842.650YTL performance bond was given in 14.11.2005, as refer to PD Version03 in page #97 Also related letter from EMRA no 2782, is included in PD version3 page#91 The total amount was (20.843.650+50.000+18%) 24.653.077YTL, In 2005 exchange rate was 1$ equal to 1,35YTL so 24.653.077YTL was equal to 18.261.273$ which was paid to EMRA for Cevizlik HEPP license. Please refer to change in Pages # 91 to 98 PD Version03.	**Review 1:** The attachment 6 that was sent is the performance bond which was sent to EMRA. The value on this performance bond is 20.842.650,-YTL which makes around 15.439.000 USD. However this value was given as 18.29 million USD in the VCS PD. Please clarify. Please also send the letter dated 08.11.2005 in which EMRA officially informed Akım Enerji of the result of the bid and asked to complete the formalities and necessary documentation. The clarification request is still open. **Review 2:** The explanations have also been cross-checked with the documentation given in PD version 03. The clarification request is closed.
CL41- For depreciation times of license (15 years), construction (40 years) and electro	Table 3	The link references depreciation times www.alomaliye.com/vuk_gen_teb_333.	The depreciation times were reviewed by the validation team.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
mechanics (15 years), please give reference from Tax Procedural Law Communiques (Vergi Usul Kanunu Tebliğleri) as an objective evidence.	1.p	htm	The clarification request is closed.
CL42- Please explain why transmission loss is taken as 2.5% by giving objective evidences.	Table 3 1.p	The link references transmission loss www.teias.gov.tr/istat2004/33.xls **Response to Review 1:** This is a calculation to understand the degree of the figure not to use the outcome as an input to the IRR calculation. Therefore, in our view it is important to show that the used loss figure is in line with realized figures.	**Review 1:** The transmission loss for the years 2004 and 2005 are given as 2,4% in the given link. Please revise your calculations accordingly. The clarification request is still open. **Review 2:** The transmission loss is taken as per the feasibility study which is taken as a basis for the investment decision. The clarification request is closed.
CL43- Please send detailed information about the short term borrowings including objective evidences	Table 3 1.p	Since only the machinery and construction costs are financed and for other operational costs, the project financing in financial feasibility (with long-term financing) is assumed as short-term loan. **Response to Review 1:** Reviving the financial feasibility report more thoroughly, we've noted that the report was prepared in accordance with the generally accepted Project finance principle which usually takes into consideration funding of Machinery &	**Review 1:** In the feasibility study no reference can be found regarding the short term loans. Please clarify. The clarification request is still open. **Review 2:** According to the tool the investment analysis shall be made using the data at the time of investment decision. As the feasibility study is taken as a basis of the investment decision, the short

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		Equipment and construction costs. However, it does not take into account funding of the interest during construction along with the operational expenses. Since there is cash requirement after we plugged in all cash sources, we had to either fund cash shortage through equity or short term loan. If we had used more equity than the Equity IRR would have been lower which makes the Project less feasible. We had used short term loan instead. Having said that, the impact of the short term loan is very insignificant for equity IRR. **Response to Review 2:** Although there is no information about short term borrowings in the feasibility report, the negative annual cash flows must be financed in the projections through either borrowings or equity. Leaving negative cash flows without financing would not be realistic. Therefore, the presented IRR calculations include short term borrowings as an assumption that the negative cash flow will be financed through short borrowings. Please see the related part in	term borrowings can not be included in the calculations. Although it may not have a big impact on the IRR calculations, the short term borrowings shall be taken out of the calculations to be in line with the tool as they are not referred in the feasibility study. The clarification request is still open. **Review 3:** Financing the negative cash through short term borrowings can be acceptable. The clarification request is closed.

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		recalculated IRR calculation interest(deposit) rate is decreased from 5% to 3 %.	
CL44- Although it is stated that the loan has 10 years payback period, please clarify why interest expenses are paid until 2055?	Table 3 1.p	While running the model, the iteration should be open. If you are using MS 2007 from "Excel Options", "Formulas", " Activate the Iterative Calculation" and if the Iteration number is set to 100, the model works healthier. Please find the re-calculated version.	In the revised calculation sheet the loan payback period is revised as 10 years. The clarification request is closed.
CL45- On raw 133 of the financial analysis without carbon sheet, for long term loan, the principal loan amount (96,075) is not the same with the sum of the repayments (82,350). Please clarify.	Table 3 1.p	Please find the re-calculated version.	The value is revised in the new calculation sheet. The clarification request is closed.
CL46- Country Risk: In this barrier it is stated that Turkey has a high risk profile both financially and security-wise. And it is stated that *"investors are not particularly appealed to investment projects in Turkey especially when long-term financing is required."* However the investor is a Turkish company and they have many similar investments in the energy field. This is apparently not a specific barrier for this project activity. Please clarify.	Table 3 1.v	Instead of" investors" please replace it with "banks" we have also corrected in the PD Version 02, page#24. **Response to Review 1:** Yes it is true that the project had received a loan with 12 years payback period. But it is obvious that receiving a loan with a long payback period was a risk for the investor at the beginning of the project. The investor had to give the investment decision under the information set where the availability of long payback loan was not clear.	**Review 1:** Although in the PD version 02 the sentence is revised, it is still not a specific barrier for this project activity. As the project was able to obtain a loan with a repayment period of 12 years, this can not be considered as a barrier for this project activity. The clarification request is still open. **Review 2:** This can not be considered as a barrier

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
		Therefore, it was a barrier for the project during the decision making process. **Response to Review 2:** The barrier has been removed from the analysis.	for two main reasons: 1. In the feasibility study an assumption of receiving a loan with 10 years payback period was made, this may be a risk but it is obvious that in the end the project owner had received a loan with better conditions, and this risk did not prevent the implementation of the project activity. 2. The country risk premium has already been added to the benchmark value in the investment analysis to show that the project faces investment barriers. Therefore this can not be considered as a barrier, please delete this barrier from the PD. The clarification request is still open. **Review 3:** The subject barrier is not included in the PD version 04. The clarification request is closed.
CL47- The footnote #13 which is given as a reference source for the statements given in the above barrier can not be reached. Please check the references once again and give	Table 3 1.v	The footnote# 13 has been changed and renewed in PD.	The clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in tables	Summary of project owner response	Validation team conclusion
publicly reachable references.			
CL48- National Grid System Usage Fee: In this barrier it is stated that the system usage fee is based on installed capacity of the power plant and HEPPs suffer from this regulation because they work on 40% capacity on average whereas thermal power plants work on up to 80% of their capacity. Please provide objective evidence to prove these statements.	Table 3 1.v	http://www.epdk.org.tr/duyuru/elektrik/baglanti/baglanti.html http://www.nukte.org/files/elektrikenerjisektoruraporu.pdf "Table 6 page#6/29" http://www.biltek.tubitak.gov.tr/bdergi/yeniufuk/icerik/enerjidosyamiz.pdf Page# 5 /16 Please refer to Table 30 in PD version02. *"Running Hours By Primary Energy Resources And The Electric Utilities"* **Response to Review 1:** The barrier is one many barriers that collectively put impediments on the realization of the project. Therefore it is preventive. One of the alternatives which is defined as credible is getting the electricity from the grid itself which is heavily dependent on thermal power plants. Therefore, the usage fee creates a barrier for the project compared to an alternative.	**Review 1:** The given table and references have been reviewed. However under Step 1 while the alternatives were being identified thermal power plant was not considered to be a realistic alternative, therefore comparing the project activity with a non-realistic alternative does not comply with the methodology. Also this is not a preventive barrier for the project activity. While performing barrier analysis please give objective evidences on how the identified barrier will prevent the implementation of the project activity. Please define if this type of barrier has ever prevented the implementation of a similar project activity. The clarification request is still open. **Review 2:** Although the system favours conventional power plants, investors that are considering to invest on hydro power plants know this fact before starting their investments. This issue can not be considered as a barrier that prevents the implementation of the

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		Even though this barrier is referred to conventional power plants, it clearly shows that the National Grid System Usage Fee is a barrier that prevents the implementation of this type of proposed project activity by favoring conventional power plants over renewable power plants. Please refer to the PDD Version 3, where the following sentence has been added: *"By clearly favoring conventional power plants over hydro power facilities, this system blatantly discourages the investment in hydro power plants preventing the implementation of this type of project activity".* **Response to Review 2:** We strongly believe that this is an important barrier for renewable energy projects. Knowing that there is such a barrier does not change the fact that there is such a barrier. However, the title is removed from the PD version 4.	project activity. The clarification request is still open. **Review 3:** The subject barrier is taken out in the PD version 4. The clarification request is closed.
CL49- Price Cap for Renewable Electricity: In this barrier it is stated that the renewable energy	Table 3 1.v	Mutually agreed about this item.	**Review 1:** Please include your justifications in the

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law gives a minimum purchase guarantee of 5 €¢ and caps the purchase price at 5.5 €¢. The banks consider the minimum purchase guarantee for providing the loans, therefore the project had extreme difficulties to obtain non-recourse financing from banks due to low guaranteed electricity price compared to all risks attached to the project. Please give detailed information about the difficulties the project owner has faced during the financing stage, by giving objective evidences. Please also give objective evidences to prove the statements under this barrier.		**Response to Review 1:** According to the interviews made with the validation team, it has been concluded that there was no price guarantee for renewable energy projects when the decision was taken. Therefore, using price guarantee as an input would not be appropriate according to tool. Even if we use the minimum purchase price of 5 eurocents (equivalent to almost 6,3 USD cents in 2005) , the Project equity IRR is still lower that the Equity IRR. Apart from these, banks are currently challenging the definition of "guaranteed" price and some lawyers argue that this is not indeed the guaranteed price. This is because 1) as the distribution companies are beng privatized, there will be significant change in the risk profiles of the distribution companies. In other words, there will be a potential solvency risk of the distribution companies 2) There is still potential risk that, if one generating company offers to sell below 5 eurocents it would also be possible that both producer and distribution company may mutually agree on lower price	validation protocol. The clarification request is still open. **Review 2:** This explanation was also made in the IRR analysis section, the barrier "Price cap for renewable electricity" has been taken out of the PD version 03. The clarification request is closed.
CL50- Long payback period: Under this barrier it is	Table 3	Please find the related links about Nuclear power generation plants 15	**Review 1:**

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stated as follows: *"Access to local finance is low and project developers have to turn to the international market to fund their projects. The first problem encountered by project developers relates to the IRR that investors can accept for hydropower projects in Turkey – and even more within a context of financial crisis, credit crunch and global market collapse.* *Hydropower plants require a high level of financing at the initial stage and have long payback periods. The "Law on Utilization of Renewable Energy Sources for the Purpose of Generating Electrical Energy", provides guaranteed electricity price only for 10 years, whereas the repayment period of the loan is 12 years. Thus there is a strong risk exposure for a period of 2 years that is not yet covered. Furthermore, the government has incentive plans for other power generation plants such as coal fired, liquid fuel fired, and nuclear power plants. For instance, for nuclear and coal fired power plants the government offers 15 years of purchase guarantee, and for liquid fuel fired power plants a tax exemption is considered, making these kinds of investments more attractive for investors."* Please provide objective evidence and/or literature reference to prove the above mentioned statements.	1.v	years purchase guarantee. http://www.haberler.com/bakan-yildiz-nukleer-santral-ihalesi-son-bir-ayda-haberi/ http://www.tetas.gov.tr/search.aspx?valuesearch=n%c3%bckleer&setdeger=1&valuesid=0&values=0 **Response to Review 1:** Long payback period is deleted and The loan maturity is 10 years (3 years grace + 7 years repayment). Long payback period is also the result of the lower equity IRR. These two parameters move in line. In other words, if equity IRR less than required so is the payback period.	Please also send evidence showing that the loan repayment period is 12 years. The clarification request is still open. **Review 2:** The long payback period barrier is taken out in the PD version 03. The clarification request is closed.

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CL51- Legal and Bureaucratic Barriers: In this barrier the legal structure in Turkey is explained and it is stated that the project developers must go through long waiting processes in order to obtain the legal permits. A time schedule showing the steps project owners had to go through has been given in a table form. Please provide scanned copies of the letters sent to and from EMRA and DSİ, that are listed in the table. Please provide scanned copies of the references that are given in the footnotes 16,17,18,19. The information given in the reference website in footnote #20 does not relate to the statement given under this reference please clarify. Please cross-check the reference given in footnote #23 with the statement related to that footnote. According to the reference given in this footnote the share of private hydro in total hydro capacity of Turkey is a different percentage.	Table 3 1.v	The link references related footnotes Footnote #16 is changed to #30 http://www.planbleu.org/publications/atelier_energie/TR_National_Study_Final.pdf (40/104) Footnote # 17 is changed to #31 http://www.iea.org/textbase/nppdf/free/2005/turkey2005.pdf Footnote # 18 is changed to# 32 http://www.iea.org/textbase/nppdf/free/2004/renewable1.pdf http://www.legal500.com/assets/images/stories/firmdevs/gune13376/renewable_energy_market_opportunities_and_legislation_in_turkey.pdf Footnote #19 is changed to #33 http://www.planbleu.org/publications/atelier_energie/TR_National_Study_Final.pdf (50/104) Please also check other links for to support footnotes. Footnote # 20 is changed to #34 and link is not necessary and deleted. Footnote #23 is changed to #38, this is an assumption that autoproducers, production companies and ADUAS as private companies, their total installed	The links and references have been revised in the VCS PD version 02. The clarification request is closed.

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		capacity is 18% of EUAS' total installed capacity for Hydro's.	
CL52- Under sub-step 4a please give the reference source for Table 7, and please also include the HEPPs that were put into operation in the years 2007 and 2008. Please give a list of HEPPs that are currently operational and under construction at the eastern black sea region and compare the proposed project activity with those projects. Please give detailed information describing what aspects of the proposed project activity differs it from the project activities that are present in the region.	Table 3 1.æ	Please find the attachment # 4	The project owner has presented a letter from the State Hydraulic Works stating that the project is the fist run-off river HEPP with over 90 MW capacity and with a power house that is built underground. This document is used as an evidence to prove that the project is not common practice. The clarification request is closed.
CL53 – According to recent news there is an ongoing trial about the place of the transformer station of the project activity. The court has granted a motion for stay of execution of the project activity until the court has finalized. The PP has no control over the place of the transformer station and this place is decided by TEIAS officials. Please send the court's decision to the DOE to show that the project is in line with the legal requirements.	-	During the trial, experts from Hacettepe University which is located in the capital city Ankara; have been consulted by the court. The report of these experts which is given below, was submitted to and reviewed by the validation team: - The report prepared by Prof. Dr. Şinasi Yıldırımlı (Biologist), Assoc. Prof. Selim Latif Sanin (Environmental Eng.) and Assoc. Prof. Mustafa Türker (Surveying Eng.) from Hacettepe University dated 02.05.2010 which was	The decision of the Rize Administrative Court dated 13.05.2010, ruling in favor of the project proponent was sent to the validation team as a proof of compliance. The clarification request is closed.

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		sent directly to the court. According to these expert opinions the court has decided on 13.05.2010 to abolish the motion for stay of execution of the activity they granted previously. This has also shown that the forestry permit and the selection of the location of swithcyard platform which was decided by the TEIAS officials are in line with all legal requirements. After this court decision, there has been no legal obstacle in front of the project to prevent it from operating.	
CL54 – Please clarify the following points that have been raised during the Internal Technical Review of the proposed project activity: 1. Under section 1.6 of the VCS PD it is stated that the crediting period will be renewed once. Please confirm that the total crediting period will be 20 years. 2. Emission reductions have been calculated as 48,007 tCO2 for 2010 in the PDD. However it is 137,164.7 in the baseline calculation sheet. Also it is 157.740 for 2020 in the PDD but 68,582.4 in the baseline calculation sheet. Please clarify. 3. In the BM calculations, the efficiency computations are based on total power		1. The sentence "(Total crediting period: 20 years)" is added after the expression under Section 1.6 of the VCS PD. 2. The table is corrected. Since the commissioning date of the project is May 29th 2010. The table is revised accordingly. Expected VER volume is 111,456 tCO2e (for 217 days to the end of year 2010) and 76,015 tCO2e (for 148 days from beginning of the year 2020 to 30.04.2020) 3. The BM calculations are revised as suggested in the methodological tool. The default	1. In the VCS PD version 6 it is stated that the total crediting period will be 20 years. 2. The emission reduction values are revised both in the revised PD and the baseline calculation sheet. 3. The BM calculations are revised in the PD version 06. The efficiency factors of power plants are taken from the default values given in Annex 1 of the "Tool to calculate emission factor for an electricity system". The efficiency factors selected are on the conservative side and are accepted by the validation team. 4. $PE_{FF,y}$ is taken out from the

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generation data. However, the Build Margin refers to *"the set of capacity additions in the electricity system that comprise 20% of the system generation and that have been built most recently"*. The efficiency of new plants is typically higher than old ones. However the calculations include both the new plants and the old plants that are operational in the years of calculation (i.e. all of the thermal power plants supplying the Turkish grid) Therefore, this approach does not result in a conservative estimation of the efficiencies and may lead to higher figures in emission reductions. Please use the default efficiency values for new units (built after 2000) given in the TOOL be employed. 4. The fossil fuel consumption ($PE_{FF,y}$) is also included in the monitoring plan. Please also include the parameters that are given in the tool, and describe how these parameters will be monitored in the monitoring plan.		efficiency factors for new units (after 2000) given in the Appendix-1 of the tool are used for each fuel types. Since there is no default value for naphta and lpg, to be on the conservative side, the efficiency factors for these type of power plants are assumed as 60% which corresponds to the efficiency factor for natural gas fired power plants (combined cycle) Baseline Calculation excel sheet and the explanations in the VCS PD are corrected accordingly. 4. $PE_{FF,y}$ is taken out from the Monitoring section of the VCS PD.	monitoring plan in the PD version 06, which is in line with the methodology as the project emissions from fossil fuel consumption is negligible for HEPPs. The clarification request is closed.