Voluntary Carbon Standard 2007.1
Validation Report

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Validation Report:

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Validation Report for "Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey"	Ashok Mammen
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Limak Yatirim Enerji Uretim Isletme Hizmetleri ve Insaat Anonim Sirketi	"Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey"

Summary:

Bureau Veritas Certification has made the validation of "Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey". The project activity involves the installation of a 82.0 MW hydro electric power plant (HEPP) located on the Munzur River in the Eastern Anatolia Region of Turkey, within the province of Tunceli. 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 151,211 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 11 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 "Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey" 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 an 82.0 MW hydroelectric power plant (HEPP) on the Munzur River in the Eastern Anatolia Region of Turley, within the province of Tunceli. The project comes under Type I – Renewable Energy Project as per Appendix B of the procedures for CDM project activities. Although it is stated in the energy production license of the facility that the expected average electricity production is 322 GWh, the annual power generation figure is assumed to be 318 GWh for the years between 2009 and 2018. This was due to the fact that the production figure in the license is an average figure which can not reflect the fact that the production figure will increase after the construction of another project at the source side of Uzuncayir HEPP. The main purpose of the project is to generate 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 151,211 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 Limak Yatirim Enerji Uretim Isletme Hizmetleri ve Insaat Anonim Sirketi (LIMAK) and additional background documents related to the project design and baseline, i.e. relevant Law, VCS Project Description Template, Approved Methodology and tools under the CDM of Kyoto Protocol, Clarifications (CL) and Corrective Action Requests (CAR) on validation requirements were reviewed.

To address Bureau Veritas Certification corrective action requests and clarification requests, LIMAK revised the PD several times, PD version 06 being the last version, which was submitted to the validation team on 07.12.2010. After further clarifications all corrective action requests and clarification requests were closed in 07.12.2010.

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 June 2010 and October 2010 Bureau Veritas Certification performed interviews with LIMAK 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 11.11.2010 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 LIMAK, which is the project participant, is helping the country in fulfilling its goals of promoting sustainable development with this project. The project is in line with country specific requirements. In addition, the project highly supports the sustainable economic development in the region.

The conclusions of the validation team are as follows:

- *The technology used:*

Uzuncayir HEPP project entails the construction and operation of an 82.0 MW hydroelectric power plant (HEPP) in the Eastern Anatolia Region of Turley, in Munzur River Basin in the province of Tunceli, Turkey. In the powerhouse, three Francis type horizontal turbines were installed each with the capacity of 28 MWm; the total capacities of the turbines are 84 MWm and 82 MWe. The altitude is 845 m at powerhouse location. The efficiency of the turbines is 90.53%. There are three generators attached to the facility. Generators pursue power factor of 0.9 d/d, a frequency of 50 Hz and an output of 31 MVA.

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

- Two derivation tunnels (398 meters and 468 meters)
- Two coffer dams
- One spill weir
- One rock-fill dam
- Power house with Francis type horizontal turbines

The net electricity delivery to the grid by the project is estimated to be 322 GWh per annum. The quantity of electricity required for operation of the plant is around 3.066 GWh per annum internally

The technology used in the plant is a state-of-the-art technology with extensive automatization. In addition to this, the equipments that are used in the project are all first-hand equipments. There is no new technology, which is expected to replace the plant's technology in the short run, and the expected life of the equipment is around 20 years. The project does not need extensive initial training and maintenance efforts in order to work as presumed during the project period. Necessary trainings to the plant staff was provided by the supplier right after the installation of the electro mechanic equipments in line with the agreement between the project owner and the supplier. The agreement between the supplier and Uzuncayir HEPP has been reviewed by the validation team. The related training records were verified during the site visit.

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*

Uzuncayir HEPP consists of 3 unit turbines. Each unit has an output capacity of 27.33 MWe. The project activity is implemented in 3 phases. On 02/12/2009, the power plant started operation with 1 turbine, on 28/01/2010, 1 turbine was commissioned and on 12/04/2010, the remaining 1 turbine was commissioned. Since 12/04/2010, the HEPP is fully operational. Each commissioning date was validated through the TEIAS records. First index determination reports approved by TEIAS were submitted to the validation team.

The carbon crediting period and therefore the monitoring starts when the plant commences electricity generation. Therefore, the crediting period starts on 02/12/2009 and the first crediting period will be completed by 01 December 2019. The crediting of the project will be renewed for 10 years for the second time after the completion of the first period. The total crediting period is twenty years.

The expected life time of the project is, starting from January 2007, minimum 49 years which corresponds to the life time of the license obtained from

EMRA. However, the equipments may be renewed, as recommended by the supplier, in years 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*

At the first stages of the validation the generation license was belong to Limak Insaat Sanayi and Ticaret Anonim Sirketi. The generation License was transferred to Limak Yatırım, Enerji Uretim Isletme Hizmetleri ve Insaat Anonim Sirketi on 26.08.2010. A copy of the generation license is given in Annex 2 of the PD.

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

- *Eligibility of the project activity under VCS*

The project comes under Type I – Renewable Energy Project as per Appendix B of the procedures for CDM project activities. The project is an 82.0 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 "Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey" project is established by using the UNFCCC official methodology ACM0002, version 11, 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 02 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.

The PD was submitted on 12 April 2010. 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 11*** is justified as the proposed project activity meets relevant applicability criteria:

- Uzuncayir 82.0 MW HEPP Project is a grid connected renewable power generation project which adds electricity capacity from hydro power sources and which supplies electricity to a system that is supplied by at least one fossil fuel fired generating unit,

- The project activity results in a reservoir. But the power density of the power plant, as per definitions given in the Project Emissions section of ACM0002 version 11, is less than 10 W/m^2 but more than 4 W/m^2 as calculated in section 1.3 "Estimated amount of emission reductions over the crediting period including project size" of the PD,
- The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available as proved in section 2.4 "Description of how the baseline scenario is identified and description of the identified baseline scenario" of the PD,
- The project does not involve switching from fossil fuels to renewable energy at the site of the project activity,
- The project involves construction of new units in a brand new plant, in other words the project does neither involve the addition of renewable energy generation units at an existing renewable power generation facility nor does it foresee to retrofit or modify an expired facility of renewable energy generation.

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 ACM0002 version 11 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: Construction of a thermal power plant with the same annual power output

Alternative 2: The proposed project activity not undertaken as a VER project activity

Alternative 3: Construction of some other renewable energy plant with the same annual power output

Alternative 4: The same service of power supply is provided from the grid (Uzuncayir HEPP is not built)

From the above mentioned alternatives 1, 2 and 4 are assessed to be realistic and credible alternatives. Alternative 3 is eliminated since the Eastern Anatolia region is not very rich of wind and very steep terrain does not allow for wind power plants.

Analyzing the alternatives that are defined as realistic, it is seen that all scenarios are consistent with the baseline definition of ACM0002 version 11. All of the alternatives comply 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. 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 presentation given to the board of management (April 2007) is taken. This presentation dated April 2007 is the basis of the investment decision. The inputs of the IRR calculation are in accordance with the presentation and in line with the similar projects. The benchmark calculation is given below:

Parameter		Chosen Value	Source
Rf	Risk-free rate	7.58%	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 validataion team. Please see Annex 7 of the PD 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 prominent data provider Bloomberg. Please see Annex 8 of the PD for Betas of these companies.
Rm-Rf	Market equity risk premium	9.41%	http://www.stern.nyu.edu/~adamodar/pc/archives/ctryprem07.xls
Rm	Expected market return	16.99%	-

Hence, the benchmark value is calculated as:

Rf	+	β	x	(	Rm	-	Rf	)	=	Ce
7.58%	+	0,939	x	(	16.99%	-	7.58%	)	=	16.41%

The benchmark is calculated using a globally accepted 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 presentation given to the board of management was submitted to the verification team. This presentation dated April 2007 is the basis of the investment decision. The inputs of the IRR calculation are in accordance with the presentation and in line with the similar projects.

Unlike many other Hydro Electric Power plants which are calculating the IRR for 20 years, the project proponents have calculated the IRR for 49 years from 2007 to 2056 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 IRR of the project activity is around 2.3% without the VER revenues. Taking VER revenues into consideration, the Equity IRR increases to 2.5% with 3 €/ton VER price, 2.6% with 4 €/ton VER price and to 2.7% with 5 €/ton VER price. The IRR with VERs remains lower than the financial benchmark of 16.41%

In the IRR calculations, the annual power generation of the proposed project activity is taken as 318 GWh. This production figure was taken from presentation given to the board of management to be able to reflect the situation during the decision making process. Although it is stated in the energy production license of the facility that the expected average electricity production is 322 GWh, the annual power generation figure is assumed to be 318 GWh for the years between 2009 and 2018.

The electricity sales price is taken as 0.05 Eur/kWh, which is the minimum purchase guarantee of the State. This price is also given in presentation given to the board of management, which is a basis for the investment decision. 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.

The presentation dated April 2007 and that is the basis of the investment decision given to the board of management was submitted to the verification team. The inputs of the IRR calculation are in accordance with the presentation and in line with the similar project. The Board Decision dated 26/04/2007 was submitted to the validation team that is the basis of the investment decision.

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

Parameters	Validated Value	Means of validation
Grid connected output	By 2019 : 318 GWh After 2019 : 322 GWh	The presentation given to The Board of Management This value was also validated through the generation license and feasibility study report.
Electricity sales price	0.05 €/kWh	The minimum purchase guarantee of the State
Depreciation periods	Equipment : 35 years Construction : 49 years	Local rules and regulations
DSI Contribution	0,031 €/kWh	The presentation given to The Board of Management This value was also validated through the Water Usage Agreement with DSI.
Equipment Costs	2007 : 4.998.571 € 2008 : 11.663.331 € 2009 : 13.329.521 € 2010 : 3.332.380 € **Total : 33.323.804 €**	The presentation given to The Board of Management The estimated equipment cost was compared with the actual price and there is no big difference between two prices.
Construction Costs	2007 : 3.034.552 € 2008 : 11.448.563 € 2009 : 8.708.044 € 2010 : 911.162 € **Total : 24.102.321 €**	The presentation given to The Board of Management An assumption excel sheet was provided for the estimated construction costs. There is no proposal and/or sub-contractor agreement since the construction was done in their self. The values given in the excel sheet was compared with similar projects and found acceptable. Also, the construction cost rate is small since the project was taken over when the construction was almost finalized. Even the construction costs is taken as zero, the Equity IRR is still under the benchmark value.
Other Costs (Comissions and Interest)	2007 : 3.343 € 2008 : 1.402.619 € 2009 : 3.368.990 € **Total : 4.774.952 €**	The presentation given to The Board of Management An assumption excel sheet was provided for the estimated commissions and interest. The values was validated through the public available data and found acceptable.
Loan	Amount : 51,040,071 € Interest : 7% Tenor : 5 years	The presentation given to The Board of Management The estimated loan amount was compared with the realized loan. The realized loan is less than the estimated value.

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

- Investment Costs
- Energy Production
- Electricity Sales Price

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

According to this sensitivity analysis;

When the investment costs decrease 10%, the IRR of the project activity rises up to 2.25% without VER revenues and up to 2.71% with 5 €/ton VER price. The IRR value decreases with the rise of the investment costs down to 2.23% without VER revenues and 2.69 with VER revenues at 5 €/ton VER price.

When energy production raises 10%, the IRR of the project activity rises up to 3.17% without VER revenues and up to 3.75% with 5 €/ton VER price. The IRR value decreases with the decrease of the electricity price down to 1.33% without VER revenues and 1.69% with VER revenues at 5 €/ton VER price.

For the electricity price, variation on energy production was also applied in a bandwidth of +10% and –10% on the secondary energy production which reflects the volatility in calculations. Bandwidth of -10% and 0%, part of the production reflects the electricity production that is 90% guaranteed amount. Therefore no sensitivity was applied to this part. When prices increase 10% the IRR goes up to 4.53% without VER and up to 5.16% with 5 €/ton VER price.

The above sensitivity analysis reveals the fact that no alternative scenario without VER revenues can make the project pass the benchmark IRR expectation which is in 16% to 18% range.

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

- Social Barriers:

  Security Sensitive Investment Region and Transportation Problems:

  The project is located in the South East Anatolia Region. It is explained in the PD that the president of TUSIAD that is the largest employer organization in Turkey declares that making investment in South East Anatolia Region is insufficient infrastructure due to security issues. In addition, the Minister of Industry and Trade also confirms this statement in one of his interview and says that the investors can only gropingly enters the East and south East regions of the country because of the security problems and lack of infrastructure. The Minister gives marble reserves in the region as an example as these reserves cannot be utilized due to security problems. These statements were validated through the references given in the PD.

  Due to security issues, Tunceli was managed under state of emergency rules for 15 years (1987-2002). In 2010, 35 terrorist incidents have occurred in Tunceli according to the General Staff of Turkish Army records. In the neighbor provinces (Elazig, Bingol and Erzincan), the total number of terrorist incidents is 27. In addition, overall number of terrorist incidents in East and south East Anatolia was 508 only in 2010. All these facts show that the region in which the project is located is not secure for such an investment. These statements were validated through the references given in the PD.

  In the region, it can be seen that there is not any other comparable project as far as the technology and size are concerned. In Tunceli and its neighboring cities (Elazig, Erzincan and Bingol), there are 9 comparable projects. However, only one project is close to completion other than Uzuncayir HEPP.

However this project (Konaktepe HEPP) is owned by public. Therefore, the Project proves to be the only private project with a reservoir that is close to completion. These statements were validated through the web site of EPDK (EMRA-Energy Market Regulatory Authority).

The barrier listed above has been assessed by the validation team. The validation team has concluded that these barrier are valid and possess high risk for the proposed project activity.

The common practice analysis:

Under the common practice analysis section of the PD, hydro projects with similar installed capacity in the same region are compared to the proposed project activity. There is only one similar project (Tatar HEPP) in the region that is at the construction stage. Tatar HEPP belongs to same investor and is planned to benefit from carbon revenues. It was validated through the given reference (footnote 41, given in the PD) Electricity Market Regulatory Authority web site.

It was validated through the Electricity Market Regulatory Authority web site that there is not any other comparable project as far as the technology and size are concerned. In Tunceli and its neighboring cities (which are Elazig, Erzincan and Bingol) there are only 9 comparable projects which have installed capacity larger than 50 MW. However, only one project is close to completion other than Uzuncayir HEPP that is owned by public.

Also an analysis of the HEPPs in Turkey is given. It is stated that the number of projects that are close to completion is very low (only 57 projects out of 477 were completed more than 50% as of now) since the barriers elaborated above and proves that the electricity generation from HEPP business is not a common practice. The completion ratio of the projects was checked from the HEPPs processing report prepared by Electricity Market Regulatory Authority (footnote 42, given in the PD). The values given in the PD are in accordance with the reference.

The hydroelectric power plants put into operation between 2002 and 2007 is given in a tabular form in the PD and this shows that the new privately owned hydro facilities represents only 2.3% of new additions. Similarly, new additions from privately held hydro projects represents only 0.1% of Turkey's installed capacity in the last 6 years. It is not common that private sector investment to HEPP in Turkey. This statement was validated based on the statistics of Turkish Electricity Transmission Company given as reference in the PD.

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 11 is applied. All the applicability conditions of the monitoring methodology are the same as the applicability conditions of the baseline methodology that are given under section 3.2 of this validation report. The 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, and this parameter will be the basis for the emission reduction calculations.

According to the methodology ACM0002 version 11, 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
$EG_{facility,y}$	Quantity of net electricity delivered to the grid	Monthly Electricity Meter Reading Records	MWh	Continuous measurement and at least monthly recording	Double check with the grid operators
Cap_{PJ}	Installed capacity of the hydro power plant after implementation of the project activity	Project site	MW	Yearly	Supplier information on the related equipment and existence of the equipment will be checked
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	Project site	m^2	Yearly	The depth readings will be done on daily basis form
$EF_{Grid,CM,y}$	Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of "Tool to calculate the emission factor for an electricity system"	As per the "Tool to calculate the emission factor for an electricity system"	tCO_2/MWh	Once for each crediting period	As per the "Tool to calculate the emission factor for an electricity system"
$FC_{i,y}$	Amount of fossil fuel type I consumed in the project electricity system	As per the "Tool to calculate the emission factor for an electricity system"	Ton (m^3 for Natural Gas)	Once for each crediting period	As per the "Tool to calculate the emission factor for an electricity system"
$NCV_{i,y}$	Net Calorific Value of fossil fuel types	As per the "Tool to calculate the emission factor for an electricity system"	TJ/Ton (TJ/m^3 for Natural Gas)	Once for each crediting period	As per the "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, 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.
   c) Developing, executing, analyzing and improving the VER Monitoring/Reporting Procedures. This includes the crosschecking and consolidation (with multiple sources whenever possible) of the data obtained from the electrical engineers and the accounting manager. He will also record this operation properly to be able to provide it to the DOE during the verification process.
   d) Calculating and report the emission reductions
   e) Organizing in-house seminars to inform and train the company staff to the monitoring procedures

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 322 GWh per annum. The annual baseline emissions amount to 180,191 tCO_2e. The annual project emissions amount to 28,980 tCO_2e. The annual emission reduction is 151,211 tCO_2e. Over the period of ten years, the total amount of emission reduction will reach 1,486,151 tCO_2e. For all calculations, the rounded value of the combined emission factor, 0.5596 tCO_2/MWh is applied.

Uzuncayir HEPP consists of 3 unit turbines. Each unit has an output capacity of 27.33 MWe. The project activity is implemented in 3 phases. On 02/12/2009, the power plant started operation with 1 turbine, on 28/01/2010, 1 turbine was commissioned and on 12/04/2010, the remaining 1 turbine was commissioned. Since 12/04/2010, the HEPP is fully operational.

- 2009

  One turbine was commissioned on 02/12/2009 and generated electricity 29 days in 2009.

- 2010

  By 28/01/2010, one turbine generated electricity. Second turbine was commissioned on 28/01/2010. Between 28/01/2010 and 12/04/2010, two turbines generated electricity. Last turbine was commissioned on 12/04/2010. The project began to generate electricity with full capacity since 12/04/2010.

Year	Electricity Output MWh	Baseline emission reductions in tones of CO_2e	Project emissions in tones of CO_2e	Annual estimation of emissions reductions in tones of CO_2e
2009	8,528	4,772	768	4,005
2010	283,772	158,799	25,539	133,259
2011	322,000	180,191	28,980	151,211
2012	322,000	180,191	28,980	151,211
2013	322,000	180,191	28,980	151,211
2014	322,000	180,191	28,980	151,211
2015	322,000	180,191	28,980	151,211
2016	322,000	180,191	28,980	151,211
2017	322,000	180,191	28,980	151,211
2018	322,000	180,191	28,980	151,211
2019	296,416	165,875	26,677	139,197
TOTAL				**1,486,151**

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

  The Project emissions are calculated with the formula mentioned in ACM0002/Version11. 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} = 82,000,000 W *(Justification: Generation License)*

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

A_{PJ} = 13,400,000 m^2 *(Justification: Feasibility Study Report)*

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

Therefore;

PD = (82,000,000 – 0) / (13,400,000 – 0) = 6.119 W/m^2

Project emissions can not be assumed to be 0. According to ACM0002 Version 11 if the power density is greater than 4 and less than 10 the project emission for hydro plants can be calculated as;

$$PE_{HP,y} = \frac{EF_{Res} \cdot TEG_y}{1000}$$

Where:

$PE_{HP,y}$ = Emission from reservoir expressed as tCO_2e/year

EF_{Res} = The default emission factor for emissions from reservoirs, and the default value as per EB23 is 90 Kg CO_2e /MWh

TEG_y = Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (MWh)

$PE_{HP,y}$ = 322,000,000 * 90/1000 = 28,980 tCO_2e/year

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 transport). These emissions sources are neglected.

The baseline emissions BE_y are calculated as following:

$BE_y = (EG_y - EG_{baseline}) \times EF_{grid,CM,y}$

Where:

BE_y = Baseline emissions (tCO_2e)

EG_y = Annual electricity supplied by the project to the grid (MWh)

$EG_{baseline}$ = Baseline electricity supplied to the grid in the case of modified or retrofit facilities (MWh). For new power plants this value is taken as zero.

$EF_{grid,CM,y}$ = Baseline emission factor (tCO_2e/MWh)

Y Refers to a given year

EG_y = 322,000,000 MWh/year *(Justification: Generation License)*

$EG_{baseline}$ = 0 *(The figure is zero for the project as the project is new)*

Therefore, the expected baseline emission for the full year production of the project is:

BE_y = 0.5596 x (322,000,000 – 0) = 180,191 tCO_2e

Annual estimation of emissions reductions is calculated as follows in line with the ACM002/Version 11:

$ERy = BE_y - PE_y - LE_y$

Where:

ER_y = Emission reductions in year y (t CO_2e/yr)

BE_y = Baseline emissions in year y (t CO_2e /yr)

PE_y = Project emissions in year y (t CO_2/yr)

LE_y = Leakage emissions in year y (t CO_2/yr)

Therefore, the annual emission reduction is estimated as:

ERy = 180,191 - 28,980 = 151,211 tCO_2e

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

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

- *The assumptions made for estimating GHG emission reductions*

  The only assumption is the one about leakage emissions that 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*

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

3.5 Environmental Impact

The project was approved to be implemented in year 1985, way before the EIA concept was born, with the construction to be completed by the State Water Works (DSI, a public body responsible with water project development and application). Hence, the project preparation phase never included an EIA process. When the project owner took over the project in 2007, 99% of the construction had already been completed without an EIA and the project owner was exempt from conducting an EIA because their only duty was to reengineer the equipment design and finish the installation.

The project has "EIA not required certificate" dated 29.11.2007. However, after this date the project capacity is increased and applied to Ministry of Environment and Forestry for review the certificate. The Ministry of Environment and Forestry has confirmed that after the capacity increased EIA is not required for this project. The letter from Ministry of Environment and Forestry has been taken

after the capacity is submitted to the validation team. The letter confirms that EIA is not required for this project.

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

3.6 Comments by stakeholders

Since Limak did not undertake the construction of the project, the company did not hold an official stakeholder participation meeting. However, the project managers had been open to face to face communications with local people in order to solve any problem that the project had caused. The ongoing communication is undertaken through stakeholder visits to the site or direct contact via telephone. For this purpose:

- One of the religiously important visit points was moved to a higher location in order to save the location from remaining under the reservoir water.
- The project provided some construction materials to surrounding villages for their infrastructure needs.
- The project is planning to construct some recreational activity centers around the reservoir.

During the site visit it was seen that, the project provides job opportunities to 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 beneficial for the surrounding villages.

4 VALIDATION CONCLUSION

Bureau Veritas Certification has made the validation of "Uzuncayir 82.0 MW Hydroelectric Power Plant Project, in Tunceli, 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; (June 2010)

ii) Review of the baseline methodology by the specialist and the validator (June-October 2010)

iii) Review of the investment analysis by the specialist and the validator (June-October 2010)

iv) Follow-up interviews and on site visit; (October 2010)

v) Resolution of outstanding issues and the issuance of the final validation report and opinion (June-November 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 12 April 2010 until Version 06 dated 03 December 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 03 December 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 LIMAK that relates directly to the GHG components of the project and other reference documents are given below:

1. PD for "Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey"
   Version 01 dated 12 April 2010
   Version 02 dated 13 June 2010
   Version 03 dated 31 August 2010
   Version 04 dated 01 November 2010
   Version 05 dated 11 November 2010
   Version 06 dated 03 December 2010
2. Baseline Calculation Excel Sheet
   Version 01 dated 01 March 2010
   (Baseline_Uzuncayir_01.03.2010)
   Version 02 dated 31 August 2010
   (Uzuncayir_Baseline_Total_carbon_emission_August2010)
3. Investment Analysis – IRR Calculation Excel Sheet
   Version 01 dated 11 January 2010
   (Limak_Uzuncayir_IRR_11_01_10)
   Version 02 dated 31 August 2010
   (Limak_Uzuncayir_IRR_July_2010)
4. Uzuncayir HEPP Project Feasibility Report dated October 1985 prepared by DSI
5. Uzuncayir HEPP Project Feasibility Report dated October 2007 prepared by LIMAK
6. Water Usage Agreement with DSI, 28 June 2007
7. Water Usage Agreement with DSI, 26 August 2010
8. The presentation given to the Board Of Management, April 2007
9. Board Decision, 26 April 2007
10. Approved consolidated baseline and monitoring methodology ACM0002 version 11.
11. UNFCCC's Methodological Tool: "Tool for the demonstration and assessment of additionality", version 05.2
12. UNFCCC's Methodological Tool: "Tool to calculate the emission factor for an electricity system", version 02
13. VCS PD Template – 19 November 2007
14. VCS Validation Report Template – 19 November 2007
15. 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. Mahmut Kucuk, Power Plant Manager, Limak
2. Mr. Osman Sevincer, Construction Site Security Manager, Limak
3. Ms. Elcin Caner, Project Development Manager, Limak
4. Mr. Taner Ercomert, General Manager of Energy Group Manager, Limak
5. Mr. Gurkan Bayraktar, Carbon Consultant, GAIA Carbon Finance,
6. Mr. Sahin Atik, DSI Tunceli Department Manager
7. Mr. Veli Oz, Burma Village Head
8. Mr. Huseyin Alan, Villager (Burma Village)
9. Mr. Mehmet Seckin, Villager (Burma Village)

ANNEX I – Validators' Competence

Lead Verifier: Ms. Bade Cebeci - Environmental Engineer

Bureau Veritas Certification Lead Verifier

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

Verifier: Ms. Burcu Mutman – Environmental Engineer

Bureau Veritas Certification SAS– Verifier

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

Verifier: Ms. Isil Timuroglu – Environmental Engineer

Bureau Veritas Certification SAS– Verifier

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

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 Gencer – Master of Economics

RiskTürk Software Development and Consultancy – Head of Financial Analysis Team

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

Internal Technical Reviewer: Mr. 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.

ANNEX II - Validation Protocol

TABLE 1 VALIDATION REQUIREMENTS BASED ON THE VOLUNTARY CARBON STANDARD 2007.1

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
1. VCS Program specific issues					
a. Have the project(s) created another form of environmental credit (for example renewable energy certificates)?	VCS	3.1	It has been stated in section 1.13. of the PD that there is no other form of environmental credit generated by the project.	**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 program?	VCS	3.1	It has been stated in section 1.13. of the PD that there is no other form of environmental credit generated by the project. Hence the checklist question is N/A.	**OK**	**OK**
c. Are the VCS PD, monitoring reports, and other documents required under the VCS Program in English?	VCS	3.2	PD and annexes have been presented in English.	**OK**	**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. However, the Methodology ACM0002 version 11 was validated at 26.02.2010 by CDM. Please use the latest version.	**CL01**	**OK**
b. Is the Project Start Date before 1 January 2002? (If yes, a CAR shall be raised as the Project Start Date for non-AFOLU projects for the VCS 2007.1 shall not be before 1 January 2002)	VCS	5.2.1	Starting date of the project is 02/12/2009 as stated in section 1.6. of the PD. The project start date is after January 2002.	**OK**	**OK**
c. Will this validation be completed within two	VCS	5.2.1	Starting date of the project is 02/12/2009. The	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
years of the Project Start Date? If not, was this validation contracted before 19 November 2008? (If yes validation shall be completed by 19 November 2009 and proof of contracting prior to 19 November 2008 shall be provided)			validation will be completed within two years of the Project Start Date.		
d. Is the earliest Project Crediting Period Start Date under the VCS 2007.1 28 March 2006 for non-AFOLU projects and 1 January 2002 for AFOLU projects?	VCS	5.2.1	The checklist question is N/A as the Project Crediting Period starts on 02/12/2009 as indicated in section 1.6. of the PD. Hence the checklist question is N/A.	**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. It has been stated in section 1.13. of the PD that "There is no other form of environmental credit generated by the project because there is no such system within the host country. The projects originate from Turkey do not comply for renewable energy certificates of EU because there is no energy trade between EU and Turkey because of different grid structures."	**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	VCS	5.2.1	There is no other form of environmental credit generated by the project because there is no such system within the host country. The projects originate from Turkey do not comply for renewable energy certificates of EU because there is no energy trade between EU and Turkey because of different grid structures. It has been stated in section 1.13. of the PD. Hence the checklist question is N/A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
program) equivalent to the reductions or removals generated by the project have been cancelled from the program; or national cap as applicable or; purchase and cancellation of GHG 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. There is no other form of environmental credit generated by the project because there is no such system within the host country as stated in section 1.13.	**OK**	**OK**
1. Was this project rejected by other GHG Programs?	VCS	5.2.2	The project was not rejected by any other GHG program as indicated in section 1.14. of the PD.	**OK**	**OK**
2. If yes, have project proponents:	VCS	5.2.2	The project was not rejected by any other GHG program as indicated in section 1.14. of the PD. Hence the checklist question is N/A.	**OK**	**OK**
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	The project was not rejected by any other GHG program as indicated in section 1.14. of the PD. Hence the checklist question is 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	The project was not rejected by any other GHG program as indicated in section 1.14. of the PD. Hence the checklist question is N/A.	**OK**	**OK**
3. Is this a renewal of the Project Crediting	VCS	5.2.3	This is the first validation of the proposed project	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
Period?			hence the checklist question is N/A.		
4. If yes, have a VCS Program approved validator determined that the original project baseline scenario(s) and additionality is still valid or has been updated taking account of new data and changed VCS Program requirements where applicable?	VCS	5.2.3	This is the validation of the proposed project hence the checklist question is N/A.	**OK**	**OK**
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	*Please see below.*		
b. be publicly available from a reputable and recognized source (e.g. IPCC, published Government data etc)?	VCS	5.5	The standards and factors used to derive GHG emission data as well as any supporting data are taken from the IPCC and TEIAS which are both publicly available.	**OK**	**OK**
c. be reviewed as part of its publication by a recognized competent organization?			IPCC and TEIAS 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	It has been stated in section 1.2. of the PD that the project is not a grouped project. During the site visit, it was seen that the project activity is not a grouped project.	**OK**	**OK**
b. If yes , was this grouped project described in one VCS PD?	VCS	5.6	It has been stated in section 1.2. of the PD that the project is not a grouped project. Hence 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	It has been stated in section 1.2. of the PD that the project is not a grouped project. Hence the checklist question is N/A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
d. What is the sampling carried out by the VCS verifier?	VCS	5.6	It has been stated in section 1.2. of the PD that the project is not a grouped project. Hence 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	It has been stated in section 1.2. of the PD that the project is not a grouped project. Hence the checklist question is N/A.	**OK**	**OK**
f. Do this project, which intends to apply for the VCS Program VCUs as part of a grouped project also comply with the VCS Program requirements for grouped projects, detailed in the most recent version of the Program Guidelines 2007.1 on www.v-c-s.org?	VCS	5.6	It has been stated in section 1.2. of the PD that the project is not a grouped project. Hence the checklist question is N/A.	**OK**	**OK**
d. Content of the VCS PD					
a. Is the PD used as a basis for validation prepared in accordance with the latest template and guidance from the VCS?	VCS	5.7	The VCS PD template given in the web address www.v-c-s.org is used.	**OK**	**OK**
b. Is there a project title?	PD temp	1.1.	The project title is "Grid connected electricity generation from renewable sources: Uzuncayir 82.0 MW Hydroelectric Power Plant Project, Turkey", date of the document is 11.11.2010 and version of the document is version 05. as stated section 1.1. of the PD. The "Generation License" has been submitted to the validation team as a proof of title and given at the Annex 2 of the PD.	**OK**	**OK**
c. Type/Category of the project	PD temp	1.2	*Please see below.*		
i. Is it defined whether the project category is part of a GHG program that has been approved by the VCS Board?	PD temp	1.2	The project comes under Type I – Renewable Energy Project as per Appendix B of the procedures for VCS project activities. The project	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			is 82.0 MW HEPP and it uses renewable sources to produce electricity. Since the installed capacity of the planned HEPP larger than 15 MW; it is a large scale renewable energy project activity. It has been defined in section 1.2 of the PD.		
ii. Is it specified if the project is a Grouped project?	PD temp	1.2	It has been stated in section 1.2. of the PD that the project is not a grouped project. During the site visit, it was seen that the project activity 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	The amount of emission reductions over the crediting period estimated is including project size. It has been stated in section 1.2. of the PD as the following: "*The expected annual average emission reduction is 153,628 tonnes as stated in Table 1 According to the VCS 2007:1 Guidelines section 5; the project falls into the individual validation and verification of a GHG programme option and the project size is "project" since the expected annual emission reduction is less than 1,000,000 tonnes and more than 5,000 tonnes.*" Please state it in the section 1.3. of the PD.	**CL02**	**OK**
			Under section 1.3 of the PD it is stated that the expected annual generation is 318,000 MWh but according to the generation license annual generation is 322,000 MWh. Please clarify the annual generation of the project activity.	**CAR01**	**OK**
e. Is a brief description of the project provided?	PD temp	1.4	A brief description of the project is stated in the section 1.4. of the PD. • The project had originally been developed by	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			State Water Works (DSI) and the construction of the project activity was started in 1993 by DSI. Project owner took over the project on 12.09.2006. • The project is an 82 MW hydro power plant and has a dam. • Generated electricity is being fed to the national grid.		
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 project is located on Munzur River in the east of Turkey, within the boundaries of Tunceli province. The project is located between the latitudes 39° 06'-39° 58' and longitudes 39° 28'-39° 36'. The location of the project was validated on the site visit. Project drawing and geographic map are included. It is stated in section 1.5. of the VCS PD.	**OK**	**OK**
g. Duration of the project activity/crediting period	PD temp	1.6	*Please see below.*		
i Is the project start date, i.e., the date on which the project began reducing or removing GHG emissions*, provided?	PD temp	1.6	Uzuncayir HEPP consists of 3 unit turbines. Each unit has an output capacity of 27.33 MWe. The project activity is implemented in 3 phases. On 02/12/2009, the power plant started operation with 1 turbine, on 28/01/2010, 1 turbine was commissioned and on 12/04/2010, the remaining 1 turbine was commissioned. Since 12/04/2010, the HEPP is fully operational. Starting date of the project activity is 02/12/2009, when the plant commences electricity generation as stated in section 1.6. of the PD.	**OK**	**OK**
ii Is the crediting period start date, i.e., the	PD	1.6	The crediting period was defined as the following	**CL03**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
date the first monitoring period commenced, provided? (VCS project crediting period: A maximum of ten years which may be renewed at most two times)	temp		in section 1.6 of the PD version 01: "*Starting date of the project activity is April 1, 2010, when the plant commences electricity generation with full capacity. 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 may be renewed at most twice.*" Please clearly state the renewal period and total crediting life for the project activity.		
h. Are the conditions prior to project initiation provided?	PD temp	1.7	Please include the conditions prior to the project initiation in the PD.	**CAR02**	**OK**
i. Is a description of how the project will achieve GHG emission reductions and/or removal enhancements provided?	PD temp	1.8	The project will achieve GHG emission reductions by generating electricity by a HEPP as stated in section 1.8. of the PD.	**OK**	**OK**
j. Are project technologies, products, services and the expected level of activity described?	PD temp	1.9	Under section 1.9. of the PD it is stated that the expected annual generation is 318,000 MWh but according to the generation license annual generation is 322,000 MWh. Please clarify the annual generation of the project activity.	**CAR01**	**OK**
			Regarding to the generation license the capacity of the project is 82 MWe. However, it is stated as 84 MWm. Please clarify.	**CAR03**	**OK**
k. Does the VCS PD include identification of relevant local laws and regulations related to the project and demonstration of compliance with them?	PD temp	1.10	Relevant regulations related to the project are stated in section 1.10. of the PD as follows: "*The general scheme of the regulations this kind of facilities in line with, are defined by The Renewable Energy Law (Law Number: 5346, Acceptance Date: 10.05.2005) and Environmental Law (Law Number: 2872, Ratification Date: 09.08.1983).*"	**CAR04**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			"Generation License" is given in Annex 2 of the PD and "EIA not required certificate" is given in Annex 5. The date of "EIA not required certificate" 29.11.2007. But after this date the project capacity is increased. Please require the new "EIA not required certificate" based on the new capacity. The link which refers to *Environmental Law* (http://www.cevreorman.gov.tr/yasa/k/2872.doc) does not open. Please edit the link.		
l. Are risks that may substantially affect the project's GHG emission reductions or removal enhancements identified?	PD temp	1.11	Rainfall reduction and earthquake are listed as risks that could affect GHG emission reduction capacity. Please give the reference about the region is the first degree earthquake zone. It has been stated in section 1.11. of the PD as follows: "*First of all, decrease of rainfall in the region due to the climate change, could reduce the GHG emission reduction capacity. However, recent studies show that region in which the plant will be commenced is one of the regions which can be least influenced in the country.*" If the region will be least influenced, the earthquake can not be defined as a risk. Please clarify it.	**CL04**	**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	Confirmation that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction has been demonstrated in the section 1.12. of the PD. The project activity involves electricity generation from	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			renewable resources, it does not create any GHGs.		
n. Has the project created another form of environmental credit (for example renewable energy certificates)?	PD temp	1.13	It has been stated in section 1.13. of the PD that there is no other form of environmental credit generated by the project.	**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	It has been stated in section 1.13. of the PD that there is no other form of environmental credit generated by the project. Hence the checklist question is N/A.	**OK**	**OK**
p. Was the project rejected under other GHG programs (if applicable)	PD temp	1.14	The project was not rejected by any other GHG program as indicated in section 1.14. of the PD.	**OK**	**OK**
q. If yes, does the project:	PD temp	1.14	The project was not rejected by any other GHG program as indicated in section 1.14. of the PD. Hence the checklist question is 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	The project was not rejected by any other GHG program as indicated in section 1.14. of the PD. Hence the checklist question is N/A	**OK**	**OK**
ii. provide the VCS verifier and Registry with the actual rejection document(s) including explanation?	PD temp	1.14	The project was not rejected by any other GHG program as indicated in section 1.14. of the PD. Hence the checklist question is 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	Limak Insaat Sanayi ve Ticaret A.S. whose contact details given in section 1.15. of the PD is a project participant. Gaia Carbon Finance whose contact details given in section 1.15. of the PD is not a project participant. In section 1.15. of the PD; it has been stated that the baseline has been developed by Gaia Carbon Finance. Please define the project proponent's roles and responsibilities.	**CL05**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
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	Environmental, economic and social benefits of the project, the troubles with bank loans and the financial necessity of carbon crediting are defined in section 1.16. of the PD.	**OK**	**OK**
t. Is there any commercially sensitive information that has been excluded from the public version of the VCS PD that will be displayed on the VCS Project Database?	PD temp	1.17	It has been stated in section 1.17. of the PD that there is no commercially sensitive information for the project.	**OK**	**OK**
u. If yes, was it listed?	PD temp	1.17	It has been stated in section 1.17. of the PD that there is no commercially sensitive information for the project. Hence the checklist question is N/A.	**OK**	**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	The baseline for the project was established through the official methodology of ACM0002 / Version 11, named "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" as approved by the CDM Executive Board. It has been stated in section 2.1. of the PD. However, there is no reference to tool of the ACM0002. Please refer to tool of the ACM0002.	**CL06**	**OK**
			In the section 2.1., it is written that "*The baseline has developed by Gaia Carbon Finance whose contact details are given in the Section 1.17.*" but the contact details of Gaia Carbon Finance are stated in the section 1.15. Please correct it.	**CAR05**	**OK**
w. Does the project use one of the VCS program approved project methodologies and provide information relevant to methodology deviations	PD temp	2.1	The project proponent has applied CDM approved Methodology ACM0002 version 10 and tools that are referred in ACM0002. However, the	**CL01**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
or methodology revisions?			Methodology ACM0002 version 11 was validated at 26.02.2010 by CDM. Please use the latest version.		
x. Are the choice of the methodology and its applicability to the project activity justified?	PD temp	2.2	Justification of the choice of the methodology and its applicability to the project activity is stated in section 2.2. of the PD. In the PD (power density of the project activity) calculation, A_{BL} (area of the reservoir measured in the surface of the water, before the implementation) has accepted zero. But as indicated in CAR 2, the conditions before the project activity has not been defined. Please give details about the area of the reservoir measured in the surface of the water before the implementation.	**CAR06**	**OK**
y. Are GHG sources, sinks and reservoirs identified for the baseline scenario and for the project?	PD temp	2.3	GHG sinks and reservoirs have been defined in ACM002. The project emissions from reservoirs of hydro power plants has been calculated but it can be changed depend on the power density.	**CAR06**	**OK**
			References: The links as following do not open: http://www.iea.org/Textbase/country/maps/EUROPE/ele_pop.htm (13) http://www.teias.gov.tr/projeksiyon/CAPACITY%20PROJECTION%202008-2017.pdf (17) http://www.teias.gov.tr/ist2006/31(40-07).xls (25) It has been stated at the 21. reference as following: "Electricity Market Grid Regulation, published in the Official Gazette dated 22 June 2003 and	**CL07**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			numbered 25001” But its date is 22 January 2003. Please correct the relevant links.		
z. Is it described how the baseline scenario is identified and the identified baseline scenario?	PD temp	2.4	The baseline scenario is formulated in “Tool to calculate the emission factor for an electricity system. In the section 2.4. of the PD, it has been stated as follows: *“Since the project is an installation of a new grid-connected renewable power plant, the baseline scenario is formulated in ACM0002 / Version 11: “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 below”.”*	**OK**	**OK**
aa. Has the project proponent selected the most reasonable baseline scenario for the project?	PD temp	2.4	The project proponent has selected the most reasonable baseline scenario for the project activity. The baseline scenario has been selected according to the methodology.	**OK**	**OK**
bb. Does it reflect what most likely would have occurred in the absence of the project?	PD temp	2.4	It has been stated in section 1.8. of PD version 01 that as follows: *“Uzuncayir 82.0 MW HEPP Project is a grid connected renewable power generation project which adds electricity capacity from hydro power sources which otherwise would have been generated by the fossil fuel fired power plants.”* *“The method to describe and calculate the baseline has clearly been specified by the Baseline Methodology. CDM Executive Board has already*	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			provided a consolidated tool for appraising and demonstrating the additionality feature of the projects."		
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 demonstration of additionality)?	PD temp	2.5	In the section 2.5. of the PD, 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 latest version (version 05.2) of the UNFCCC Methodological Tool "Tool for the demonstration and assessment of additionality" as suggested by the methodology ACM0002. The link as following does not open: http://analiz.ibsyazilim.com/isapi/AI01/BETA01.asp (48) It has been stated at the reference 44 as following: "National Gazette number 25150, 06/06/2003" But its date is 26/06/2003. Please correct the link.	**CL08**	**OK**
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	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 is used. Hence the checklist question is N/A.	**OK**	**OK**
ee. Are title and reference of the VCS methodology (which includes the monitoring requirements) applied to the project activity and explanation of methodology choices provided?	PD temp	3.1	The title and the reference of the VCS methodology applied to the project activity and application of methodology to project is explained in the section 3.1. of PD. However, there is no reference to tool of the ACM0002. Please refer to tool of the ACM0002.	**CL06**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
ff. Is monitoring, including estimation, modelling, measurement or calculation approaches desbride including:	PD temp	3.2	*Please see below.*		
i. Purpose of monitoring?	PD temp	3.2	The purpose of monitoring has not stated in the PD. Please include the purpose of monitoring in the section 3.2. of the PD. Please give the purpose of monitoring in the section 3.2. of the PD.	**CL09**	**OK**
ii. Types of data and information to be reported, including units of measurement?	PD temp	3.2	Types of data and information to be reported including the units of measurement has been given in section 3.2. of the PD. The tabular format used is checked form the tool applied which is "Tool to calculate the emission factor of an electricity system" in this project.	**OK**	**OK**
iii. Origin of the data?	PD temp	3.2	The origin of data has been given at the Table 15, in the section 3.2. of the PD.	**OK**	**OK**
iv. Monitoring, including estimation, modelling, measurement or calculation approaches?	PD temp	3.2	Monitoring, including estimation, modelling, measurement or calculation approaches have been given in the section 3.2. of the PD.	**OK**	**OK**
v. Monitoring times and periods, considering the needs of intended users?	PD temp	3.2	Monitoring, including estimation, modelling, measurement or calculation approaches have been presented in the section 3.2. of the PD.	**OK**	**OK**
vi. Monitoring roles and responsibilities ?	PD temp	3.2	It has been stated in the section 3.2. of the PD that all the data will be collected and stored by Limak. However, it has not indicated how reporting will be done. Please give details about reporting.	**CL10**	**OK**
vii. Managing data quality?	PD temp	3.2	It has been stated in the section 3.4. of the PD that: *"The project owner, Arsan Enerji A.Ş. has already signed an agreement with TEIAS that includes*	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			measuring the amount of electricity that goes to the system accurately. Based on this sales agreement, there is no need for an additional process or equipment to monitor the data."		
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	*Please see below.*		
i. Data unit?	PD temp	3.3	Data units have been stated at Table 16, in the section 3.3. of the PD.	**OK**	**OK**
ii. Description?	PD temp	3.3	Descriptions have been stated at Table 16, in the section 3.3. of the PD.	**OK**	**OK**
iii. Source of data to be used?	PD temp	3.3	Source of data have been stated at Table 16, in the section 3.3. of the PD.	**OK**	**OK**
iv. Value of data applied for the purpose of calculating expected emissions reductions?	PD temp	3.3	Value of data applied for the purpose of calculating expected emissions reductions have been stated at Table 16, in the section 3.3. of the PD.	**OK**	**OK**
v. Description of measurement methods and procedures to be applied?	PD temp	3.3	Descriptions of measurement methods and procedures have been stated at Table 16, in the section 3.3. of the PD.	**OK**	**OK**
vi. QA/QC procedures to be applied?	PD temp	3.3	QA/QC procedures have been stated at Table 16, in the section 3.3. of the PD.	**OK**	**OK**
vii. Any comment?	PD temp	3.3	Any comment has been stated at Table 16, in the section 3.3. of the PD.	**OK**	**OK**
hh. Is the monitoring plan described?	PD temp	3.4	There are typing errors in the section 3.4. of the PD as follows: *"The project owner, Arsan Enerji A.Ş. has already signed an agreement with TEIAS that includes*	**CL11**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			measuring the amount of electricity that goes to the system accurately." *"The kwh invoice from Arsan to the purchasers will be cross-checked with metering as well."* Please correct "Arsan" as "Limak"		
ii. Are methodological choices explained?	PD temp	4.1	Methodological choices have been explained in the section 4.1. of the PD. However, there is no reference to tool of the ACM0002. Please refer to tool of the ACM0002.	**CL06**	**OK**
jj. Are GHG emissions and/or removals for the baseline scenario quantified?	PD temp	4.2	The GHG emissions have been quantified for the baseline scenario in the section 2.4. of the PD. However, according to the VCS PD Template baseline scenario quantified should be explained in the section 4.2. Please correct it.	**CAR07**	**OK**
kk. Are GHG emissions and/or removals for the project quantified?	PD temp	4.3	The GHG emissions have been quantified for the project in the section 2.4. of the PD. However, according to the VCS PD Template baseline project quantified should be explained in the section 4.3. Please correct it.	**CAR08**	**OK**
ll. Are GHG emission reductions and removal enhancements for the GHG project quantified?	PD temp	4.4	Please give the GHG emission reductions and removal enhancements for the GHG project quantified.	**CAR09**	**OK**
mm. Was a summary of environmental impact assessment, when such an assessment is required by applicable legislation or regulation, provided? ISO14064-2, 5.2.k	ISO 14064 -2	5.2.k	It has been stated in the section 5 as follows: *"The project was approved to be implemented in year 1985, way before the EIA concept was born, with the construction to be completed by the State Water Works (DSI, a public body responsible with water project development and application). Hence, the project preparation phase never included an EIA process. When the project owner*	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			took over the project in 2007, 99 percent of the construction had already been completed without an EIA and the project owner was exempt from conducting an EIA because their only duty was to reengineer the equipment design and finish the installation." EIA not required certificate" is given in Annex 5.		
nn. Were relevant outcomes from stakeholder consultations and mechanisms for on-going communication provided?	PD temp	6	Stakeholder consultation meeting is not mandatory according to the regulations. It is explained that the project managers had been open to face to face communications with local people in order to solve any problem that the project had caused in section 5 of the PD. It should be clarified how the ongoing communication with stakeholders is provided.	**CAR10**	**OK**
oo. Were 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	Frequency of monitoring and reporting and the project period, including relevant project activities in each step of the GHG project cycle are not included. Please submit the feasibility study.	**CAR11**	**OK**
pp. Was evidence of proof of title provided through one of the following:	PD temp	8.1	*Please see below.*		
i. a legislative right?	PD temp	8.1	"Generation License" is given in Annex 2 of the PD.	**OK**	**OK**
ii. a right under local common law?	PD temp	8.1	"Generation License" is given in Annex 2 of the PD.	**OK**	**OK**
iii. ownership of the plant, equipment and/or process generating the reductions/removals?	PD temp	8.1	There is no information about the ownership of the equipment. Please give information about the ownership of the equipments.	**CL12**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
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	It has been not defined that who is responsible for emission reductions. Please give information.	**CL13**	**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	The project does not 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 hence the checklist question is 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	The project does not 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 hence the checklist question is 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	The project does not 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 hence the checklist question is N/A.	**OK**	**OK**
ii. purchase and cancellation of GHG allowances equivalent to the reductions/removals generated by the project related to the Program or national cap?	PD temp	8.2	The project does not 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 hence the checklist question is N/A.	**OK**	**OK**
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	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "Consolidated	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
2 – Performance test; Test 3 – Technology test?			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.		
b. If the project proponent used Test 1:	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
i. 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	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
ii. Step 2 – Implementation Barriers – Does the project face one (or more) distinct barrier(s) compared with barriers faced by alternative projects?	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
Investment Barrier – Does the project face capital or investment return constraints that can be overcome by the additional revenues associated with the	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" and the	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
generation of VCUs?			additionality tool referred in this methodology. Therefore the checklist question is N/A.		
Technological Barriers – Does the project face technology-related barriers to its implementation?	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
Institutional barriers – Does the project face financial, organizational, cultural or social barriers that the VCU revenue stream can help overcome?	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
iii. Step 3 – Common Practice	VCS	5.8	*Please see below.*		
i. Is project type common practice in sector/region, compared with projects that have received no carbon finance?	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
ii. if it is common practice, have the project proponents identified barriers faced compared with existing projects?	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" and the additionality tool referred in this methodology.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			Therefore the checklist question is N/A.		
iii. Is the demonstration that the project is not common practice based on guidance in the GHG Protocol for Project Accounting, Chapter 7?	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
1. Was data on all baseline candidates within the geographic area collected?	GHG PROTOCOL	7.4.2 AND 7.6	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
2. Was a relative percentage for each different technology or practice calculated? (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	GHG PROTOCOL	7.4.2 AND 7.6	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
plantsor 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	*Please see below.*		
i. 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	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
ii. Step 2: Performance Standard	VCS	5.8	*Please see below.*		
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	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
ii. Are performance standard based additionality tests approved through the double approval process and by the VCS Board? (The list of	VCS	5.8	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" and the	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
approved performance standards is on www.v-c-s.org)			additionality tool referred in this methodology. Therefore the checklist question is N/A.		
d. If the project proponent used Test 3:	VCS	5.8	*Please see below.*		
i. 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	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
ii. 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	The project proponents have used the UNFCCC approved consolidated baseline and monitoring methodology ACM0002, Version 11 "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**
f. Identifying GHG sources, sinks and reservoirs relevant to the project					
a. Refer to Clause 6, under Methodologies.	VCS	5.9	Refer to Clause 1.5., under the Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
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*	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
			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" Under section 2.4 of the VCS PD version 01, the project proponent has stated that the above mentioned baseline scenario 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. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
c. Has the project proponent selected or established criteria and procedures for identifying and assessing potential baseline scenarios considering the following:	ISO 14064 -2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
i. The project description, including identified GHG sources, sinks and reservoirs;	ISO 14064 .2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
ii. Existing and alternative project types, activities and technologies providing equivalent type and level ofactivity of products or services to the project;	ISO 14064 -2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
iii. Data availability, reliability and	ISO	5.4	The baseline scenario is determined according to	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
limitations;	14064 -2		the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.		
iv. Other relevant information concerning present or future conditions, such as legislative, technical, economic,sociocultural, environmental, geographic, site-specific and temporal assumptions or projections.	ISO 14064 -2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
d. Has the project proponent demonstrated equivalence in type and level of activity of products or services provided between the project and the baseline scenario and has explained, as appropriate, any significant differences between the project and the baseline scenario ?	ISO 14064 .2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
e. Has the project proponent selected or established, explained and applied criteria and procedures for identifying and justifying the baseline scenario?	ISO 14064 .2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
f. In developing the baseline scenario, has the project proponent selected the assumptions, values and procedures that help ensure that GHG emissions reductions or removal enhancements are not over-estimated?	ISO 14064 .2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
g. Has the project proponent selected or established, justified and applied criteria and procedures for demonstrating that the project	ISO 14064 .2	5.4	The baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
results in GHG emissions reductions or removal enhancements that are additional to what wouldo ccur in the baseline scenario?			and Monitoring Methodologies: ACM0002 Version 11.		
h. 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 baseline scenario is determined according to the methodology ACM0002 therefore the checklist question is N/A. Please refer to Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11.	**OK**	**OK**
h. Monitoring the GHG project					
a. Has the project proponent shall 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 analyzing data and information important for quantifying and reporting GHG emission reductions relevant for the project and baseline scenario in line with the ACM002 version. Please see Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11 for details.	**OK**	**OK**
b. Do the monitoring procedures include?	VCS	5.11	*Please refer to question ff.*	**OK**	**OK**
i. purpose of monitoring?	VCS	5.11	*Please refer to question ff.*	**OK**	**OK**
ii. types of data and information to be reported, including units of measurement?	VCS	5.11	*Please refer to question ff.*	**OK**	**OK**
iii. origin of the data?	VCS	5.11	*Please refer to question ff.*	**OK**	**OK**
iv. monitoring methodologies, including estimation, modelling, measurement or calculation approaches?	VCS	5.11	*Please refer to question ff.*	**OK**	**OK**
v. monitoring times and periods, considering the needs of intended users?	VCS	5.11	*Please refer to question ff.*	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
vi. monitoring roles and responsibilities?	VCS	5.11	*Please refer to question ff.*	**OK**	**OK**
vii. GHG information management systems, including the location and retention of stored data?	VCS	5.11	*Please refer to question ff.*	**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 has been stated in section 3.1. of the PD as all measurements will be conducted with calibrated measurement equipment according to relevant industry standards. Please see Table 2-Baseline and Monitoring Methodologies: ACM0002 Version 11 for details.	**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, conversion factors and others standard factors as defined in the monitoring clause of the applied VCS Program methodology and set out in the VCS PD? (A list of VCS approved methodologies is available on www.v-c-s.org)	VCS	5.12	The project is at validation stage therefore the checklist question is N/A.	**OK**	**OK**
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	VCS	5.14	The project proponent has made available to the validation team the VCS PD, proof of title and any	**OK**	**OK**

CHECKLIST QUESTION	Ref.	item	COMMENTS	Draft Concl	Final Concl
requested supporting information and data needed to evidence statements and data in the VCS PD and proof of title?			requested supporting information and data needed to evidence statements and data in the VCS PD and proof of title.		
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 proposed project is at the validation stage hence the checklist question is N/A.	**OK**	**OK**

TABLE 2 BASELINE AND MONITORING METHODOLOGIES: ACM0002 VERSION 11

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
Baseline Methodology					
1. Applicability					
1.1.1. Does the project activity generate electricity from a renewable source?	ACM0002 v11	DR	Yes, the project activity generates electricity from a renewable source.	**OK**	**OK**
1.1.2. Is the power connected to the grid?	ACM0002 v11	DR	The power will be connected to grid.	**OK**	**OK**
1.1.3 If answer to question above is 'No', whether it displaces the electricity generated in grid?	PD	DR	The answer to question above is 'Yes'. Hence the checklist question is N/A.	**OK**	**OK**
1.1.4 Is the baseline methodology used in conjunction with the approved monitoring methodology ACM0002	ACM0002 v11	DR	The project activity is not a capacity addition to an existing plant hence the checklist question is N/A.	**OK**	**OK**
1.1.5 Does the project activity relate to electricity capacity additions from renewable sources?	ACM0002 v11	DR	The project is an installation a new hydropower plant with a dam. Hence 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	ACM0002 v11	DR	The project falls under the category of Green Field project as it involves the construction of a new hydro electric power plant.	**OK**	**OK**
1.1.7 Can the geographic and system boundaries for the relevant electricity grid be clearly identified?	ACM0002 v11	DR	The geographic and system boundaries for the relevant electricity grid can be clearly identified. It is stated in section 2.4. of the PD.	**OK**	**OK**
1.1.8 Is the information on the characteristics of the grid available?	ACM0002 v11	DR	The information on the characteristics of the grid is available in TEIAS web site, it is also stated in section 2.4. of the VCS PPD.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
1.1.9 Will the Project activity consume in-house biomass or will it be purchased from outside?	ACM0 002 v11	DR	Project will not consume biomass in any stage, as it is a hydropower plant. Hence the question is N/A.	**OK**	**OK**
1.1. 10 Will implementation of Project result in increase in processing capacity of raw input?	PD	DR	Implementation of the Project will not result in increase in processing capacity of raw input. Hence the question is N/A.	**OK**	**OK**
1.1.12 Will biomass to be used by Project activity be stored for more than one year?	ACM0 002 v11	DR	The proposed project is the construction of a new HEPP project. Hence the question is N/A.	**OK**	**OK**
1.1.13 Will biomass require significant energies (like Processing) other than transportation?	ACM0 002 v11	DR	The proposed project is the construction of a new HEPP project. Hence the checklist question is 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	ACM0 002 v11	DR	The proposed project is the construction of a new HEPP project. Hence the checklist question is N/A.	**OK**	**OK**
1. 2. Project boundary					
1.2.1. Did the project participant account for the CO_2 emission from electricity generation in fossil fuel fired power that is displaced due to project activity?	ACM0 002 v11	DR	The baseline scenario is delivering the same amount of the electricity from the grid and the grid is based on fossil fuel fire. The project participant account for the CO_2 emission from electricity generation in fossil fuel fired power that is displaced due to project activity.	**OK**	**OK**
1.2.2 Did the project participant account for the CO_2 emission from Heat generation in fossil fuel based power that is displaced due to project activity?	ACM0 002 v11	DR	There is no Heat generation fossil fuel fired power that is displaced due to project activity. Hence this the checklist question is N/A.	**OK**	**OK**
1.2.2. 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 VCS project power plant is connected to?	ACM0 002 v11	DR	The project is a HEPP project hence this the checklist question is N/A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
1.2.3 Is 'Biomass dumped or left to decay or burned in uncontrolled manner without utilizing for energy purposes most likely scenario?	ACM0 002 v11	DR	The project is a HEPP project hence this the checklist question is N/A.	**OK**	**OK**
1.2.4 If answer to Question 1.2.3 is Yes, then are CH4 emissions in the project boundary are included?	ACM0 002 v11	DR	The project is a HEPP project hence this the checklist question is N/A.	**OK**	**OK**
1.2.5 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?	ACM0 002 v11	DR	The project is a HEPP project hence this the checklist question is N/A.	**OK**	**OK**
1.2.6 Whether choice of inclusion/exclusion CH_4 emissions in project and baseline are documented in PD?	ACM0 002 v11	DR	Table 3 of PD is not in line with Table 1 of ACM002. CH_4 emission for the baseline is not stated in the Table 3. "Construction and operation of HEPP" section in the Table 3 has not been defined in the Table 1 of ACM002. Please correct the Table 3 of PD according to the Table 1 of ACM002. It is stated in Table 3 that the project is run off river HEPP. However, in the documents about the licenses there is information about the dam. Please clarify. The project density is between 4 W/m^2 and 10 W/m^2 so emission from the reservoir has been calculated in the PD. However, in the Table 3 of the PD it is stated, "The project is run off river HEPP and there is no reservoir in the project design." Please clarify.	**CAR12**	**OK**
1.2.7. Is the regional project electricity system identified by the spatial extent of the power plants that can be dispatched without significant transmission constraints?	ACM0 002 v11	DR	There is no independent regional grid system in Turkey, transmission system is interconnected. In section 2.4. of the PD, the identification of the relevant electrical power system has been stated.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			The explanations are in line with the tool.		
2.8 Whether N_2O has been excluded as GHG source within the project boundary?	ACM0 002 v11	DR	Please correct the Table 3 of PD according to the Table 1 of ACM002 including the N_2O emissions.	**CAR12**	**OK**
2.9. Are the assumptions made in determining the project electricity system defined and justified?	ACM0 002 v11	DR	In section 2.4. of the PD the identification of the relevant electricity power system has been defined and justified.	**OK**	**OK**
2.10. Does the application of this methodology result in a clear grid boundary?	ACM0 002 v11	DR	Yes the application of this methodology result in a clear grid boundary. The boundary of the grid is the Turkish national grid.	**OK**	**OK**
2.11. Does the application of this methodology result in a given country specific variations in grid management policies?	ACM0 002 v11	DR	The application of this methodology does not result in a given country specific variations in grid management policies.	**OK**	**OK**
2.12. If answer to question is yes then whether DNA of the host country provides the delineation of grid boundaries.	ACM0 002 v11	DR	The application of this methodology does not result in a given country specific variations in grid management policies hence the checklist question is N/A.	**OK**	**OK**
2.13. If answer to question is no whether DNA guidance is available for defining the boundary.	ACM0 002 v11	DR	There is no DNA in Turkey hence the checklist question is N/A.	**OK**	**OK**
2.14. If answer to question is no whether the layered dispatch system (e.g. state/provincial/regional/national) the regional grid is used	ACM0 002 v11	DR	There is no layered dispatch system in Turkey hence the checklist question is N/A.	**OK**	**OK**
2.15. If the regional grid is not used whether the national or state grid is used.	ACM0 002 v11	DR	The Turkish national grid is used.	**OK**	**OK**
1.3. Identification of alternative baseline scenarios					

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
1.3.1. Are Realistic and credible alternatives separately determined for power, biomass and Heat?	ACM0002 v11	DR	Project activity is the installation of a new grid-connected renewable power plant/unit.	**OK**	**OK**
1.3.2. Are the various options for alternatives explained in PD?	ACM0002 v11	DR	Since the project is not a retrofit project alternatives are not required in ACM002 version 11. Hence the checklist question is N/A.	**OK**	**OK**
1.3.3. Is the explanation of these options transparent and complete	ACM0002 v11	DR	Since the project is not a retrofit project alternatives are not required in ACM002 version 11. Hence the checklist question is N/A.	**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?	ACM0002 v11	DR	Since the project is not a retrofit project alternatives are not required in ACM002 version 11. Hence the checklist question is N/A.	**OK**	**OK**
1.3.5 Are the calculations for baseline are as per latest version of ACM0002 as required by this methodology?	ACM0002 v11	DR	The project proponent has applied CDM approved Methodology ACM0002 version 10 and tools that are referred in ACM0002. However, the Methodology ACM0002 version 11 was validated at 26.02.2010 by CDM. Please use the latest version.	**CL01**	**OK**
1.3.6 Are transmission & Distribution losses neglected as required by the methodology?	ACM0002 v11	DR	In the section 1.9. of the PD it is stated that *"The net electricity production (delivered to the grid after losses and consumption in the plant)"* however transmission and distribution should be neglected.	**CAR13**	**OK**
1.3.7 Is quantity of electricity required for operation of plant subtracted?	ACM0002 v11	DR	Emission from fossil fuel consumption is neglected as line with the methodology.	**OK**	**OK**
1.3.8 Where EG-historical is the average of historical electricity delivered by the existing facility to the Grid,	ACM0002	DR	The project is a Greenfield power plant hence checklist question is N/A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
whether spanning all data from the most recent 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.	v11				
1.3.9. Whether a minimum of three years data is referred and used in case the project is non-hydro?	ACM0002 v11	DR	The project is a Greenfield power plant hence 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?	ACM0002 v11	DR	The project is an installation of a new power plant hence the question 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?	ACM0002 v11	DR	The project is a Greenfield power plant hence 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?	ACM0002 v11	DR	The project is not a retrofit or replacement of an existing renewable energy power plant hence 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?	ACM0002 v11	DR	The project is not a retrofit or replacement of existing renewable energy power plants hence 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	ACM0002 v11	DR	The baseline emission factor is calculated as a combined margin consisting of the combination of operating margin and build margin as indicated in the section 2.4. of the PD.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
	ACM0002 v11	DR	The three steps indicated in the methodology ACM0002 has been applied during the calculations.	**OK**	**OK**
1.3.15 Whether the weighted average applied by project participant is fixed for a crediting period.	ACM0002 v11	DR	Weighted average applied by project participant is fixed for a crediting period. The weighted average has been considered for 2006 to 2008 as stated in section 2.4. of the PD.	**OK**	**OK**
1.3.16. Whether operating margin emission factors calculations are based on one of the four methods described in the methodology ACM0002 ?	ACM0002 v11	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.	**OK**	**OK**
1.3.17 Is the most likely baseline scenario 'electricity production from other sources feeding into the grid?	ACM0002 v11	DR	The most likely baseline scenario is the electricity production from other sources feeding into the grid.	**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?	ACM0002 v11	DR	No, the project does not modify or retrofit an existing electricity generation facility.	**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"?	ACM0002 v11	DR	The methodological tool for the demonstration and assessment of the additionality has been defined as "Tool for the demonstration and assessment of additionality", Version 5.2. in section 2.5. of the PD.	**OK**	**OK**
1.5 Project Emissions					
1.5.1. Are the relevant project emissions indicators have been considered?	ACM0002 v11	DR	It has been stated that the project emission has been defined in section 1.3. of the PD. The power density has been calculated to justify the assumption.	**OK**	**OK**
1.5.2 Are the project emissions arising out of	ACM0	DR	The project emission is only the CH_4 emission from	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
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?	002 v11		the reservoir.		
1.5.3 Is the approach for project emissions conservative and transparent?	ACM0 002 v11	DR	The approach for project emissions is conservative and transparent.	**OK**	**OK**
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?	ACM0 002 v11	DR	The project is the installation of a new HEPP hence the checklist question is N/A.	**OK**	**OK**
1.6. Baseline Emissions					
1.6.1. Are the baseline emissions determined according to the formula $BE_y = EG_y \times EF_y$?	ACM0 002 v11	DR	Yes, the baseline emissions are determined according to the formula: $BE_y = EG_y \times EF$ In the section 2.4.-step 3, it is written, *"All in all, option C of "Simple OM" method was adopted as "the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system" is the only available data in the host country."* Please correct "*option C*" as "*option B*"	**CL14**	**OK**
1.6.2. Were the Emissions Factor for displaced electricity calculated as in ACM0002?	ACM0 002 v11	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?	ACM0 002 v11	DR	N/A	**OK**	**OK**
1.6.4 Whether 'life time aspects' are taken into account if required so by applicable scenario?	ACM0 002	DR	No. There is no applicable scenario, which requires considering "life time aspects". Therefore the	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
	v11		checklist question is N/A.		
1.6.5 Does project account for baseline emissions due to natural decay or uncontrolled burning of anthropogenic sources of biomass residues?	ACM0 002 v11	DR	N/A	**OK**	**OK**
1.6.6 Does project account for quantity of biomass residues used as a result of the project activity?	ACM0 002 v11	DR	N/A	**OK**	**OK**
1.7. Leakage					
1.7.1. Are the leakage considered?	ACM0 002 v11	DR	No leakage has been considered with justification that the equipments, which are used in the project, are all first-hand equipments in section 1.9. of the PD.	**OK**	**OK**
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?	ACM0 002 v11	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?	ACM0 002 v11	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?	ACM0 002 v11	DR	N/A	**OK**	**OK**
1.7.5 When either L2 or L3 is chosen as an option, the radius for procurement of biomass is at least 20 km and not more than 200 km in any case?	ACM0 002 v11	DR	N/A	**OK**	**OK**
1.7.6 Where Project cannot demonstrate the procurement of biomass in above stated limits, is leakage penalty applied?	ACM0 002 v11	DR	N/A	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
1.8. Emission Reduction					
1.8.1. Did the emissions reductions were determined according to the formula ERy = ER_{heaty} + $ER_{electricity}$ y + $BE_{biomassy}$ –PE_y – L_y	ACM0 002 v11	DR	ER_y is calculated as follows: $ER_y = BE_y – PE_y - LE_y$	**OK**	**OK**
1.8.2 Are the emission reduction calculations for displacement of power done as appropriate to chosen scenario?	ACM0 002 v11	DR	There is no displacement of power in the baseline scenario.	**OK**	**OK**
1.8.3. Were all values chosen in a conservative manner and was the choice justified?	ACM0 002 v11	DR	The efficiency computations are based on total power generation data. However, the Build Margin Option B 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. Therefore, the default efficiency values for new units (built after 2000) given in the "Tool to calculate emission factor for an electricity system-Annex 1" should be used. Taking natural gas as an example, the efficiency values calculated are as follows: 44.9% corresponding to Autoproducers in Turkey. The plant types (combined cycle, open cycle, steam turbine) are not known. Assuming that new plants are combined cycle ones, this efficiency factor is similar to the tool's Old Plants (before and in 2000) figure which is 46%. For new plants, the efficiency is given as 60% in the tool. Hence, the project developers should either provide convincing arguments that the new plants are not combined cycle ones, or use the tool's new plant efficiency factors (employing 60% for plants whose technology is not known in order to be on the conservative side).	**CAR26**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			Please revise the BM calculation accordingly.		
1.8.4. Whether an estimate of likely project emission reductions for the proposed crediting period is prepared as part of the PD?	ACM0002 v11	DR	Estimated amount of VCUs over the crediting period are given in Table 1 of PD. The emission factor is indicated as 0.614 tCO^2/MWh in the section 2.4. The calculation in the Table 1 is not consistent. Please recalculate baseline emission reduction, project emission and emission reduction.	**CAR14**	**OK**
1.8.5. Whether the estimate in principle employs the same methodology ACM0006?	ACM0002 v11		Project is not biomass residue hence checklist question is N/A.	**OK**	**OK**
1.8.6. Whether the emission factor is determined ex-post during monitoring?	ACM0002 v11	DR	Emission factor is determined as ex-ante as stated under section Step 4 in the section 2.5. of the PD.	**OK**	**OK**
1.8.7. If yes whether project participants have used models or other tools to estimate the emission reductions prior to validation?	ACM0002 v11		Emission factor is determined as ex-ante as stated under section Step 4 in the section 2.5. of the PD. Hence the question is N/A.	**OK**	**OK**
Monitoring Methodology					
2.1. Applicability					
2.1.1. Does the project activity generate electricity from a renewable source?	ACM0002 v11	DR	The project generates electricity from a renewable source.	**OK**	**OK**
2.1.2. Is the power connected to the grid?	ACM0002 v11	DR	The power is connected to grid.	**OK**	**OK**
2.1.3. Does the project activity relate to electricity capacity additions from renewable sources?	ACM0002 v11	DR	The project activity does not relate capacity additions from renewable sources.	**OK**	**OK**
2.1.4. Is fuel switch done in the process?	ACM0002	DR	The project is the installation a new HEPP hence	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
	v11		checklist question is N/A.		
2.1.5. Can the geographic and system boundaries for the relevant electricity grid be clearly identified?	ACM0002 v11	DR	The geographic and system boundaries for the relevant electricity gird can be clearly identified	**OK**	**OK**
2.1.6. Is the information on the characteristics of the grid available?	ACM0002 v11	DR	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?	ACM0002 v11	DR	The monitoring plan requires monitoring of increased electricity generation from 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.	ACM0002 v11	DR	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?	ACM0002 v11	DR	The ex-ante option has been selected as indicated in the section 2.5. of the PD. Emission factor will be recalculated at the beginning of each crediting period.	**OK**	**OK**
2.2.4. Does the monitoring plan require monitoring of Data needed to recalculate build margin emission factor, if needed, consistent with ACM0002?	ACM0002 v11	DR	The ex-ante option has been selected as indicated in the section 2.5. of the PD. Emission factor will be recalculated at the beginning of each crediting period.	**OK**	**OK**
2.2.5. Does the monitoring plan require monitoring of	ACM0	DR	The project is a HEPP hence checklist question is	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
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 ?	002 v11		N/A.		
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?	ACM0 002 v11	DR	All measurements will be conducted with calibrated measurement equipment as stated in section 3.1. of PD. Please identify relevant industry standards for the calibration that mentioned in section 3.1.	**OK**	**OK**
2.3.2 Are frequency of monitoring the parameters defined hourly/daily?	ACM0 002 v11	DR	It is defined in section 3.3. electricity generation will be measured continuously and recording will be done monthly.	**OK**	**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?	PD	DR	The steps followed in section B.5 of the PD rev 01 is in line with the steps of the tool "Tool for the demonstration and assessment of additionality- Version 05.2."	**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.	PD	DR	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.	**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	PD		In Step 1 all the sub-steps as below followed: 1. Sub-step 1a: Define alternatives to the project activity 2. Sub-step 1b: Enforcement of applicable laws and regulations	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
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 VCS project activity 2. (b) Other realistic and credible alternative scenario(s) to the proposed VCS 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).	PD	DR DR DR	Four alternatives have been defined in sub-step 1 a of section 2.5 of the PD. The defined alternatives and the discussion about credibility of the secenarios are given below: Alternative 1 : Construction of a thermal power plant with the same annual power output Alternative 2 : The proposed project activity not undertaken as a VER project activity Alternative 3 : Construction of some other renewable energy plant with the same annual power output Alternative 4 : The same service of power supply is provided from the grid (Uzuncayir HEPP is not built)	**OK**	**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.	PD	DR	Alternative 1 has been defined as a construction of a thermal power plant with the same annual power output in section 2.5 of the PD.	**OK**	**OK**
f. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	PD	DR	The realistic alternatives are 1, 2 and 4. as the outcome of Step 1a. The Eastern Anatolia region is not very rich of wind and very steep terrain does not allow for wind power plants. As a result, Alternative 3 for the region is eliminated. It has been stated in the section 2.5.-substep 1.a.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			of PD as follows: *"Under these circumstances, the realistic alternatives are 1, 2 and 4. Analyzing these three alternatives, it is seen that all scenarios are consistent with the baseline definition of ACM0002 / Version 11 where it defines the baseline scenario as the amount of electricity that would be delivered to the grid by the project activity, generated by the operation of existing grid-connected power plants and by the addition new generation sources, as reflected by the combined margin."*		
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.	PD	DR	Please clearly include which alternatives are in line with the applicable legislation.	**CL15**	**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.	PD	DR	Please clearly include which alternatives are in line with the applicable legislation.	**CL15**	**OK**
i. Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that	PD	DR	Please state the outcome of step 1b.	**CAR15**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
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.					
j. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3.)	PD	DR	The PP 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):	PD	DR	In step 2 the following sub-steps have been followed as the below: 1. Determine appropriate analysis method 2. Option III. Apply benchmark analysis 3. Calculation and comparison of financial indicators 4. 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 VCS project activity and the alternatives identified in	PD	DR	Under sub-step 2a, the appropriate analysis method is determined as follows: *"The Tool for the Demonstration and Assessment of Additionality, version 05.2, from EB39, lists*	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
Step 1 generate no financial or economic benefits other than VCS related income (Option I). 2. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification			*three possible analysis methods:* • *Option I: Simple cost analysis;* • *Option II: Investment comparison analysis; and* • *Option III: Benchmark analysis.* *Since the proposed project generates financial and economic benefits via the sales of electricity other than carbon revenues, Option I cannot be used.* *Option II is only applicable to projects where alternatives should be similar investment projects in terms of generation capacity.* *As a result Option III: Benchmark Analysis is selected as the analysis method and the Equity IRR is selected as the financial indicator for the demonstration of the additionality of the project.* *Benchmark Analysis is assessed to be appropriate (Option III)"* **MoV:** Benchmark analysis is the most appropriate analysis method for the project participants as they have only invested in hydro projects so far and they do not have experience in other types of investments, hence they do not have enough data to compare other type of investments with the proposed project activity.		
m. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis 1. Document the costs associated with the VCS project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is	PD	DR	In substep II-a of section 2.5 of the PD; it has been stated that benchmark analysis has been selected hence the checklist question is N/A.	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
less costly than the project activity.					
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	PD	DR	In substep II-a of section 2.5 of the PD; it has been stated that benchmark analysis has been selected hence 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 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	PD		Please provide reference for the benchmark rate of %16-%18 by using the risk free rate (Government Bond) and suitable risk premium.	**CAR16**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
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.					
			The period of assessment is given as 50 years in the PD. In PD it is recommended to renew the equipment in every 20 years so please either reflect the renewing costs in the analysis for each 20th year	**CAR17**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			or restrict the IRR analysis with 20 years. Please also do the IRR analysis for 49 years of license period instead of 50 years.		
			Since the analysis is done for 49 years, there is no need to add fair value as a cash inflow. If the analysis was run for 20 years, the fair value of the project should have been included as a cash inflow.	**CAR18**	**OK**
			Depreciation is added to the net profit in the cash flow calculations.	**OK**	**OK**
			The portion of investment which is financed by equity is considered as cash outflow in calculation of equity IRR.	**OK**	**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 VCS 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.		DR	1. In PD, it is stated that, the full capacity of electricity generation is expected to start in April 2010. This is equivalent to 9/12 of yearly production which is 318,000*9/12 = 238,500. In the analysis 10/12 of yearly production is taken for a 9 months production. Please correct the production in 2010. Please also give explain why there is a production in year 2009. 2. Although 0.6140 is used in the IRR analysis for the VER revenue calculation, 0.6160 is used in PD. Please make them equal. 3. In the IRR analysis in which VER revenue included, VER revenue is directly added as a cash inflow. In fact, there must be a corporate tax applied to the revenue items. So, please apply corporate tax to the VER revenues.	**CAR19**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
			4. In the section 2.5.-Step 3.a. please review the table names and table headings (Table 15-16). Which one is the projected and which one are the realized sources of funds? 5. Please clearly state how Commissions and Interest figures found in the Investment Details part? 6. Please provide any information how General Production Expense figure is found? 7. Please give explanation why corporate tax application starts in 2016? Please apply the accounting rules so that there are tax receivables in the financial loss years to be deducted in the coming financial gain years. 8. Please provide any information or agreement about the DSI contribution and DSI payment schedule? 9. In PD, it is stated that 164,414,176.32 TL will be given to DSI as an investment cost and the amount to be paid to DSI is given as 97,865,581$ in the IRR analysis. Please clearly state how 97,865,581$ is found? 10. Please clarify if there is a transmission line cost or not? 11. Please clarify if VAT's are included in the Investment Costs or not?		
2. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the VCS-PD, or in separate annexes to the VCS-PD.	PD	DR	*Please refer to CAR19.*	**CAR19**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
3. Justify and/or cite assumptions.	PD	DR	*Please refer to CAR19.*	**CAR19**	**OK**
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	PD	DR	*Please refer to CAR19.*	**CAR19**	**OK**
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.	PD	DR	*Please refer to CAR19.*	**CAR19**	**OK**
6. Present in the VCS-PD a clear comparison of the financial indicator for the proposed CDM activity Please specify details for above	PD	DR	*Please refer to CAR19.*	**CAR19**	**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.	PD	DR DR	Investment cost, electricity prices and production amount are taken into consideration in the sensitivity analysis. Moreover, Carbon price is also considered. There are acceptable changes in the equity IRR results among the scenarios. Sensitivity analysis are runned for a period of 49 years including the investment period. So, the sensitivity results are presented accordingly in the IRR analysis.	**OK**	**OK**
r. Has the outcome of Step 2 clearly mentioned with justification?	PD	DR	The outcome of Step 2 has clearly mentioned with justification	**OK**	**OK**
s. In step 3: Barrier analysis have all the sub-steps as below followed? 1. Sub-step 3a: Identify barriers that would	PD rev01 B.5	DR	Barrier analysis have all the substeps as below in step 3 of the PD: 1. Sub-step 3a: Identify barriers that would	**OK**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
prevent the implementation of the proposed VCS 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):			prevent the implementation of the proposed VCS 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)		
t. Has the below guideline followed for Sub-step 3a: Identify barriers that would prevent the implementation of the proposed VCS project (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 investment in the country where the proposed VCS project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin. (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	PD rev01 B.5	DR	Investment barriers, technological barriers and other barriers have been stated in substep-3a of section 2.5. Investment barriers can be defined as follows; 1- Similar activities have only been implemented with grants or other non-commercial finance terms. 2- No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed VCS project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin. Please give your barrier in compliance with the additionality tool. The data that be used in the IRR calculation can not be use barrier analyses. The Uzuncayir HEPP is originally a DSI (State Water Works) project which started in 1993 and the project will have a 74.0 MW installed capacity. It has been explained in the technological barriers that when the Limak took over the project, they could not increase the installed capacity beyond 90 MW. However, after Limak took over the project,	**CAR20**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
comparable to those of the proposed VCS 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. (c) Barriers due to prevailing practice: The project activity is the "first of its kind". (d) Other barriers, preferably specified in the underlying methodology as examples.			the installed capacity increased to 84 MW. Please describe the details in Limitations Due to Project Design. The closest airport to the project area is 120 km (from Elazig) and it has been defined as a barrier in transportation of machinery and equipments for the construction and the power plant itself. Please give detail information about the transportation of machinery and equipments by air. Unstable economic condition in the host country has been defined as a social barrier in the PD. However, it has stated in the investment analysis, too. The data that be used in the investment analysis can not be defined as a barrier.		
u. Has the outcome from Step 3a clearly mentioned in PD?		DR	The outcome of Step 3a has been defined in the PD as the following: *"All in all, the barriers elaborated above put significant impediments on the realization of the project. Therefore sub-step 3a is satisfied."*	**OK**	**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): i If the identified barriers also affect other alternatives, explain how they are affected less strongly than they affect the proposed VCS project activity. In other words, demonstrate that the identified barriers do not prevent the	PD rev01 B.5	DR	Please clearly show that the identified barriers in sub-step 3a would not prevent the implementation of at least one of the alternatives. It should be in line with the defined barriers in step 3a.	**CAR21**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
implementation of at least one of the alternatives. Any alternative that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration.					
ii 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.					
iii 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.					

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
universities, technical schools, training centres), industry associations and others. Please specify.					
w. Has the outcome from Step 3 clearly mentioned in PD?	PD rev01 B.5	DR	The outcome of Step 3a has been defined in substep the PD as the following: *"In conclusion, sub-step 3b is satisfied because the identified barriers do not apply to Alternative 1. Therefore, subject to outcome of Common Practice Analysis (Step 4), the project is additional."* It can not be decided if the project additional regarding to step 3. Please correct the outcome.	**CAR22**	**OK**
x. In step 4: Common practise 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		DR	Barrier analysis have all the substeps as below in step 3 of the PD: 1. Sub-step 4a: Analyze other activities similar to the proposed project activity Sub-step 4b has not been applied. Please correct it.	**CAR23**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
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 VCS project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to which extent similar activities have already diffused in the relevant region.	PD rev01 B.5	DR	The list of the projects has been checked regarding to ref.55 (http://www.epdk.gov.tr/lisans/elektrik/proje/yenilenebilir.xls). Tatar HES project is similar to the proposed project activity. It has been stated in the PD that "This project is also planned to benefit from carbon revenues". Please justify if the Tatar HES project will benefit from the carbon revenues clearly.	**CAR24**	**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 activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain	PD rev01 B.5	DR	Sub-step 4b has not been applied. Refer to CAR 24. If the Tatar HES project does not benefit from the carbon revenues please demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially/economically attractive (e.g., subsidies or other financial flows) and which the proposed project activity cannot use or did not face the barriers to which the proposed project	**CAR25**	**OK**

CHECKLIST QUESTION	Ref.	MoV	COMMENTS	Draft Concl	Final Concl
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 PD should include justification about non-accessibility of data/information.			activity is subject. In case similar projects are not accessible, the PD should include justification about non-accessibility of data/information.		
aa. Has the outcome from Step 4 clearly mentioned in PD?	PD rev01 B.5	DR	The outcome of Step 4 has been defined in PD as the following: *"The low rate of completion of the projects and the low contribution privately held hydro projects confirm the barriers elaborated above and also proves that the electricity generation from HEPP business is not a common practice. Therefore Step 4 is satisfied."*	**OK**	**OK**
bb. Has it been proved that the project is additional?		DR	After all CLs/CARs have been closed, it has been proved that the project is additional.	**OK**	**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?	2	DR	It has been stated in section 1.10. of the PD as follows: "*The general scheme of the regulations this kind of facilities in line with, are defined by The Renewable Energy Law (Law Number: 5346, Acceptance Date: 10.05.2005) and Environmental Law (Law Number: 2872, Ratification Date: 09.08.1983).*" The date of "EIA not required certificate" 29.11.2007. But after this date the project capacity is increased. Please require the new "EIA not required certificate" based on the new capacity.	**CAR04**	**OK**
1.2. Are the conditions of the environmental license being met?	2	DR	The date of "EIA not required certificate" 29.11.2007. But after this date the project capacity is increased. Please require the new "EIA not required certificate" with new capacity.	**CAR04**	**OK**
1.3 Are the conditions of the Designated National Authority being met?	2	DR	The host country does not have a DNA.	**OK**	**OK**

TABLE 5 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1/2/3/4	Summary of project owner response	Validation team conclusion
CL01 The project proponent has applied CDM approved Methodology ACM0002 version 10 and tools that are referred in ACM0002. However, the Methodology ACM0002 version 11 was validated at 26.02.2010 by CDM. Please use the latest version.	Table 1 2.a.a. Table 2 1.3.5. Table 1 2.d.w.	Relevant amendments were made in the PD version 02.	Version of the baseline methodology was changed as Version 11 in the PD version 2. **<u>The clarification request is closed.</u>**
CL02 The amount of emission reductions over the crediting period estimated is including project size. It has been stated in section 1.2. of the PD as the following: "*The expected annual average emission reduction is 153,628 tonnes as stated in Table 1 According to the VCS 2007:1 Guidelines section 5; the project falls into the individual validation and verification of a GHG programme option and the project size is "project'' since the expected annual emission reduction is less than 1,000,000 tonnes and more than 5,000 tonnes."* Please state it in the section 1.3. of the PD.	Table 1 2.d.d.	Relevant amendments were made in the PD version 02.	The amount of emission reductions over the crediting period estimated was added in section 1.3. of the PD version 2 as follows: *"The expected annual average emission reduction is 153,628 tonnes as stated in Table 1 According to the VCS 2007:1 Guidelines section 5; the project falls into the individual validation and verification of a GHG programme option and the project size is "project'' since the expected annual emission reduction is less than 1,000,000 tonnes and more than 5,000 tonnes."* **<u>The clarification request is closed.</u>**
CL03 The crediting period was defined as the	Table 1	The project will be renewed for another 10 years period after the end	Starting date of the project activity is 02/02/2009. The carbon crediting

following in section 1.6 of the PD: *"Starting date of the project activity is April 1, 2010, when the plant commences electricity generation with full capacity. 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 may be renewed at most twice."* Please clearly state the renewal period and total crediting life for the project activity.	2.d.g.ii.	of the first period.	period and therefore the monitoring starts when the plant commences electricity generation. The crediting of the project will be renewed for 10 years for the second time after the completion of the first period. The crediting period was defined clearly in the section 1.6. of the PD version 2. **<u>The clarification request is closed.</u>**
CL04 Rainfall reduction and earthquake are listed as risks that could affect GHG emission reduction capacity. Please give the reference about the region is the first degree earthquake zone. It has been stated in section 1.11. of the PD as follows: *"First of all, decrease of rainfall in the region due to the climate change, could reduce the GHG emission reduction capacity. However, recent studies show that region in which the plant will be commenced is one of the regions which can be least influenced in the country."* If the region will be least influenced, the earthquake can not be defined as a risk. Please clarify it.	Table 1 2.d.l.	According to the earthquake map of Turkey which was prepared by Earthquake Research Center of Turkey (http://basariryapidenetim.com.tr/images/depremharita.gif) some part of Tunceli is in the 1. Degree risk zone while some regions of the city is in the 2. Degree risk zone. On the climate change front, this is a risk which can be defined for all hydro projects as the rainfall is the first parameter which is affected from the climate change. The so told researches are based on some mathematical models which have some assumptions. Therefore given the fact that climate change itself is a scientific fact which has been researched more than the effect of climate change on a specific region we can assume that there is a greater risk of change in expected rainfall and therefore expected electricity production (either negatively or	**<u>Review 1:</u>** The given reference, map of Turkey, was included to the PD version 2. The references about the researches that are based on some mathematical models have not been given. Please include the relevant explanations in the PD and give the references. **<u>The clarification request is still open.</u>** **<u>Review</u> 2:** Explanations were accepted by the validation team. The link of the earthquake map of Turkey is available in the PD. The map proves that some part of Tunceli is in the 1. Degree risk zone and some part of the city is in the 2. Degree risk zone.

		positively). Researches give only some hints that the regions's rainfall will not affected as much as other regions. **Response to Review 1:** All relevant explanations were added to the PD. Reference article is attached to the Response to Review 1.	**The clarification request is closed.**
CL05 Limak Insaat Sanayi ve Ticaret A.S. whose contact details given in section 1.15. of the PD is a project participant. Gaia Carbon Finance whose contact details given in section 1.15. of the PD is not a project participant. In section 1.15. of the PD; it has been stated that the baseline has been developed by Gaia Carbon Finance. Please define the project proponent's roles and responsibilities.	Table 1 2.d.r.	Gaia is the consultant to the Limak Insaat who is the project participant and project owner. Gaia developed the PDD and baseline.	It was added to PD that GAIA is the consultant to the Limak İnşaat in the PD version 2. **The clarification request is closed.**
CL06 The baseline for the project was established through the official methodology of ACM0002 / Version 11, named "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" as approved by the CDM Executive Board. It has been stated in section 2.1. of the PD. However, there is no reference to tool of the ACM0002. Please refer to tool of the ACM0002.	Table 1 2.d.v. Table 1 2.d.ee. Table 1 2.d.ii.	As it was referred in ACM002 /Version 11, the baseline methodology was developed in line with "Tool to calculate the emission factor for an electricity system".	The reference to the tool of the ACM0002 was given in the PD version 2. **The clarification request is closed.**
CL07 The links as following do not open: http://www.iea.org/Textbase/country/maps/EUROPE/ele_pop.htm (13) http://www.teias.gov.tr/projeksiyon/CAPACITY	Table 1 2.d.y.	Links have been changed as following: (13) http://www.iea.org/stats/indicators.asp?COUNTRY_CODE=TR	**Review 1:** The reference 13 and 17 were corrected and verified by the validation team. However, the references from 23 to 36 are not been stated in the PD version 2. Please

%20PROJECTION%202008-2017.pdf (17) http://www.teias.gov.tr/ist2006/31(40-07).xls (25) It has been stated at the 21. reference as following: "Electricity Market Grid Regulation, published in the Official Gazette dated 22 June 2003 and numbered 25001" But its date is 22 January 2003. Please correct the relevant links.		(17) http://www.teias.gov.tr/projeksiyon/KAPASITEPROJEKSIYONU2008.pdf (25) http://www.teias.gov.tr/istatistik2008/33.xls The reference was corrected as 22 January 2003 **Response to Review 1:** The numbering of footnotes will be corrected after accepting of all changes in the document. Footnote numberings do not reflect the final numbering in the review. **Response to Review 2**: Please see the clean copy of the PDD.	review all of the references and correct the numbering. All references will be checked after the numbering. **The clarification request is still open.** **Review 2:** Footnote numbering will be checked at the last stage of validation. **The clarification request is still open.** **Review 3:** All footnote numbering was corrected. **The clarification request is closed.**
CL08 The link as following does not open: http://analiz.ibsyazilim.com/isapi/AI01/BETA01.asp (48) It has been stated at the reference 44 as following: "National Gazette number 25150, 06/06/2003" But its date is 26/06/2003. Please correct the link.	Table 1 2.d.cc.	The link was deleted as it was not possible to reach the source. The date was corrected as requested.	The link and the sentences that is related with the link was excluded from the PD version 2. The date was corrected and verified by the validation team. **The clarification request is closed.**
CL09 The purpose of monitoring is stated in the PD. Please include the purpose of monitoring in the section 3.2. of the PD. Please give the purpose of monitoring in the section 3.2. of the PD.	Table 1 2.d.ff.i.	The purpose of the monitoring plan is to ensure that the monitoring and calculation of emission reductions of the proposed Project within the crediting period is complete, consistent, clear and accurate.	The purpose of the monitoring plan was added to section 3.2. of the PD version 2 as follows: *"The purpose of the monitoring plan is to ensure that the monitoring and calculation of emission reductions of*

			the proposed Project within the crediting period is complete, consistent, clear and accurate." **<u>The clarification request is closed.</u>**
CL10 It has been stated in the section 3.2. of the PD that all the data will be collected and stored by Limak. However, it has not indicated how reporting will be done. Please give details about reporting.	Table 1 2.d.ff.vi.	Required amendments were made in the PDD section 3.2 **<u>Response to Review 1:</u>** the sentence was corrected and the phrase mentioning that the electrical engineers will make calibration has been deleted in order to prevent any misunderstandings.	**<u>Review 1:</u>** The monitoring details were added to section 3.2. of the PD version 2. It was defined that the electricity engineer is responsible of the calibration in the section 3.2. of the PD version 2. However, in the same section, it was defined that TEIAS is responsible of the calibration as it should be. Please explain clearly, which device of calibration is the responsibility of the electricity engineer. **<u>The clarification request is still open.</u>** **<u>Review 2:</u>** The responsibilities of the Electrical Engineers is identified as foloows in the PD: *"Electrical Engineers will undertake the specific actions required by the monitoring plan, i.e. they will measure the electricity generation, the electricity supplied to the Turkish grid by the power plant, the electricity imports and the amount of fuel consumed, if fuel is consumed."*

			The changes were accepted by the validation team. **<u>The clarification request is closed.</u>**
CL11 There are typing errors in the section 3.4. of the PD as follows: *"The project owner, Arsan Enerji A.Ş. has already signed an agreement with TEIAS that includes measuring the amount of electricity that goes to the system accurately."* *"The kwh invoice from Arsan to the purchasers will be cross-checked with metering as well."* Please correct "Arsan" as "Limak".	Table 1 2.d.hh.	Corrections were made. Arsan is replaced with Limak	It was confirmed that the typing errors have been corrected. **<u>The clarification request is closed.</u>**
CL12 There is no information about the ownership of the equipment. Please give information about the ownership of the equipments.	Table 1 2.d.pp.iii.	All the equipments in the project are owned by Limak Insaat. A.S.	The ownership of the equipments was explained in the section 8.1. of the PD version 2. **<u>The clarification request is closed.</u>**
CL13 It has been not defined that who is responsible for emission reductions. Please give information.	Table 1 2.d.pp.iv.	The ownership of the emission reductions will be Limak Insaat A.S.	The ownership of the emission reductions was explained in the section 8.1. of the PD version 2. It was included in the PD that the ownership of the emission reductions will be Limak İnşaat A.Ş. and all the equipments in the project are owned by Limak İnsaat. A.S. **<u>The clarification request is closed.</u>**
CL14 In the section 2.4.-step 3, it is written, *"All in all, option C of "Simple OM" method was adopted as "the total net electricity generation of all power plants serving the system and the*	Table 2 1.6.1.	Relevant correction was made	It has been verified that relevant typing errors were corrected. **<u>The clarification request is closed.</u>**

fuel types and total fuel consumption of the project electricity system" is the only available data in the host country." Please correct "*option C*" as "*option B*"			
CL15 Please clearly include which alternatives are in line with the applicable legislation.	Table 3 1.h.	Relevant correction was made sub step 1 b: As above mentioned all the alternatives available to the proposed Project that provide outputs or services comparable with the proposed VCS project activity are consistent with the mandatory laws and regulations. Outcome of Sub-step 1b: The plausible and realistic alternatives are Alternative 1 (Construction of a thermal power plant with the same annual power output) , Alternative 2 (The proposed project activity not undertaken as a VER project activity) and Alternative 4 (The same service of power supply is provided from the grid (Uzuncayir HEPP is not built)). Based on the above analysis, the proposed project activity is not the only alternative amongst the project participants that is in compliance with mandatory regulations. Therefore, the proposed VCS project activity may be additional.	The alternatives that are in line with the applicable legislation were defined in the PD version 2. Also, the outcome of Sub-step 1b has been added as follows: *"The proposed project activity is not the only alternative amongst the project participants that is in compliance with mandatory regulations. Therefore, the proposed VCS project activity may be additional."* **The clarification request is closed.**
CL16 The Generation License was transferred from "Limak İnşaat Sanayi ve Ticaret A.Ş." to "Limak Yatırım Enerji Üretim İşletme Hizmetleri ve		**Response to review 1:** The latest version of the electricity generation license is added under Annex 2 of the revised PDD.	**Review1**: Please add the latest Generation License to PD. **The clarification request is still**

İnşaat A.Ş." on 26.08.2010. The latest Generation License and Water Usage Agreement were submitted to the validation team. The owner of the both company is same. Please add the new Generation License to annex of the PD.			**open.** **Review2**: The latest Generation License was added to Annex 2 of PD. **The clarification request is closed.**
CAR01 Under section 1.3 of the PD it is stated that the expected annual generation is 318,000 MWh but according to the generation license annual generation is 322,000 MWh. Please clarify the annual generation of the project activity.	Table 1 2.d.d. Table 1 2.d.j.	Although the license of the project states that the electricity production of the project is estimated to be 322 GWh per annum on average, this figure will be realized only if another project is realized at the source side of the river. In addition to this, it is estimated that this project will not be realized before 2019. Therefore, the project owner opts to consider the production capacity as 318 GWh instead of 322 GWh. **Response to Review 1:** If the electricity production is mentioned as 322 GWh this will be misleading for readers of the PD. The expected electricity generation is 318 GWh until 2019 and 322 GWh after 2019 if the so told facility is constructed independent of whatever it is written on the license. However, 1.3 has been corrected to include the information that the electricity production figure is mentioned as 322 GWh on the license. **Response to Review 2:** The paragraph:	**Review 1:** The annual generation of the project activity should be based on the generation license. Therefore, please use the values given in the generation license. **The corrective action request is still open.** **Review 2:** The calculation of emission reduction is based on the value (322 GWh) given in the Generation License. The annual generation given in the Generation License is 322 GWh, but the excepted annual power generation is 318 GWh for the years between 2009 and 2018. The excepted annual power generation is given as 318 GWh in the page 26 and 31 of the PD. Please clearly state the reason of given annual generation as 318 GWh in the PD in order to prevents any misunderstandings. **The corrective action request is still open.**

		"Although it is stated in the energy production license of the facility that the expected average electricity production is 322,000,000 kWh, the annual power generation figure is assumed to be 318,000,000 kWh for the years between 2009 and 2018. This was due to the fact that the production figure in the license is an average figure which can not reflect the fact that the production figure will increase after the construction of another project at the source side of Uzuncayir HEPP. However, as it is assumed in the company presentation (presented to the board) page 27, after 2019 the production is assumed to be increased to 323,000,000 kWh with the construction of another HEPP at the source side of the project" had been added to page 25. The footnote number 45 was added to page 30 which mentions: "The expected electricity production is expected to increase after 2019 with the construction of another HEPP at the source side of Uzuncayir HEPP. Please also note that these figures are different from the expected energy production figure mentioned in the license as the license mentions an expected average figure."	**Review 3:** The explanation was added to PD. **The corrective action request is closed.**
CAR02 Please include the conditions prior to the	Table 1 2.d.h.	As it has been stated above, the project was taken over from DSI. At the time of the takeover, the physical	**Review 1:** Please add this explanation to the PD.

project initiation in the PD.		completion ratio of the project's construction was 99%. Therefore, the project owner almost had no initiative in the construction of the project (some of the construction was completed after the takeover). On the other hand, DSI had reported in the feasibility study of the project which was prepared in 1985 that the project would lead to the transfer of 3258 people, 92 mud brick houses, 20 concrete houses and 12 public buildings. It would also lead to relocation of 24 km road. However, all these reallocations were made by DSI in the past. **Response to Review 1:** Above explanation was added to the PD section 1.7.	**The corrective action request is still open.** **Review 2:** The explanation was added to the PD. **The corrective action request is closed.**
CAR03 Regarding to the generation license the capacity of the project is 82 MWe. However, it is stated as 84 MWm. Please clarify.	Table 1 2.d.j.	MWm stands for mechanical capacity while MWe stands for electrical capacity. The project owner prefers to use MWm. However, for this PDD the installed capacity figure will be replaced with MWe. **Response to Review 1:** All relevant changes were made in the PD.	**Review 1:** The capacity of the project was changed as 82 MW in the PD version 2. However in PD version 02 under Section 1.2. it is still stated that the project is 84 MW. Please correct accordingly. **The corrective action request is still open.** **Review 2:** The capacity of the project was changed as 82 MW in all PD version 3.

			The changes were accepted by the validation team. **<u>The corrective action request is closed.</u>**
CAR04 Relevant regulations related to the project are stated in section 1.10. of the PD as follows: "*The general scheme of the regulations this kind of facilities in line with, are defined by The Renewable Energy Law (Law Number: 5346, Acceptance Date: 10.05.2005) and Environmental Law (Law Number: 2872, Ratification Date: 09.08.1983).*" "Generation License" is given in Annex 2 of the PD and "EIA not required certificate" is given in Annex 5. The date of "EIA not required certificate" 29.11.2007. However, after this date the project capacity is increased. Please require the new "EIA not required certificate" based on the new capacity. The link which refers to *Environmental Law* (http://www.cevreorman.gov.tr/yasa/k/2872.doc) does not open. Please edit the link.	Table 1 2.d.k. Table 4 1.1. Table 4 1.2.	Please see the letter from Ministry of Environment and Forestry in the attachment. As you will see, the old EIA is valid after the installed capacity increase. **<u>Response to Review 1:</u>** The new link is http://www2.cevreorman.gov.tr/yasa/kanun.asp The letter was added to Annex 5.	**<u>Review 1:</u>** The letter from Ministry of Environment and Forestry has been taken after the capacity is required. The letter confirms that EIA is not required for this project. Please add the relevant letter to the Annex 5 of the PD and also present in English. The relevant link was not changed. Please edit the link. **<u>The corrective action request is still open.</u>** **<u>Review 2:</u>** The relevant link was corrected and the relevant document was added to PD. **<u>The corrective action request is closed.</u>**
CAR05 In the section 2.1., it is written that "*The baseline has developed by Gaia Carbon Finance whose contact details are given in the Section 1.17.*" but the contact details of Gaia Carbon Finance are stated in the section 1.15. Please correct it.	Table 1 2.d.v.	The sentence is corrected as: "*The baseline has developed by Gaia Carbon Finance whose contact details are given in the Section 1.15.*"	It was confirmed that relevant typing errors have been corrected. **<u>The corrective action request is closed.</u>**

CAR06 In the PD (power density of the project activity) calculation, A_{BL} (area of the reservoir measured in the surface of the water, before the implementation) has accepted zero. But as indicated in CAR 2, the conditions before the project activity has not been defined. Please give details about the area of the reservoir measured in the surface of the water before the implementation.	Table 1 2.d.x.	As mentioned in CAR2, the project owner had taken over the project where the construction was completed by 99%. However, to be on the conservative side, the A_{BL} was assumed as "0" in calculations.	The project owner had taken over the project where the construction was completed by 99%. However, to be on the conservative side, the A_{BL} was assumed as "0" in calculations. The explanation was accepted by the validation team. **<u>The corrective action request is closed.</u>**
CAR07 The GHG emissions have been quantified for the baseline scenario in the section 2.4. of the PD. However, according to the VCS PD Template baseline scenario quantified should be explained in the section 4.2. Please correct it.	Table 1 2.d.jj.	The baseline quantification was moved to section 4.2	The GHG emissions have been quantified for the baseline scenario has been stated in the section 4.2. of the PD version 2. **<u>The corrective action request is closed.</u>**
CAR08 The GHG emissions have been quantified for the project in the section 2.4. of the PD. However, according to the VCS PD Template baseline project quantified should be explained in the section 4.3. Please correct it.	Table 1 2.d.kk.	The GHG emissions from the project quantification was moved to section 4.3	The GHG emissions have been quantified for the project was included in the section 4.3. of the PD version 2. **<u>The corrective action request is closed.</u>**
CAR09 Please give the GHG emission reductions and removal enhancements for the GHG project quantified.	Table 1 2.d.ll.	Related amendment was done in section 4.4. **<u>Response to Review 1:</u>** The sentence was corrected as "According to Section 4.3. the emission reductions (ER_y) are equal to baseline emission reduction of the same year"	**<u>Review 1:</u>** GHG emission reductions are given in the 4.4. of the PD version 2. However, there is a typing error in the first sentences. Please correct it. **<u>The corrective action request is still open.</u>** **<u>Review 2:</u>**

			The changes were accepted by the validation team. **<u>The corrective action request is closed.</u>**
CAR10 Stakeholder consultation meeting is not mandatory according to the regulations. It is explained that the project managers had been open to face to face communications with local people in order to solve any problem that the project had caused in section 5 of the PD. It should be clarified how the ongoing communication with stakeholders is provided.	Table 1 2.d.nn.	The ongoing communication is undertaken through stakeholder visits to the site or direct contact via telephone.	It has been stated in the PD that the ongoing communication is undertaken through stakeholder visits to the site or direct contact via telephone. The explanation was accepted by the validation team. **<u>The corrective action request is closed.</u>**
CAR11 Frequency of monitoring and reporting and the project period, including relevant project activities in each step of the GHG project cycle are not included. Please submit the feasibility study.	Table 1 2.d.oo.	Relevant activities and dates are included in section 7.	**<u>Review 1:</u>** The timeline of the project activity has been added to section 7 of the PD version 2. The feasibility study has not been send. Please send the feasibility study. **<u>The corrective action request is still open.</u>** **<u>Review 2:</u>** The feasibility study has been send. **<u>The corrective action request is closed.</u>**
CAR12 Table 3 of PD is not in line with Table 1 of ACM002. CH_4 emission for the baseline is not stated in the Table 3. "Construction and operation of HEPP" section in the Table 3 has	Table 2 1.2.6.	Please see the updated table 3 in the PD.	*Baseline:* CO_2 emissions are included in baseline calculation since fossil fuels fired for electricity generation. CH_4 and N_2O emissions are neglected regarding to

not been defined in the Table 1 of ACM002. Please correct the Table 3 of PD according to the Table 1 of ACM002. It is stated in Table 3 that the project is run off river HEPP. However, in the documents about the licenses there is information about the dam. Please clarify. The project density is between 4 W/m^2 and 10 W/m^2 so emission from the reservoir has been calculated in the PD. However, in the Table 3 of the PD it is stated, "The project is run off river HEPP and there is no reservoir in the project design." Please clarify. Please correct the Table 3 of PD according to the Table 1 of ACM002 including the N_2O emissions.			the methodology. *Project Activity:* CH_4 emissions of the reservoir is calculated and deducted from emission reductions since power density is less than 10 W/m^2 but higher than 4 W/m^2. CO_2 and N_2O emissions are neglected regarding to the methodology. Table 3 of the PD version 2 is in line with Table 1 of ACM0002. **<u>The corrective action request is closed.</u>**
CAR13 In the section 1.9. of the PD it is stated that *"The net electricity production (delivered to the grid after losses and consumption in the plant)"* however transmission and distribution should be neglected.	Table 2 1.3.6.	The sentence was corrected as "The net electricity production (delivered to the grid after the consumption in the plant) from the plant is estimated to be 318,000 MWh per annum"	**<u>Review 1:</u>** It was verified that the sentence was corrected. However, the net electricity generation values should be based on generation license. **<u>The corrective action request is still open.</u>** **<u>Review 2:</u>** The changes were accepted by the validation team. **<u>The corrective action request is closed.</u>**
CAR14 Estimated amount of VCUs over the crediting period are given in Table 1 of PD. The emission	Table 2 1.8.4.	The table was upted with the emission factor of 0.614	**<u>Review 1:</u>** Electricity output should be based on the generation value. Please revise

factor is indicated as 0.614 tCO^2/MWh in the section 2.4. The calculation in the Table 1 is not consistent. Please recalculate baseline emission reduction, project emission and emission reduction.		Response to Review 2: All requested changes had been made in the PD. **<u>Response to review 3:</u>** 3. Corrected accordingly. 4. The table format is corrected.	the emission reduction accordingly. **<u>The corrective action request is still open.</u>** **<u>Review 2:</u>** There are some discrepancies. Please clarify the following: 1. OM emission factor is given as 0.661 tCO_2/MWh at the page 51 of the PD. Please revise the value as 0.6615 tCO_2/MWh. 2. BM emission factor is given as 0.457 tCO_2/MWh at the page 53 of the PD. Please revise the value as 0.4576 tCO_2/MWh. 3. CM emission factor is given as 0.559 tCO_2/MWh at the page 56 of the PD. Please revise the value as 0.5596 tCO_2/MWh and recalculate the baseline emission reduction. 4. Please correct the annual electricity output for year 2020 in Table 1 of the PD. 5. It is stated at the page 55 of the PD version 3 as follows: *"However, again according to ACM0002 / Version 11 if the power density (PD) of the hydro power plant is above 10 W/m^2, PEy is 0."* The power density is not above W/m^2. Please clarify.

			<u>The corrective action request is still open.</u> **<u>Review 3:</u>** There are some discrepancies. Please clarify the following: 1. OM emission factor is given as 0.6615 tCO_2/MWh in all PD. OK 2. BM emission factor is given as 0.4576 tCO_2/MWh in all PD. OK 3. CM emission factor is given as 0.5596 tCO_2/MWh in all PD. However, please correct the baseline emission value given at page 54. The baseline emission is given as 179,998 tCO_2e. However, it should be 180,191 tCO_2e. Please clarify. 4. Table 1 format is not clear, hence, the table con not be seen. Since the Table 1 is not clearly stated in the PD, this clarification request will be evaluated later. 5. The statement was removed. OK. **<u>The corrective action request is still open.</u>** **<u>Review 4:</u>** 3. The baseline emission given as 179,998 tCO_2e was corrected. 4. Table 1 was clearly added to the PD,

			The corrective action request is closed.
CAR15 Please state the outcome of step 1b.	Table 3 1.i.	Outcome of Sub-step 1b: The plausible and realistic alternatives are Alternative 1 (Construction of a thermal power plant with the same annual power output) , Alternative 2 (The proposed project activity not undertaken as a VER project activity) and Alternative 4 (The same service of power supply is provided from the grid (Uzuncayir HEPP is not built)). Based on the above analysis, the proposed project activity is not the only alternative amongst the project participants that is in compliance with mandatory regulations. Therefore, the proposed VCS project activity may be additional.	The outcome of Sub-step 1b was added to the PD version 2 and found acceptable by the validation team. **The corrective action request is closed.**
CAR16 Please provide reference for the benchmark rate of %16-%18 by using the risk free rate (Government Bond) and suitable risk premium.	Table 3 1.o.	The benchmark rate was recalculated in the PD. Please refer to section 2.5 step 2.	The benchmark calculation was done to confirm bankers' statements and explained in the PD. The explanation was accepted by the validation team. **The corrective action request is closed.**
CAR17 The period of assessment is given as 50 years in the PD. In PD it is recommended to renew the equipment in every 20 years so please either reflect the renewing costs in the analysis for each 20th year or restrict the IRR analysis with	Table 3 1.o.	The project owner did not consider a separate renewal investment after 20 years. However, the general production expenses include a renewal investment component. The general production expenses calculations are presented in the attached excel file.	The general production expenses calculations are presented in the excel sheet. The explanation was accepted by the validation team. **The corrective action request is closed.**

20 years. Please also do the IRR analysis for 49 years of license period instead of 50 years.			
CAR18 Since the analysis is done for 49 years, there is no need to add fair value as a cash inflow. If the analysis was run for 20 years, the fair value of the project should have been included as a cash inflow.	Table 3 1.o.	The project owner did not consider a separate renewal investment after 20 years. However, the general production expenses include a renewal investment component. The general production expenses calculations are presented in the attached excel file. Therefore, no fair value was added to the cash flow.	The general production expenses calculations are presented in the excel sheet. Fair value was not added to the cash flow. The explanation was accepted by the validation team. **<u>The corrective action request is closed.</u>**
CAR19 1. In PD, it is stated that, the full capacity of electricity generation is expected to start in April 2010. This is equivalent to 9/12 of yearly production which is 318,000*9/12 = 238,500. In the analysis 10/12 of yearly production is taken for a 9 months production. Please correct the production in 2010. Please also give explain why there is a production in year 2009. 2. Although 0.6140 is used in the IRR analysis for the VER revenue calculation, 0.6160 is used in PD. Please make them equal. 3. In the IRR analysis in which VER revenue included, VER revenue is directly added as a cash inflow. In fact, there must be a corporate tax applied to the revenue items. So, please apply corporate tax to the VER revenues.	Table 3 1.p.	1. The 2010 production was calculated with the assumption that one of three turbines will be in production in the whole year as one of the turbines will commence production in 2009. Therefore, 2010 production should be higher than 9 months full capacity production. 2. The emission factor was corrected in the PD. 3. A tax is applied on the VER revenue.	**<u>Review 1:</u>** 1. The explanation was accepted by the validation team. OK 2. The changes were accepted by the validation team. OK 3. It seems that there is no corporate tax applied to the VER revenues. Ex: In 2010 Cash Flow to Equity: --689.426 VER revenue:162.710 x 5€ = 813.550; then the total found is:124.124 However, 20% of VER revenue

			should be paid as a corporate tax.
4. In the section 2.5.-Step 3.a. please review the table names and table headings (Table 15-16). Which one is the projected and which one are the realized sources of funds?		4. The requested amendment was done to the table 16.	4. The changes were accepted by the validation team. OK
5. Please clearly state how Commissions and Interest figures found in the Investment Details part?		5. Details of the commissions and Interest are presented in a separate excel sheet.	5. The explanation was accepted by the validation team. OK
6. Please provide any information how General Production Expense figure is found?		6. Details of the commissions and Interest are presented in a separate excel sheet.	6. The explanation was accepted by the validation team. OK
7. Please give explanation why corporate tax application starts in 2016? Please apply the accounting rules so that there are tax receivables in the financial loss years to be deducted in the coming financial gain years.		7. The tax calculation is amended.	7. The changes were accepted by the validation team. OK
8. Please provide any information or agreement about the DSI contribution and DSI payment schedule?		8. Please find the attached document for the DSI contribution.	8. DSI contribution is not submitted, please send it.
9. In PD, it is stated that 164,414,176.32 TL will be given to DSI as an investment cost and the amount to be paid to DSI is given as 97,865,581$ in the IRR analysis. Please clearly state how 97,865,581$ is found?		9. The exchange rate of 1.2 TL/US$ and 1.4 US$/Euro were used.	9. The changes were accepted by the validation team. OK
10. Please clarify if there is a transmission line cost or not?		10. There is no transmission line cost included in the calculation.	10. The explanation was accepted by

11. Please clarify if VAT's are included in the Investment Costs or not?		11. The VAT is included in the calculations. Total amount of VAT in the investment amount is Euro 2.914.131 The amount is now refunded in the IRR calculation. **Response to Review 1:** The VER incomes are included in the Revenues of the Project. Therefore they are subject to corporate tax. DSI Contribution agreement will be sent separately. **Response to Review 2:** Please see attached Board Decision as the proof.	the validation team. OK 11. The explanation was accepted by the validation team. OK **The corrective action request is still open.** **Review 2:** Tax for VER revenue is applied. DSI Contribution Agreement was submitted to the validation team. The presentation given to the board of management was submitted to the verification team. This presentation dated April 2007 is the basis of the investment decision. The inputs of the IRR calculation are in accordance with the presentation and in line with the similar projects. Please send evidence to show that input values are the basis of the investment decision. **The corrective action request is still open.** **Review 3:** The Board Decision dated 26/04/2007 was submitted to the validation team that is the basis of the investment decision. **The corrective action request is**

			closed.
CAR20 Investment barriers, technological barriers and other barriers have been stated in substep-3a of section 2.5. Investment barriers can be defined as follows; 1- Similar activities have only been implemented with grants or other non-commercial finance terms. 2- No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed VCS project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin. Please give your barrier in compliance with the additionality tool. The data that be used in the IRR calculation can not be use barrier analyses. The Uzuncayir HEPP is originally a DSI (State Water Works) project which started in 1993 and the project will have a 74.0 MW installed capacity. It has been explained in the technological barriers that when the Limak took over the project, they could not increase the installed capacity beyond 90 MW. But after Limak took over the project, the installed capacity increased to 84 MW. Please describe the details in Limitations Due to Project Design. The closest airport to the project area is 120 km (from Elazig) and it has been defined as a barrier in transportation of machinery and	Table 3 1.t.	The financial barrier has been removed from investment barriers and investment barriers section has been cancelled. Financial Barrier: The argument advocates the fact that it is more difficult to get financing for renewable projects compared to alternatives and the deviation from the planned financing structure in realization provides a proof. In addition to this, it is also a fact that carbon finance provided a further security for the financier in this project. Technological Barriers: Section 3 of the Capacity Increase Report Prepared by Limak Dated October 2006 clearly states that the water flow is enough to have a higher installed capacity. However due to technical limitation originating from the facts that tunnel an water intake structures and power house have already been constructed, it is not possible to have any installed capacity higher than 90 MWs. The installed capacity had further lowered along the way due to other technical limitations with the turbines themselves. The project site is located in a security sensitive area. Therefore,	**Review 1:** Financial barrier is still under the investment barrier. However investment barriers can be defined as follows; 1- Similar activities have only been implemented with grants or other non-commercial finance terms. 2- No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed VCS project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin. Please add this explanation about the transportation to the PD. Please give your barrier in compliance with the additionality tool. **The corrective action request is still open.** **Review 2:** ***Financial Barrier*** Availability of Debt Financing and Global Recession: This is not a specific barrier for this type of project activities and it does not prevent the project owners from investing in

equipments for the construction and the power plant itself. Please give detail information about the transportation of machinery and equipments by air. Unstable economic condition in the host country has been defined as a social barrier in the PD. However, it has stated in the investment analysis, too. The data that be used in the investment analysis can not be defined as a barrier.		transportation is a major hurdle for technical staff. In addition to this, transportation of machinery and equipment is also a problem in this sense. The additionality argument related to the stability of the country's economy has been removed. **<u>Response to Review 2:</u>** - The barrier for availability of debt financing had been removed. - The construction of this HEPP has nothing to do with the project owner. The project belongs to another investor. Our argument is not the fact that this risk was not known at the beginning. In fact all risks should be known by the project owner (these are calculated risks). Our argument is the fact that carbon financing had positive effect on the project owner to invest in this project despite these risks. - The high inflation rate risk has a specific meaning for this project as the project owner bears this risk more than any other similar projects through the water usage agreement with DSI. However, the argument had been removed. Response to Review 3:	renewable energy projects. Please clarify. <u>The Expected Increase in the Electricity Production Depends on the Construction of Another HEPP in the Region:</u> It is explained in the PD that another HEPP will build at the upstream of the project and the electricity production will increase after 2019. However, the construction of this HEPP is not under the control of the project owner and the project realization can easily delay. It is understood from this statement that same project owner will built a new HEPP. Please explain why the construction of this HEPP is not under the control of the project owner. In addition, this risk is known at the beginning of the project activity. Please clarify. ***Social Barriers*** <u>High Inflation Rate and Rapid Changes in the Exchange Rate and Their Repercussions on the Project's Cash Flow:</u> High inflation rate is not a specific barrier for this project. At the beginning of the project activity the economic conditions of Turkey is known. Also, this barrier is defined under the social barrier. Please clarify.

		The barrier: "High Inflation Rate and Rapid Changes in the Exchange Rate and Their Repercussions on the Project's Cash Flow" is excluded from the revised PDD.	**The corrective action request is still open.** **Review 3:** ***Financial Barrier*** Availability of Debt Financing and Global Recession: This barrier was removed from PD. High Inflation Rate and Rapid Changes in the Exchange Rate and Their Repercussions on the Project's Cash Flow: It is explained that this barrier was removed. However, it is stated under Financial Barriers. Please clarify. The Expected Increase in the Electricity Production Depends on the Construction of Another HEPP in the Region: It is explained in the PD that another HEPP will build at the upstream of the project and the electricity production will increase after 2019. However, the project belongs to another investor, project may face difficulties in the construction, and project may delay or totally cancel. In this case, electricity production will not increase as thought at the decision time. The explanations were accepted by the validation team. **The corrective action request is still open.**

			Review 4: ***Financial Barrier*** The barrier "High Inflation Rate and Rapid Changes in the Exchange Rate and Their Repercussions on the Project's Cash Flow" was removed. **The corrective action request is closed.**
CAR21 Please clearly show that the identified barriers in sub-step 3a would not prevent the implementation of at least one of the alternatives. It should be in line with the defined barriers in step 3a.	Table 3 1.v.	Outcome of Sub-step 3a: based on the above analysis, there are realistic and credible barriers that would prevent the implementation of the proposed project activity from being carried out if the project activity is not registered as a VCS activity.	The outcome of sub-step 3a was added to the PD version 2 and found acceptable by the validation team. **The corrective action request is closed.**
CAR22 The outcome of Step 3a has been defined in substep the PD as the following: *"In conclusion, sub-step 3b is satisfied because the identified barriers do not apply to Alternative 1. Therefore, subject to outcome of Common Practice Analysis (Step 4), the project is additional."* It can not be decided if the project additional regarding to step 3. Please correct the outcome.	Table 3 1.w.	The sentence has been amended as follows: *"In conclusion, sub-step 3b is satisfied because the identified barriers do not apply to Alternative 1. Therefore, subject to outcome of Common Practice Analysis (Step 4), the project* ***may be*** *additional."* **Response to Review 1:** The relevant change is included in the PD.	**Review 1:** Please include this explanation in the PD. **The corrective action request is still open.** **Review 2:** The explanation was added to PD. **The corrective action request closed.**
CAR23 Barrier analysis have all the substeps as below in step 3 of the PD: 1. Sub-step 4a: Analyze other activities	Table 3 1.x.	Sub Step 4.b is also applied. Please see the related section in the PD.	Sub step 4.b. was added to PD version 2 and found acceptable by the validation team. **The corrective action request is**

similar to the proposed project activity Sub-step 4b has not been applied. Please correct it.			**closed.**
CAR24 The list of the projects has been checked regarding to ref.55 (http://www.epdk.gov.tr/lisans/elektrik/proje/yenilenebilir.xls). Tatar HES project is similar to the proposed project activity. It has been stated in the PD that "This project is also planned to benefit from carbon revenues". Please justify if the Tatar HES project will benefit from the carbon revenues clearly.	Table 3 1.y.	Tatar HES is another project of the project owner. The License of Tatar HES was acquired on 02.06.2005 by the project owner for 49 years. The planned installed capacity of Tatar HES is 100.2 MW and the expected energy production is 364.2 GWh. The project is located at the borders of Elazig and Bingol cities. **Response to Review 1:** Please find in the attached file an official letter mentioning the fact Limak intends to apply for carbon financing in Tatat HES	**Review 1:** Please submit a proof that Tatar HES project will benefit from the carbon revenues clearly. **The corrective action request is still open.** **Review 2:** The letter signed by the Limak is submitted to the validation team. It is indicated in the letter that the Tatar project will benefit from the carbon revenues. **The corrective action request is closed.**
CAR25 Sub-step 4b has not been applied. Refer to CAR 24. If the Tatar HES project does not benefit from the carbon revenues please demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it	Table 3 1.z.	Tatar HES is planned to benefit from the carbon revenues. **Response to Review 1:** Please find in the attached file an official letter mentioning the fact Limak intends to apply for carbon financing in Tatar HES.	**Review 1:** Please submit a proof that Tatar HES project will benefit from the carbon revenues clearly. **The corrective action request is still open.** **Review 2:** The letter signed by the Limak is submitted to the validation team. It is indicated in the letter that the Tatar project will benefit from the carbon revenues.

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 PD should include justification about non-accessibility of data/information.			**<u>The corrective action request is closed.</u>**
CAR26 The efficiency computations are based on total power generation data. However, the Build Margin Option B 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. Therefore, the default efficiency values for new units (built after 2000) given in the "Tool to calculate emission factor for an electricity system-Annex 1" should be used. Taking natural gas as an example, the efficiency values calculated are as follows: 44.9% corresponding to Autoproducers in Turkey. The plant types (combined cycle, open cycle, steam turbine) are not known. Assuming that new plants are combined cycle ones, this efficiency factor is similar to the tool's Old Plants (before and in 2000) figure which is 46%. For new plants, the efficiency is given as 60% in the tool. Hence, the project developers should either provide convincing arguments that the new plants are not combined cycle ones, or use the tool's new plant efficiency factors (employing 60% for plants whose technology is not known in order to be on the	Table 2 1.8.3.	Response to Review 2: The relevant change is included in the PD and baseline calculations	The efficiency factor for the new units given in the Annex 1 of the Tool is used for the calculation of Build Margin emission factor. The revised BM emission factor is calculated as 0.4576 tCO_2/MWh. **<u>The corrective action request is closed.</u>**

conservative side). Please revise the BM calculation accordingly.			
CAR 27 The presentation dated April 2007 and that is the basis of the investment decision given to the board of management was submitted to the verification team. The inputs of the IRR calculation are in accordance with the presentation. The Board Decision dated 26/04/2007 was submitted to the validation team that is the basis of the investment decision. Please also provide external sources (e.g. proposals, agreements) that show the values given in the presentation how are estimated.		Please see the attached sources to verify the estimations given in the presentation.	The DSI Contribution value was also validated through the Water Usage Agreement with DSI. The equipment cost estimated as 33,323,804 € in the presentation was validated through the equipment purchase. The contract price is 24,060,000 € plus 1,510,000,000 JPY. The estimated price was compared with the actual price and there is no big difference between two prices. An assumption excel sheet was provided for the estimated construction costs. The values given in the excel sheet was compared with similar projects and found acceptable. There is no proposal and/or sub-contractor agreement since the construction was done in their self. The construction cost rate is small since the project was taken over when the construction was almost finalized. Even the construction costs are taken as zero, the Equity IRR is still under the benchmark value. An assumption excel sheet was provided for commissions and interest. The values was validated through the public available data and found acceptable. The estimated loan amount was compared with the realized loan. The

			realized loan is less than the estimated value. **<u>The corrective action request is closed.</u>**
CAR 28 According to the *"Tool for the demonstration and assessment of additionality"*, if barrier analysis is used, determine whether the proposed project activity faces barriers that: (a) Prevent the implementation of this type of proposed project activity; and (b) Do not prevent the implementation of at least one of the alternatives. The identified barriers are only sufficient grounds for demonstration of additionality if they would prevent potential project proponents from carrying out the proposed project activity undertaken without being registered as a CDM project activity. 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 the proposed project, "The Expected Increase in the Electricity Production Depends on the Construction of Another HEPP in the Region" is defined as a financial barrier. The investment barriers should be define in line with the tool as follows: • For alternatives undertaken and operated by private entities: Similar activities have only been implemented with grants or other non-commercial finance terms. Similar		The investment barrier given in the previous version of the VCS PD is excluded in the revised verison. Also, the barrier "Limitations due to project design" is also excluded from the revised VCS PD. Last, the barriers "Transportation Problems" and "Security Sensitive Investment Region" are merged and given under "Other Barriers" in the revised VCS PD. Also, reference links are given in the VC PD to show that the region is not secure enough to make such an investment. In addition, a reference link is given in the VCS PD which shows that the main transportation road to the project location (Elazig – Tunceli road) is also not secure, as some armed and bombing attacks have been occurred at that region. This also makes the transportation very difficult and risky for the investor. **<u>Response to Review 1:</u>** Please find explanations in the PD.	**Review 1:** Please argue and validate with evidences that other projects are not happening within the geological region because of these specific barriers – security and transportation barriers. As discussed geological region cannot be limited to a city, but should cover a reasonable region and should be justified. If other projects are being implemented even with these issues, then these issues are not barriers specific to this project activity and cannot be considered credible barriers that prevent the implementation of this project activity. **<u>The corrective action request is still open.</u>** **Review 2:** The project is located in the South East Anatolia Region. It is explained in the PD that the president of TUSIAD that is the largest employer organization in Turkey declares that making investment in South East Anatolia Region is insufficient infrastructure due to security issues. In addition, the Minister of Industry

activities are defined as activities that rely on a broadly similar technology or practices, are of a similar scale, take place in a comparable environment with respect to regulatory framework and are undertaken in the relevant country/region; • No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin. For the proposed project, "Limitations Due to Project Design" and "Transportation Problems" are defined as technological barrier. The technological barriers should be define in line with the tool as follows: • 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 Please explain and demonstrate your barriers in line with tool and Guidelines for Objective Demonstration and assessment of Barriers (EB50, Annex 13).			and Trade also confirms this statement in one of his interview and says that the investors can only gropingly enters the East and south East regions of the country because of the security problems and lack of infrastructure. The Minister gives marble reserves in the region as an example as these reserves cannot be utilized due to security problems. These statements were validated through the references given in the PD. Due to security issues, Tunceli was managed under state of emergency rules for 15 years (1987-2002). In 2010, 35 terrorist incidents have occurred in Tunceli according to the General Staff of Turkish Army records. In the neighbor provinces (Elazig, Bingol and Erzincan), the total number of terrorist incidents is 27. In addition, overall number of terrorist incidents in East and south East Anatolia was 508 only in 2010. All these facts show that the region in which the project is located is not secure for such an investment. These statements were validated through the references given in the PD. In the region, it can be seen that there is not any other comparable project as far as the technology and size are concerned. In Tunceli and its neighboring cities (Elazig, Erzincan

			and Bingol), there are 9 comparable projects. However, only one project is close to completion other than Uzuncayir HEPP. However this project (Konaktepe HEPP) is owned by public. Therefore, the Project proves to be the only private project with a reservoir that is close to completion. These statements were validated through the web site of EPDK (EMRA-Energy Market Regulatory Authority). The statements regarding the barrier were added to PD. **The corrective action request is closed.**