
VALIDATION REPORT

PIONEER CARBON Ltd

***DARICA-1 99 MW Hydro Power
Plant Project, Turkey***

SGS Climate Change Programme
SGS United Kingdom Ltd
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Project Title:

DARICA-1 99 MW Hydro Power Plant Project, Turkey

Organisation:

SGS United Kingdom Limited

Client:

Pioneer Carbon Ltd

Summary:

Pioneer Carbon Ltd has commissioned SGS to perform the validation of the project: DARICA-1 99 MW Hydro Power Plant Project, Turkey.

Methodology used: ACM0002

Version and Date: version 7 from 30/11/2007

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against VCS2007 requirements and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of VCUs.

The report is based on the findings of document reviews, the stakeholder consultation process and responses from the project participants to the findings raised in this report.

The report and the annexed validation describes a total of 30 findings which include:

- 17 Corrective Action Requests;
- 11 Clarification Requests; and
- 2 Observations

With the exception of 2 observations all findings have been closed out satisfactorily. Hence the project will be recommended to the VCS programme with a request for registration.

Subject:

VCS2007 Project Validation

Validation Team:

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Arthur Pelchen –Assessor (local assessment)

Technical Review:

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Abbreviations

ACM	Approved Consolidated Methodology
BM	Built Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon Dioxide
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EF	Emission Factor
EIA	Environmental Impact Assessment
GHG	Green House Gas(es)
HCA	Host Country Approval
HPP	Hydro Power Plant
Int	Interview
IPCC	Intergovernmental Panel on Climate Change
IETA	International Emissions Trading Association
ISHC	Initial Stakeholder Consultation
kWh	Kilo watt hour
LoA	Letter of Approval
MoC	Modalities of communication
MoV	Means of Verification
MP	Monitoring Plan
MWh	Mega watt hour
OBS	Observation
OM	Operation Margin
PDD	Project Design Document
PD	Project Description
PP	Project Participant
VCU	Voluntary Carbon Units
VCS	Voluntary Carbon Standard
VER	Verified emission reduction
MVA	Mega Volt-Ampere
Hz	Herz
RPM	Revolutions per minute

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1. Validation Conclusion

SGS United Kingdom Ltd has been contracted by Pioneer Carbon Ltd. to perform a validation of the project: DARICA-1 99 MW Hydro Power Plant Project in Turkey.

The Validation was performed in accordance with the VCS2007 requirements and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

SGS reviewed of the project description documentation, using a risk based approach and conducted follow-up interviews.

17 CARs, 11 CLs and 2 OBS were raised. The response to CARs and CLs was satisfactory and these were closed.

By addition of renewable electricity generation capacity to the Turkish grid and the generation of electricity with hydro power, the project activity will result in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant VCS2007 requirements and all relevant host country criteria. The project applies methodology ACM0002 version 7 project specific. It is demonstrated that the project 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.

The total emission reductions from the project are estimated to be 2,097,220 t of CO₂e over a 10 year crediting period, averaging 209,722 t of CO₂e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

The project will hence be recommended by SGS for registration with VCS Board.

Signed on Behalf of the Validation Body by Authorized Signatory



Signature:

Name: Siddharth Yadav

Date: 19.06.09

2. Introduction

2.1 Objective

Pioneer Carbon Ltd. has commissioned SGS to perform the validation of the project: DARICA-1 99 MW Hydro Power Plant Project in Turkey with regard to the relevant requirements for VCS2007 project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant VCS2007 and host country criteria 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 seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Voluntary Carbon Units (VCU). VCS2007 criteria refer to the VCS criteria and the VCS2007 rules and modalities and related decisions by the VCS Board.

2.2 Scope and Criteria

The scope of the validation is defined as an independent and objective review of the project description document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against VCS2007 requirements, VCS2007 rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of VCUs.

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.

2.3 VCS Project Description

The construction of the river runoff project Darica-1 Hydro Power Plant is a capacity addition to the Turkish electricity power grid. The project will produce renewable energy using the Melet river by a diversion tunnel without harming the natural ecosystem of the area. The electricity production capacity will be 99 MW.

2.4 The Names and Roles of the Validation Team Members

Name	Role	Affiliate
Dr. Jochen Gross	Lead Assessor	Germany
Dr. Arthur Pelchen	Assessor	Germany

2.5 Level of assurance

The level of assurance of the validation report is reasonable assurance engagements.

3. Methodology

3.1 Review of VCS PD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

A site visit is usually required to verify assumptions in the baseline.

A site visit was performed on 16/04/2008, the results are summarized in Annex 1.

3.2 Follow-up Interviews

Follow up interviews were carried out with project developer, investor and bank to gather additional information. The interviews are reported in Section 5 below..

3.3 Resolution of any material discrepancy

Discrepancies were identified during validation process and resolved during the follow up communication between PP, Bank and validation team. The discussions on findings are reported in Annex 1 to 3 in this validation report transparently.

3.4 Use of the Validation Protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	Ref ID	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements are linked to checklist questions the project should meet.	Lists any references and sources used in the validation process. Full details are provided in the table at the bottom of the checklist.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification Request (CL) is used when the validation team has identified a need for further clarification.

The completed validation protocol for this project is attached as Annex A.2 to this report

3.5 Findings

As an outcome of the validation process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **Clarification Request (CL)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**. A CAR

is issued, where:

- I. mistakes have been made with a direct influence on project results;
- II. validation protocol requirements have not been met; or
- III. there is a risk that the project would not be accepted as a VCS2007 project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of an CL may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and Clarification Requests are raised in the draft validation protocol and detailed in a separate form (Annex A.3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to CLs and Observations.

3.6 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

4. Validation Findings

4.1 Project Design

The project qualifies as VCS project. It is scope 1 Energy industries: renewable energy source; large scale. The electricity generated by renewable source will reduce GHG emissions from the Turkish grid.

The design engineering reflects current good practice in Turkey. Turkey has huge experience with hydro projects. It is not likely that the hydro plant will be substituted during the crediting period by another hydro plant.

In PDD v0 the project description was not transparent, consequently CL#6 was raised to get additional information on project layout and plans. Questions 1 to 4 were designed for local checklist (annex 1) too.

CL#6 was closed after general plan 1:25 000 (ref 23) and revised PDD v4 were provided to SGS. The revised PDD, plans, maps and answers to questions 1 to 4 local checklist express details about project activity transparent and sufficiently.

The concrete upstream cofferdam is part of the project. The dam is the regulator. The regulator has capacity of 700,000 m³ (5 to 6 operation hours). Upstream Topcam dam of other hydro project with bigger reservoir available for flow regulation is not part of the project. A tunnel from regulator of approx. 8500 m length to valve chamber is also part of the project. The penstock connects the valve chamber with the power plant / turbines. The water level difference between regulator and power plant is around 350 m.

The 2 turbines will have total installed power of 99.00 MW.

Total generation predicted 327,690 MWh/year

Turbine type: Francis brand with vertical axle.

Installed power per unit 49.50 MW.

The 2 generators will have total power of 108 MVA. Generator type : Synchronized with three phases.

Power per unit 54 MVA

Power factor: 0.90

Frequency: 50 Hz

Number of pole: 5 binary (10 each)

Number of revolution: 600 RPM

Generator efficiency: 0.98

The project layout was not transparent initially. During local assessment it was verified that the regulator dam will lead to a small flooded area in the steep river valley. The size of this area is visible in the project layout map (ref 33). Only parts of the river water are used, 0.4 m³/s needs to be left in the river according to national legislation. There are no villages and water users between the regulator and the tail end of the hydro power plant. 12 m³/s will be used in the power plant on average, 36 m³/s will be used in the power plant at maximum.

After tail end all the water will be returned to riverbed. There are two more hydro power projects downstream.

The connection to the grid is 21 km long. An overhead cable is used. EIA is required because the line is longer than 10 km. An EIA was finalized in 2008 (not presented to SGS for validation). The stakeholder consultation was carried out on 14.04.2008 for the transmission lines as required for EIA. No objections were raised. The pylons for the grid connection are on public land. The construction of the grid connection was finished in 2008 mainly. The grid connection will also be used by the other hydro projects in the valley.

The following findings on formal issues were clarified with the Project Participants during validation:

The initial PDD (v 0) does not show revision number nor date. As consequence CAR#5 was raised. Revised PDD (1b) and further revisions show date and version no. Therefore CAR#5 could be closed out.

Direct links to information sources were missing initially. Consequently CL#11 was raised. The respond by PP shows factors exactly from reliable information sources IPCC 2006 and IPPC. CL#11 could be closed.

It was identified that table 1 PDD v3 shows a different estimate for emission reductions than excel calculation spreadsheet (ref 12: Proforma Income Statement (Carbon).xls), consequently CAR#24 was raised. The final respond from PP in form of final PDD (Ref 1 d PDD v 4 / 18) and final excel calculation worksheet (Ref 37) presents 209,722 tonnes of CO₂e as prediction of annual emission reductions. These number and the calculations behind are transparent and consistent over all documents. CAR#24 could be closed.

The utilisation of abbreviation "VER" is partly misleading in the eyes of the assessor. Consequently CAR#25 was raised. In response PP expressed that he is aware of the difference between VER and VCU. Finally the utilisation of VER in the final PDD v 4 / 18 is accepted and CAR#25 closed out.

It is stated that local people shall be employed when ever possible. It is assumed that hydro energy experts are not available locale. Therefore training will become relevant to ensure the operation of the plant. To get the necessary information on training and maintenance needs CL#8 was raised. In response to CL#8, a paragraph in Section A.2 PDD V3 has been inserted regarding training of the staff recruited and document ref 36 " training plan for maintenance needs from supplier of HPP" was presented. Therefore CL#8 could be closed.

Initially the project status and the implementation schedule were not transparent. Question Q 5 for the local checklist was designed and CL#9, CAR#15 and CAR#24 were raised to get additional information and to ensure relevant document revisions.

During site visit it was confirmed locally with question 5 that the digging of the tunnel was started in April 2007. Concreting of the tunnel should be finished in September/October 2008, construction of power plant starts in Mai 2008 and will be finished in November and construction of regulator starts in July 2008 and will be finished at the end of 2008 after local assessment. Electrical works will be finished summer 2009.

This information is in compliance with the implementation schedule (table 2, PDD v 4 / 18) which was provided in response to CL#9. CL#9 was raised to assess the risk for delays. To the knowledge of SGS the project realisation is not delayed significantly. CL#9 could be closed.

CAR#15 was raised to ensure a revision of the crediting start date and crediting period from PDD v0. The final PDD presents a crediting period of 10 years starting 01/07/2009. This is in compliance with requirements and project implementation. Consequently CAR#15 was closed.

CAR#24 a) was raised to ensure a revision of inconsistent information on operation start between EIA and PDD v0. The respond from PP made clear that the estimate mentioned in the EIA was done in an early project phase and the information provided in the PDD is correct and in compliance with project implementation. After final information in PDD v 4 / 18 operation shall start in July 2009. Consequently CAR#24 was closed.

The history of PDD development is in compliance with information on early consideration of VCS project development and validation process.

The ownership of the project is discussed in Annex 6 to final PDD v 4 / 18. The license for the generation is seen as proof for the ownership. This was verified along with Ref 10 Confirmation by the host country in form of approval of development plan for hydro project by local authority: T.R. GOVER-NORSHIP OF ORDU Directorate of Public Works and Settlement.

To get a copy of the generation license CAR#2 was raised. The license for generation was presented to SGS in response to CAR 2 (ref 9). The generation license is the official approval that the construction of the HPP is authorized by the authority. Generation is allowed for a 49 year period starting 22/06/2006. The project participant YAPISAN Elektrik Üretimi Anonim Şirketi is identical with license (PP from section A3 PDD v 4 / 18). CAR#2 closed out.

Landowner and host country is Turkey. A LoA and MoC are not relevant for voluntary project activity.

CAR#23 was raised to get a notification of relevant local laws and regulations related to the project and demonstration of compliance with them. This issue was clarified indirectly. Ref 9 generation license and Annex.5 PDD v 4 / 18: EIA AFFIRMATIVE CERTIFICATE are the only relevant documents as approval for legal compliance. All relevant local laws and regulations are taken into account, project is in legal compliance. Ref 21 EIA AFFIRMATIVE CERTIFICATE is identical with Annex 4 PDD.
CAR#23 closed out

Annex 6 of final PDD v 4 / 18 refers to several VCS specific topics.

The project title clearly enables the identification of the project activity. This was verified through site visit along with site map (ref 23) and PDD section A 4.1 Ref. 9: generation license was provided as official approval of the project title as required after VCS 2007.

It is declared by PP that the project does not participate in emission trading schemes and was not rejected under another scheme or program.

The project is not a bundled project of other voluntary GHG projects but there are other hydro power projects in the river valley.

The project is eligible under the VCS and the project contributes to sustainable development by renewable energy generation

4.2 Baseline Selection and Additionality

The project makes use of approved baseline methodology ACM 0002 v7, all applicability criteria are met. The methodology is most applicable for this project. Version 7 is not the most recent version, but this version is not expired (requests for registration to UNFCCC, for CDM projects only, can be submitted until 04/08/2009 with version 7). Recent is version 9 from 13 February 2009. All revisions of ACM0002 from v 7 to v 9 have no impact on this specific project, therefore it was accepted to finalize this validation based on version 7 without requests of any updates in project documents.

In PDD v 0 the description of the project activity was not sufficient and project boundary was not transparent. Consequently CL#6 was raised to get additional information. The respond to CL#6 in form of revised PDD, maps, layout plans and local assessment made the project activity and its boundary transparent. All relevant project elements in the river valley from the regulator dam which directs the water into the tunnel to the electricity generators at the outlet of the water back into the riverbed and the transmission lines for the connection to the grid are part of the project. This was verified along with EIA (Ref 24) ,overview drawing (Ref 23 and ref 33), a profile of energy tunnel and relief plan (ref 34).

The relevant grid for this project is the whole Turkish grid. It is correctly identified inclusive energy imports. The project discusses the identification of the most likely baseline scenario in compliance with ACM0002v 7. For the construction of new hydro project there is only one scenario: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system" version 1. Most recent data about the Turkish grid are presented in Annex 2 to PDD v 4 /18 and supported with links to official and reliable information sources. All information sources were verified by the assessment team by comparison of information sources with project documents and similar calculations from other GHG projects known by SGS. The information sources were crosschecked with the final PDD v 4 / 18 and excel worksheets. The calculation spreadsheet for CM; OM, BM makes use of identical figures (ref 22).

During the identification and calculation of baseline emissions conservative assumptions are taken in form of IPCC 2006 fuel emission factors on the lower end of the 95% confidence interval. All other values for calculation of baseline emissions respective the CM emission factors are absolute, without the opportunity to take a more or less conservative way.

The baseline calculation was closed on 20/02/2008 by JP Morgan Ventures Energy Corporation. Baseline calculations were validated in April / May 2008 based on most recent information at that time. This was the most recent information at time of ER forecast and baseline calculation for PDD development.

To assess the additionality the project makes use of additionality tool as required by ACM0002 v7. The initial assessment in PDD v0 was not transparent and CAR#3 was raised to ensure a revision of PDD and the assessment based on the recent additionality tool version 5.2. Several issues around the additionality assessment are combined under CAR#3 and discussed in the following report section.

The additionality is demonstrated based on barrier analysis. The main barrier which prevents the project implementation is financial barrier.

To get a copy of the investment analysis CL#14 was raised. CL#14 was closed after receipt of the requested analysis (recent version is ref 37, older version ref 12). The main parameters in the investment analysis (investment costs, electromechanical works, other costs, loan, income, tariffs, etc.) have been checked for plausibility by comparison with other investment projects in power sector. The investment analysis was approved by investment bank Yapi Kredi before signature of loan contract. Therefore it was assumed that the analysis does not contain material mistakes.

The investment analysis was not verified in compliance with EB guidance on the assessment of investment analysis (eb41_repan45) due to the fact that the project does not apply the investment analysis to demonstrate additionality of the project.

The discussion of possible alternatives and investment barrier was not sufficient initially. To get more information on alternatives CAR#3 was raised. In response revised PDD v4 presents realistic alternatives in the discussion of alternatives after additionality tool v 5.2. The discussion of project alternatives after step 1 additionality tool presents the project without being registered as VER project and current practice. The project alternative "continuation with current practice" does not face any barrier.

The revised PDD v 3 tells that version 5 of the additionality tool is used, second revision to the final PDD v 4 / 18 makes use of the most recent version 5.2 as requested. The changes between 5.0 and 5.2 are related to guidance on the assessment of investment analysis. The project does not use investment analysis therefore the update didn't lead to relevant changes.

The step "common practice analysis" was missing in PDD v0. In response to CAR#3 PP presented PDD v3 with a common practice analysis. This analysis on page 17 PDD v3 focus on a small region only, therefore a second revision of the common practice analysis was requested. The whole country is relevant, not only the catchment area of the river. PDD v4 shows a common practice analysis where state-owned power plants are excluded from the analysis as they do not face any financial barriers. The common practice analysis expresses that the huge financial risk for private investor makes this project different to other hydro projects. It is assumed that the share of private owned hydro plants remains low in the future and the government will remain the predominant investor in hydro projects. On the other hand it is obviously that massive hydro power capacity addition will take place to increase the capacity of the power grid to cover the growing power demand. The project is not common practice due to private investment. Common practice is governmental investment and governmental owned hydro plants. This was verified along with official documents from TEIAS (references 12 on page 18 PDD v 4 / 18 (10 years Projection of Generation and Installed Capacity for Turkey, 2008-2017, TEİAŞ) and share of private hydro generation (1.9 % in 2007) compared to total generation 2007.

The share of hydro capacity shall remain constant until 2020 after the public information on UNFCCC web page on the power grid development (pg. 123 & 124; Chapter.5.Projections and Mitigations Scenarios, First National Communication of Turkey on Climate Change, January 2007, (<http://unfccc.int/resource/docs/natc/turnc1.pdf>)). Initially the link does not work and CL#26 was raised. The final PDD v 4 /18 shows foot note 4 and direct web link to information source as requested. Consequently CL#26 was closed out.

The project started before the validation therefore the early consideration of VCS project was assessed seriously. To do this the project history and the board decision to go ahead with the project after VCS is relevant. CL#13 was raised to get a copy of the protocol. The respond to CL#13 made clear that carbon revenues were taken into account just to improve the cash flow, but carbon revenues are not the key indicator for the Board decision to realize the project or not. Based on the board decision the additionality

could not be accepted. In other words the protocol of the board meeting is not sufficient as proof for the additionality of the project. The board has taken into account the potential income from carbon revenues but this is not the key criteria for the decision to realize the hydro project.

The risk assessment of investment bank (Yapi Kredi) is more important for the assessment of the additionality of the project.

CAR#3 was also used to get more information about the investment bank decision (Yapi Kredi) to spend the debt for the project. Especially the link to carbon revenues as key indicator in their decision process was assessed by interview. The response from Yapi Kredi made clear that investment barrier is overcome by additional income from credits. The investment decision was based on this additional income (ref 29, ref 30).

The question if the carbon revenue have been taken into account seriously during the decision of the bank on the debt was answered on 09/01/2009 by Arzu Özgiray Kiral the Group Head of Yapi Kredi.

He expressed that the bank deems hydroelectric power plants as high risk bearing projects due to the significant construction risk involved and the potential for overrunning costs. For apparent reasons, the construction risk is further exacerbated in projects with particularly arduous project plans such as a dam construct or, more precisely, the notably lengthy energy tunnel (9 km) required for the Darica Project. In effect, construction is the most significant risk component of hydroelectric power plant projects. Consequently all potential revenues and risk reduction mechanisms are carefully considered during the underwriting process. As such we have assessed carbon emission credit sale revenues as part of the potential revenue streams of the Darica Project. As part of the potential project revenues, they constitute part of our security package and are considered as a component of the project revenue stream.

Arzu made very clear that expected carbon revenues played a significant role in the decision process for balancing that cost increase with the additional income from the carbon credit sale revenues of Darica HEPP (ref 29).

The question if Yapi Kredi would end up at the same decision to invest in the Darica Hydro Project without carbon credits was answered by Arzu Özgiray Kiral the Group Head of Yapi Kredi, on 23/02/2009. He expressed that the project was presented with carbon revenues. The project without potential carbon revenues was not assessed. Without additional revenue from carbon revenue the project may not be approved (ref 30)

The income from carbon credits over the first 10 years is equal to 18 % of initial investment and seriously taken into account. The investment will be covered with own capital from developer (=34%) and debt (=66%) from Yapi Kredi.

The size of income from credits compared to the debt volume makes it totally clear that the additional income reduces the risk for the bank significantly.

The investment barrier as proof for the additionality was accepted based on interviews with Arzu from the investment bank reported above.

CAR#3 was closed out finally with respect to several issues around the additionality assessment.

CL#9 and CAR#15 were raised to get more information about the project history and the implementation schedule. In response to CAR#15 the project start date was revised (financial closure) to 28/02/2007 and the implementation schedule was reported in PDD v 4 on table 2 in response to CL#9. The schedule was confirmed by local assessment (see above) the financial closure by letter from investment bank Yapi Kredi (ref. 41). This information is in compliance with the implementation schedule (table 2, PDD v 4 / 18) which was provided in response to CL#9. CAR#15 and CL#9 could be closed out after the revisions.

4.3 Application of Baseline Methodology and Calculation of Emission Factors

Initially the application of ACM0002 v7 was wrong. Project emissions were not taken into account. CAR#21 was raised to ensure a revision. In response to CAR#21 PP presented revised PDD v 4 / 18 (Ref 1d) inclusive revised MP. For the ex-ante prediction of emission reductions project emission from diesel generator are neglected, they are not relevant (de minimis). The uncertainty in the prediction with respect to

variability of water flow regime is several times higher in scale than CO₂ emission from diesel consumption. Project emissions are taken into account for monitoring as required. After the revision CAR#21 was closed.

The main information source for grid figures to calculate the emission factor is TEIAS from Turkish government. 2006 IPCC is used for EFs for different fuels. It was approved during site visit and through web links presented in PDD that figures used are most recent.

The Calculation of the combine margin emission factor after grid tool v 1 was not carried out in a conservative way. Therefore CAR#1 was raised. The revised PDD V3 (ref 1b) and the revised calculation (ref 22) show the right values for the EF but total emission 2003-2005 shown in PDD v3 are wrong (different from excel calculation sheet). The second respond to CAR #1 in form of PDD rev 4 shows consistent information than excel calculation spreadsheet. The OM EF is now 0,655 t CO₂/MWh and the BM EF 0,624 t CO₂/MWh leading to a CM EF of 0,640 t CO₂/MWh in PDD v4. These are the correct values. Therefore CAR#1 was closed out.

Leakage emissions are not relevant for this project and presented as 0 in the PDD in compliance with ACM0002 v 7.

Finally all methodological choices have been explained, are transparent and correct. The OM simple after grid tool v 1 is used ex-ante for 3 year weighted average, option c (total generation / total fuel consumption), BM has been calculated ex-ante using the most recent data available. (Option 1) and CM is calculated with correct weights for hydro project.

The baseline information is presented as Annex 2 to the final PDD v / 18 and are verified against public available grid information. Direct links are presented in PDD.

Uncertainties are not addressed in the prediction of ERs. Uncertainties in the prediction are mainly seen with respect to potential variations in water flow regime. Only information from official and reliable information sources and conservative values are used correctly in the calculation spreadsheets.

All parameters and equations used for the ex-ante calculation of baseline and EF are in compliance with ACM0002 v7. This was approved by comparison of methodology with calculation spreadsheets and PDD. Calculations are correct in the excel file ref 22 (baseline grid EF).

After ACM0002 v 7 PP the ERs have to be calculated after equation 11: $ER = BL - PE - LE$.

The calculation of the proposed generation is not clear. Consequently CL#19 was raised. In response to CL#19 screen copies along with explanation of calculation were presented to SGS and verified (ref 17 in combination with ref 20). Consequently CL#19 closed out.

The PDD v 4 (ref 1c) showed different emission reductions than excel sheet (ref 12). CAR#24 was raised to ensure relevant changes in the PDD. The final PDD v 4 / 18 (ref 1 d) in response to CAR#24 presents correct information on predicted emission reduction consistent to all documents. CAR#24 closed

It is argued in PDD v0 that there are no project or leakage emissions. Therefore the ERs are simple generation multiplied with CM EF. This calculation is done correctly but it is not demonstrated that project emissions are 0. Consequently CAR#21 was raised. The final PDD v 4 / 18 along with MP in response to CAR#21 made clear that project emission will be taken into account for diesel consumption from generator as required. CAR#21 closed out

CAR#27 was raised to ensure formal revisions with respect to units, punctuation and transparency of formulas used. The respond to CAR#27 in form of final PDD v 4 / 18 and calculation spreadsheet (ref 1d and Ref 37) show annual ERs 209,722 Tonnes CO₂ transparently. The calculations are in compliance with ACM0002 v7 and all information sources are consistent. CAR#27 closed

The prediction uses same formula for calculation of ERs than the monitoring plan.

The project will result in fewer GHG emissions. CAR#28 was raised to ensure correct utilisation of PDD template. Tables in sections A 4.4 and B 6.2 PDD v0 are not applied correctly. PP provided revised documents in response to CAR#28. In final PDD v 4 /18 sections A 4.4 and B 6.2 are applied correctly. In the first year only the share from July to Dec.2009 and in the last year the share till the end of crediting period of 10 y is presented.
CAR#28 closed

The projection of ERs is in line with planning, but crediting period was not defined as required in PDD v0. CAR#15 was raised to ensure a revision of crediting period. The revised PDD v3 shows 10 year period as required by VCS. The final respond to CAR #15 by PP is correct. The definition of project start date, start of crediting period (01/07/2009) and length of crediting period is correct.
CAR#15 closed

The annual ERs are calculated to 209,722 Tonnes CO₂ transparently (Ref 1d and Ref 37)

4.4 Application of Monitoring Methodology and Monitoring Plan

Initially the application of ACM0002 v7 was wrong. Project emissions were not taken into account. CAR#21 was raised to ensure a revision. In response to CAR#21 PP presented revised PDD v 4 / 18 (Ref 1d) inclusive revised MP in Annex 4 to PDD. Project emissions from diesel consumption for electricity generation are relevant for monitoring and are taken into account as required in revised documents. After the revision CAR#21 was closed.

The project will monitor the net electricity supplied to the grid directly and diesel consumption. All monitoring parameters will be measured.

Monitoring of generation will be done by the project and TEIAS and will be basis for the payment to the project investor. Data on energy generation will be monitored continuously by redundant metering devices. Each month, an officer from TEIAS and the electrical engineer of the plant will record the reading. The collected data will be kept by YAPISAN A.Ş. during the crediting period and until two years after. Maintenance and calibration of the metering devices will be made by TEIAS every two years. Tolerable uncertainties are regulated by TEIAS. If the difference between the readings of two devices exceeds 0.2%, maintenance will be done before waiting for two years

The monitoring of electricity generation is in line with current good practice and in compliance with TEIAS requirements.

The direct monitoring of net electricity supplied simplifies the monitoring. For this voluntary activity this project specific application of ACM0002 v 7 is accepted.

Only ERs and PEs are relevant as GHG indicator for hydro project without reservoir.

CM EF is calculated ex-ante and fixed over the crediting period.

CL#12 was raised to get more information on the proposed monitoring. The MP should be more precise with respect to monitoring personnel and intervals. The revised information on monitoring in final Annex 4 PDD v 4 / 18 are sufficient to assess that it is likely that high quality monitoring will become possible. Never the less relevant information on location of power meters for monitoring of net electricity supplied to the grid, diesel consumption monitoring and procedures as addition to the MP are still missing:

- for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)
- dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems
- project performance reviews before data is submitted for verification, internally or externally

CL#12 was not answered completely to the satisfaction of the assessment team therefore some open issues have been transformed in observation OBS I to ensure that relevant information on meter location and procedures will be developed and implemented before start of crediting period. This will be verified during first verification of emission reductions.

OBS I: Please present location of power meters for monitoring of net electricity supplied to the grid, information (calibration, maintenance, location, typ, etc.) on meter for diesel consumption and develop and implement procedures as addition to the MP before start of crediting period for:

- **day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)**
- **dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems**
- **project performance reviews before data is submitted for verification, internally or externally**

Quality assurance routines are discussed in the PDD but relevant procedures to ensure the proposed high quality monitoring are missing in the final project documents. Consequently the open issue from CL#12 on QA/QS measures as internal audits, management review, continuous improvement etc. is transformed in OBS I

In general, responsibilities for monitoring are clear from metering of parameters to preparation of annual monitoring reports. The responsibility for VCS registration and periodic reporting is not expressed in MP. CL#12 was raised to get more information about this issue. The revised MP in final PDD v 4 /18 expresses the responsibility for reporting and contact to VCS too. Consequently CL'12 could be closed with respect to this point.

It was identified that relevant procedures as addition to the MP are missing for training of monitoring personnel. The revised MP in final PDD v 4 /18 along with document from supplier on maintenance training (ref 36) provides the necessary information. Consequently CL'12 could be closed with respect to this point.

Extensive training and maintenance efforts are required. This is reflected in the project design document.

During site visit it was identified that there is a planning for a second tunnel on tributary river that will provide its water to the turbines of Darica-1 project too. To ensure that future revisions of project and MP are taken into account OBS II was raised:

OBS II: During site visit it was identified that there will be another regulator (Güde) and second tunnel on tributary river, which is not yet under construction, but that will also provide its water flow to the turbines of Darica-1 project. The layout of the turbine with 99 MW is geared towards the combined stream of both tunnels. Decision on implementation is pending. If the project is realised the PDD and the MP has to be re-validated.

4.5 Choice of the Crediting Period

Initially the crediting period was not in compliance with VCS requirements in PDD v0. CAR#15 was raised to ensure a revision of the crediting start date and crediting period. The final PDD v 4 / 18 presents a crediting period of 10 years starting 01/07/2009. This is in compliance with requirements and project implementation. Consequently CAR#15 was closed.

The project start date, start of crediting period (01/07/2009) and length of crediting period is correct and in compliance with VCS requirements. The lifetime of the equipment (49 y) exceed the crediting period (10 Y) 5 times.

The project is not registered in other registry nor applying for carbon credits under other schemes. This is reported in annex 6 to final PDD v 4 /18.

4.6 Calculation of GHG Emissions

The calculation of GHG emission during the crediting period will be done with project specific applied methodology ACM0002 v7. This is accepted for the voluntary project. The necessary CM EF is calculated ex-ante according to the recent grid tool and based on reliable and conservative information.

The prediction of emission reductions is based on reliable information sources and conservative assumptions on future water flow regimes. It is not possible to quantify the uncertainty of the prediction.

The predicted annual emission reductions are 209,722 Tonnes CO_{2e}.

4.7 Environmental Impacts

In PDD v0 the environmental impact is not discussed sufficiently in section D, The impact of the project on water balance and downstream users is missing. Interviews during site visit and the respond to CAR#16 in revised PDD v 4 / 18 provided additional information on environmental impacts of the project.

EIA is a mandatory step in Turkey to get all relevant permits and licenses. EIA is carried out by officially approved organizations only.

To ensure relevant document revisions CAR#16 was raised. In response PP provided a copy of EIA (ref 24). CAR#16 could be closed afterwards. Upstream and downstream impact on flora and fauna is assessed in section D 1 PDD v4. The impact is managed in compliance with legislation.

The official approval of EIA from Ministry was not available initially. CL#17 was raised to get a copy. CL#17 was closed after receipt of the document.

The official approval of EIA was presented in response to CL#17 as Annex 6 to PDD v3. Annex 5 and revision of section D in the final PDD v 4 / 18 provides sufficient information on environmental impacts.

The project is in compliance with environmental legislation.

4.8 Comments by Local Stakeholders

In PDD v0 section E the summary on stakeholder consultation is not sufficient. Consequently CL#18 on and CAR#4 were raised.

In response to CAR#4 the section E in PDD v 3 was revised and new information provided. The local stakeholder consultation has taken place on 19.10.2006 at Derinçay Village. The comments received were reported and taken into account.

International stakeholder consultation has not taken place. This is not required after local legislation, VCS and ISO 14064 -2.

CAR #4 was closed out.

In response to CL#18 the EIA (ref 24) was presented as evidence. Stakeholder consultation is mandatory during EIA. The official approval of EIA by the ministry of forestry and environment is seen as approval of the stakeholder consultation (Annex 5 to final PDD). The stakeholder consultation is in compliance with legislation.

CL#18 closed

5. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
16/04/2008	Kemal Demirkol,	Project Manager, Pioneer Carbon	Application of ACM 0002 v7, Baseline calculation
16/04/2008	Murat Uzuner,	Site Manager, Yapisan Elektrik	Project layout
16/04/2008	Fatih M Cavli,	Project Manager, Yapisan Elektrik	Project history, boundary
16/04/2008	Ahmet Raci Sezgin,	Electricity Engineer, Yapisan Elektrik	Technical details
20/04/2009	Tom Morton	Executive Director Environmental Markets J.P. Morgan ClimateCare	Application of VCS requirements
09/01/2009 23/02/2009	Y.Arzu ÖZGİRAY KIRAL	Group Head Project and Structured Finance Yapı ve Kredi Bankası A.Ş.	Investment decision

6. Document References

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

Ref	Title
1a	PDD v0 initial PDD
1b	PDD v3
1c	PDD v4
1d	PDD v4 / 18 final PDD

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

2	Darica_electricity statistics_reference.xls
3	J. Enerji.doc (reference xy in PDD)
4	ACM0002 v 7.pdf
5	Additionality_tool v5.2.pdf
6	EB35_repan12_Tool_grid_emission[1].pdf
7	VVM (1)
8	Voluntary_Carbon_Standard_2007.1
9	Generation Licence
10	Approval_Dev_Plan.pdf
11	Accreditation for EIA assessments.pdf
12	Proforma Income Statement (Carbon).xls
13	Env_Status_of_Tokat Province_2005.doc
14	reference 18_PDD_temev_IRR.pdf
15	9_INFORMATION REGARDING PUBLIC FUNDING.pdf
15	rev1 INFORMATION REGARDING PUBLIC FUNDING.pdf
16	admin_board_desicion.pdf
17	ElectricityGeneration_Calc.doc
18	ISC_Report.pdf
19	eurobond_rates.pdf
20	Darica I Isletme-p1.pdf & Darica I Isletme-p2.pdf
21	EIA Affirmative Certificate
22	Darica_CM_calculation_2006_acm0002v7_final_Draft_v4.1.xls
23	1_Overview Drawing.JPG
24	2_EIA_eng.pdf
25	ISO 14064-2 (2006)
26	ISO 14064-3 (2006)
27	¹ Chapter.5.Projections and Mitigations Scenarios, First National Communication of Turkey on Climate Change, January 2007, (pg. 121-157) (http://www.undp.org.tr/Gozlem2.aspx?WebSayfaNo=531)
28	development of Turkey's installed capacity
29	Yapikredi declaration on ERU.htm
30	Yapikredi on criteria investment decision
31	Darica Proforma Income Statement (Carbon)_sensitivity.xls
32	topograph map 1-25000 DARICA.JPG
33	DARICA-project layout map 1-25000.pdf
34	profil energy tunel Darica.xls
35	Clarification VCS PD template utilization.htm
36	Darica Maintenance Training.pdf
37	Darica Financials 090420.xls
38	Darica CERTIFICATE OF TITLE.doc
39	090420 Darica CM_calc.xls

- 40 VCS respond Clarification.htm
- 41 Letter from Bank confirming date of Financial Close

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A.1 Annex 1: Local Assessment

Local Assessment Checklist

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for DARICA-1 99 MW Hydro Power Plant Project, Turkey (CCP.Vol0264)

It serves as a “**reality check**” on the project that is completed by the local assessor Dr. Arthur Pelchen

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
1. It is not transparent if the concrete upstream cofferdam at the crest altitude of 642.75 meters (holding the silt from upstream Topçam Dam) is part of the project.	Yes the Dam is the regulator. It is part of the project. A Tunnel from regulator 8500 m to surge tank (70 m high). 700.000 qm capacity in the regulator (5 to 6 h operation) Water level difference between regulator and power plant around 350 m. Upstream dam of other hydro project with bigger reservoir available for flow regulation.	Interview Copy of a map (1:25.000) Overview drawing Excel Sheet on elevations	SD to provide pdf of overview drawing done
2. The components and facilities used in the project are defined in the PDD, but it is not clear if the river will be impound or if only parts of the river water in the Topcam Dam downstream are bypassed.	0,4 qm/s needs to be left in the river according to national legislation. There are no villages and water users between the regulator and the tail end of the hydro power plant. 12 qm/s will be used in the power plant on average 36 qm/s will be used in the powerplant at maximum After tail end all the water will be returned to riverbed, but there are two more hydro power projects down stream.	Interview Copy of technical data included in EIA	SD to provide EIA-Document done

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
3. The lay out of the project from the technical point of view is not clear. Please check the project site physically and find out the location and function of the proposed dams and other components like Karı ca regulator, a diversion tunnel, the surge chamber, penstock, power plant building and switchgear areas. If possible collect a site plan with all installations.	Project management shows a copy of a 1:25000 map and a overview drawing, that show all of the components. The structure and the documents were explained to local assessor. This clarifies the planning and the project design. Additionally there will another regulator (Güde) and tunnel on tributary river, which is not yet under construction, but that will also provide its water flow to the turbines. The layout of the turbine with 99 MW is geared towards the combined stream of both tunnels. In the moment the waterflow is still measured. Decision on implementation is pending. Therefore electricity production in the first year(s) will be reduced. PD will amend calculations accordingly.	Interview Copy of a map (1:25.000) Overview drawing	See 1
4. The connection to the grid is not clear. Please find out how the connection will look like.	21 km are needed to connect to the grid. An overhead cable will be used. EIA is required, because the line is longer than 10 km. An EIA is under preparation and is expected to be finalised before the end of August 2008. The stakeholder consultation was carried out on 14.04.2008. No objections were raised. The pylons for the grid connection will be on public land. The construction of the grid connection will be finished by end of August 2008. The grid connection will also be used by the other hydro projects in the valley.	Interview	SD to provide pdf of EIA for grid connection done

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
5. The recent status of the project is not clear. Has construction work started already?	Project started April 2007 with the digging of the tunnel. This is finished now. Concreting of the tunnel is going on and will be finished in September/October 2008. Construction of power plant starts in Mai 2008 and will be finished in November. Electrical works will be finished summer 2009. Construction of regulator starts in July 2008 and will be finished at the end of this year.	Interview	SD to provide a schedule with milestones done
6. Generation Licence from EMRA is missing, please collect a copy.	There is a generation license from the 22.06.2006.	Interview	PD to provide pdf of generation license. Done.

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
7 Investment analysis is necessary for validation of main barrier and funding issue (ODA). Please collect a copy and a copy of the loan contract with investment bank	Investment analysis was explained by and discussed with PD. Loans from two banks. One acting as an intermediary for World Bank Loans for renewable energies. Supposedly the interest rate for the world bank loan is not (much) lower than the other loan.	Interview Excel file "Darı ca Proforma Income Statement (Carbon)_sensitivity.xls"	PD to provide updated and translated financial calculation. Open done PD to provide evidence for input data in financial calculation (contracts, invoices, price quotations) Open done PD to provide statement by bank that states that only electricity and VER income was accounted for. Open Done
8. It is not clear if the project is in compliance with the legislation. Please collect the final construction licence from the ministry of forestry and environment as integral licence which requires a long list of approvals from several authorities.	No development plan for the region yet. This means that the licensing process is different. There is no construction license required. Project managers applied for the integration of the site into future development plan with ministry of construction. This was granted in the beginning of 2007. Additionally they applied for the same in the regional authorities. This is pending.	Interview	PD to provide pdf of the approval for the development plan. EIA done

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
9. Please collect a copy of the EIA. The impact on water balance and downstream users is not shown in the PDD.	EIA is available in english language.	Interview Pdf-File "DARICA_CED_ing.pdf"	PD to provide pdf of EIA. done
10. ISC report is missing, please collect evidence for invitation and advertising, comments received, list of participants and content of project explanations, inclusive promises made and description of the impact on the locals and the environment.	Stakeholder consultation was also used for the EIA and was performed by the consultancy that does the EIA. No staff from Pioneer Carbon took part. Project manager from Bilgin took part. Procedure for consultation is defined in regulation on EIA. Announcement in newspapers, contact to local headmen via local authorities.	Interview	PD to provide report of stakeholder consultation and approval by ministry of environment Done
11. Please interview the headman's from the villages impacted by the project. Please find out if all comments from local stakeholders have been taken into account by the PP.	N/A; no villages impacted by project, no villages between regulator and hydro power plant; no water use in between EIA stakeholder consultation according to national requirements (see 10).	N/A	OK, done
12. Please find out if TOPÇUOĞLU Madencilik San. Ve Tic. Ltd. Sti., is (competent) approved by the ministry of forest and environment to prepare EIA of hydro projects. Please collect a copy of the approval from Ministry of forestry and environment that the EIA is approved.	Accreditation is listed on the homepage of the ministry of environment and forestry and can be checked there	Interview	SD to provide copy of accreditation TOPÇUOĞLU Madencilik San. Ve Tic. Ltd. Sti or a screenshot of the homepage done
13. Please collect a detailed plan/map of the project location. With figure 2 PDD it is not possible to identify the village of the ISC and the project site.	Requirements were discussed with PD.	Interview	Amended PDD done

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
14. It is not clear if the used project title clearly enable to identify the unique project activity. Local Assessor has to check if the title enable the unique identification	See 13	See 13	See 13 done
15. Common practice analysis as part of additionality assessment is missing in PDD. Consequently CAR K was raised. Please collect a copy of the common practice analysis	Necessity discussed with PD.		PD to provide a common practice analysis done.
16. Please collect a copy of board decision to go ahead with the project after VCS	Supposedly Pioneer Carbon negotiated on a term sheet prior to the decision to invest in the project.	Interview	PD provide Board decision and E-Mails on negotiations between Bilgin and Pioneer Carbon Done
17. Please find out if second hand equipment will be used. This is relevant to assess leakage of the project and technology transfer	All the equipment will be purchase new from Voith Siemens. Leakage can therefore be excluded.	Interview	See also 7 Done
Added by APE during site visit:			
18. How was the electricity generation estimated? (see also 3)	The generation has been estimated from waterflow via specialised software.	Interview	PD to provide screenshot or output from the software Done

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
19. How many people are employed during construction?	Around 350, 20 unqualified workers from local villages.	Interview	OK
20. Sustainable benefits?	Economy based on hazelnuts, not affected by project, direct and indirect employment effects; better access via the road to their villages; road was built for the upstream hydro power plant (Toplam)	Interview	OK
Comment 16 in PDD		Interview	PD to provide document with marks and translation done

A.2 Annex 2: Validation Protocol

Table 1 VCS PD

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A. General Description of Project Activity					
A.1. Project Title					
A.1.1. Does the used project title clearly enable to identify the unique VCS activity?	1b 23 9	DR	The project title clearly enables the identification of the project activity. This was verified through site visit along with site map (ref 23) and PDD section A 4.1 Ref 9: generation licence was provided as official approval of the project title as required after VCS 2007. Respond to CAR#20: The signed copy of Terms and Conditions for the VCS Program 2007 is missing. The VCS program manager responded (ref 40) that a signed copy of T & C is no longer mandatory. Consequently CAR#20 was closed.	Site visit Annex 1 to val. report question no 14 CAR#20 closed	Y CAR#20 closed

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A.1.2. Are there an indication of a revision number and the date of the revision?	1 a 1 b	DR	No, PDD v 0 does not show revision number nor date Respond to CAR#5: Revised PDDs (1b) shows date and version no. Respond to CAR#7: The official respond by VCS (ref 40) declares the possibility to use the CDM PDD template.	CAR#5 CAR#7	Y CAR#5 closed out CAR#7 closed out
A.1.3. Is this in consistency with the time line of the project's history?	1	DR	PDD v0 from 04-04-2008 as final draft available History of PDD development is in compliance with project and validation process	Open	Y
A.2. Type/Category of the project					
A.2.1. What is the project category which is part of a GHG program that has been approved by the VCS Board?	1	DR	N.A. no GHG Program	N.A.	N.A.
A.2.2. Is the project a bundled project?	1	DR	No, the project is not a bundled project of other voluntary GHG projects but there are other hydro power projects in the river valley.	Y	Y
A.3. Description of the Project Activity					

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A.3.1. Is the description delivering a transparent overview of the project activity(ies)?	1	DR Site visit	No, the project description is not transparent, consequently CL#6 was raised to get additional information on project layout and plans. CL#6: Please provide geographic coordinates for turbines, geographic area presented in PDD is approximately 100 km² large. It is not possible to identify the unique project site. Several issues have to be verified during site visit. See questions 1 to 4 in annex 1 CL#6 closed, general plan (ref 23) provides overview, PDD v4 presents project area and answers to questions 1 to 4 local checklist express details about project activity.	CL#6 Reality check during site visit required	Y

A.3.2. Is all information provided in compliance with actual situation or planning?	1a	DR	Information on project planning is in compliance with recent project status. This was confirmed by local assessor.	CL#11	CL#11
	1b	Site visit		CAR#24	closed
	2		Project contributes to sustainable development by renewable energy generation	CAR#25	CAR#24
	9			Site visit	closed
	12		Not all information sources are available for validation, some direct links are missing.		CAR#25
	24		CL#11: Direct links to information sources from IPCC 2006 and IPPC are missing Respond PP shows factors exactly from reliable information sources IPCC 2006 and IPPC, CL#11 closed		closed

A.3.2. continued			CAR#24: inconsistent information: EIA (ref 24) tells operation start is scheduled 2010- this information is not consistent to other in-formation sources (crediting shall start on June 2009 after PDD); table 1 PDD shows annual estimate of ER 214,640 tonnes of CO2 e- excel calculation spreadsheet (ref 12: Proforma Income Statement (Carbon).xls) shows different value 209,722. Please provide consistent documents. After revision of PDD, Start of operation and crediting period as well as predicted emission reduction presented in final PDD is correct. CAR#24 closed CAR#25 (24.09.2008): for VCS 2007 projects are VCUs not VERs. Please correct documents. Final PDD (Ref 1 d PDD v 4 /18) uses term VER, VCU is not used. Technical terms VCU and VER defined correctly, application in PDD could be improved but not essential. This is accepted for this voluntary project. Final PDD presents annexes as required by PD template. CAR#25 closed		
A.3.3. Is all information provided consistent with details provided in further chapters of the VCS PD?	12 24	DR Site visit	See A 3.2 CAR#24	CAR#24	CAR#24 closed

A.3.4. VCS 2007 (ISO 14064-2) chronological plan	1b	DR	Plan starts with construction start, financial closure is unknown. See CAR#15 (crediting period) for cross reference and B 8.3 below Respond to CAR#15 in form of final PDD (Ref 1 d PDD v4 / 18) defines project start date, start of crediting period and length of crediting period correctly. CAR#15 closed	CAR#15	CAR#15 closed
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A.3.5. VCS 2007: In addition the VCS PD shall include notification of relevant local laws and regulations related to the project and demonstrate compliance with them.	10 21		Completeness check will be finalized after revision of PDD v3 CAR#23: notification of relevant local laws and regulations related to the project and demonstration of compliance with them is missing. Respond to CAR#23 indirectly tells that only EIA affirmation and generation license are relevant laws and regulations. This was accepted and CAR#23 closed CAR#2: Generation licence is missing The generation licence sent in response to CAR#2 on 15/08/2008 is the official approval that the construction of the HPP is authorized by the authority. Generation is allowed for a 49 year period starting 22/06/2006 CAR#2 closed out Confirmation by the host country in form of approval of development plan for hydro project by local authority: T.R. GOVER-NORSHIP OF ORDU Directorate of Public Works and Settlement (ref 10) Ref 21 EIA AFFIRMATIVE CERTIFICATE (identical with Annex 4 PDD) from T.R. Ministry of Environment and Forest, Directorate of Environmental Impact Assessment and Planning. Decision Date: 15/03/2007; Decision No: 1225	CAR#2 CAR#23	CAR#23 closed CAR#2 closed out
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A.4. Project Participants					
A.4.1. Is the table required for the indication of project participants correctly applied?	1	DR	Yes, host country Turkey is shown along with PP LoA and MoC are not relevant for voluntary project activity.	Y	Y
A.4.2. Is all information provided in consistency with details provided by further chapters of the VCS PD (in particular annex 1)?	1	DR	Yes, all information in combination with PP is consistent in the documents.	Y	Y
A.5. Technical Description of the Project Activity					
A.5.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)? Are the latitude and longitude of the site indicated (decimal points)	1b 23	DR Site visit	See A 3.1	Again CL#6 And site visit	Y
A.5.2. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	1 9	DR	Landowner is Turkey. License for generation was presented to SGS in response to CAR#2 CAR#2 closed out	Site visit CAR#2 closed	Y
A.5.3. Is the category(ies) of the project activity(ies) correctly identified?	1	DR	Yes, scope 1 Energy industries: renewable energy source; large scale.	Ok	Y
A.5.4. Does the project design engineering reflect current good practices?	1b	DR	In response to CL#6 the project design is sufficiently described in PDD v 3 CL#6 closed with respect to design. Design engineering reflects current practice in Turkey. Turkey has huge experience with hydro projects.	Again CL#6	Y

A.5.5. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance and is the explanation how the project will reduce greenhouse gas emission transparent and suitable?	1	DR	Yes, hydro is simple project category. Total generation reduces GHG emissions from the Turkish grid. Local assessment: The concrete upstream cofferdam at the crest altitude of 642.75 meters (holding the silt from upstream Topçam Dam) is part of the project, the dam is the regulator. A tunnel from regulator 8500 m to surge tank (70 m high). 700.000 m³ capacity in the regulator (5 to 6 h operation) Water level difference between regulator and power plant around 350 m. Upstream dam of other hydro project with bigger reservoir available for flow regulation. 0,4 m³/s needs to be left in the river according to national legislation. There are no villages and water users between the regulator and the tail end of the hydro power plant. 12 m³/s will be used in the power plant on average 36 m³/s will be used in the powerplant at maximum After tail end all the water will be returned to riverbed, but there are two more hydro power projects down stream.	Ok	Y
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A.5.6. Is all information provided in compliance with actual situation or planning as available by the project participant(s)?	1; 2	DR	Not all information sources are available for validation, some direct links are missing, site visit has not taken place yet See also A 3.2 respective CAR#24 on inconsistent information. Final documents and information from site visit are in compliance with reality	Ongoing And CAR#24	Y CAR#24 closed
A.5.7. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	1	DR	See A 5.4	Again CL#6	Y
A.5.8. Is the project technology likely to be substituted by other or more efficient technologies within the project crediting period?	1	DR	No, it is not likely that the hydro plant will be substituted during the crediting period.	Y	Y
A.5.9. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1	DR	Yes, extensive training and maintenance efforts are required. This is reflected in the project design and Annex 4 to PDD	Y	Y

A.5.10. Does the project proponent(s) make provisions for meeting training and maintenance needs?	1b	DR	No, MP and QA/QS explanations do not address training and maintenance needs. It is stated that local people shall be employed when ever possible. It is assumed that hydro energy experts are not available locale. Therefore training will become relevant tot ensure the operation of the plant. To get the necessary information on training and maintenance needs CL#8 was raised. In response to CL#8, a paragraph has been inserted regarding training of the staff recruited in Section A.2 PDD V3 Maintenance needs for hydro plant are not explained. As final respond to CL#8 all relevant information on training and maintenance needs is available. CL#8 closed	CL#8	Y CL#8 closed
A.5.11. Is a schedule available on the implementation of the project and are there any risks for delays?	1a 1b	DR	<i>Schedule is not available. Risk for delays can not be assessed without of additional information.</i> CL#9 was raised to get additional information In response to CL#9 Implementation schedule is added in section A.4.11. CL#9 closed out	Cl#9	Y Cl#9 closed out
A.6. Conditions prior to project initiation					
A.6.1. Are the conditions prior to the project initiation described in the VCS PD?	1c	DR Site visit	The common practice analysis and the information on activities in the river valley are seen as information about the conditions prior to the project.	Y	Y
A.7. Compliance with relevant local laws and regulations related to the project					

A.7.1. Are relevant local laws and regulations related to the project identified in the VCS PD?	1b	DR	Completeness check will be finalized after revision of PDD v3	CAR#2	CAR#23
	10	Site visit		CAR#23	closed
	21		CAR#23: notification of relevant local laws and regulations related to the project and demonstration of compliance with them is missing. Respond to CAR#23 made clear that All relevant local laws and regulations are taken into account, project is in legal compliance. CAR#23 closed CAR#2: Generation licence is missing The generation licence sent in response to CAR#2 on 15/08/2008 is the official approval that the construction of the HPP is authorized by the authority. Generation is allowed for a 49 year period starting 22/06/2006 CAR#2 closed out Confirmation by the host country in form of approval of development plan for hydro project by local authority: T.R. GOVER-NORSHIP OF ORDU Directorate of Public Works and Settlement (ref 10) Ref 21 EIA AFFIRMATIVE CERTIFICATE (identical with Annex 4 PDD) from T.R. Ministry of Environment and Forest, Directorate of Environmental Impact Assessment and Planning. Decision Date: 15/03/2007; Decision No: 1225		CAR#2 closed out

A.7.2. Is the demonstration of compliance with them described in the VCS PD?	1b	DR Site visit	See CAR#2 on generation license and CAR#23 on notification of laws and regulations. Yes, project is in compliance with laws and regulations. This was confirmed after closure of CAR#2 and 23.	CAR#2 CAR#23	Y CAR#2 closed CAR#23 closed
A.8. Identification of Risks that may substantially affect the project's GHG emission reductions or removal enhancements					
A.8.1. Are risks that may substantially affect the project's GHG emission reductions or removal enhancements identified in the VCS PD?	1b	DR	Yes, main risk is seen in natural variance of water availability	Y	Y
A.9. Demonstration to confirm that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction					
A.9.1. Is it demonstrated in the VCS PD that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction?	1b	DR	The hydro project does not create any project emissions. Therefore this issue is n.a.	Y	Y
A.10. Demonstration that the project has not created another form of environmental credit					
A.10.1. Is it demonstrated in the VCS PD that the project has not created another form of environmental credit?	1b	DR	Yes, there is no other option in Turkey for environmental credits	Y	Y
A.11. Project rejected under other GHG programs (if applicable)					
A.11.1. Is the project rejected under another GHG program?	1b	DR	No, the project is not rejected under another program, there is no other.	Y	Y
A.11.2. Is the Project rejected by other GHG programs, due to procedural or eligibility requirements where the GHG program applied?	1b	DR	No, see A 11.1 above	Y	Y
A.11.3. Is it clearly stated in the VCS PD all GHG programs for which the project has applied for credits and why the project was rejected?	1b	DR	N.A.	Y	Y

A.11.4. Are the actual rejection document(s) including explanation provided to the VCS verifier and Registry?	1b	DR	N.A.	Y	Y
A.12. List of commercially sensitive information (if applicable)					
A.12.1. Is a list of commercially sensitive information provided by the project proponent?	1b	DR	Yes, only investment cost is listed as commercial sensitive information. Respond to CAR#22: The declaration that no commercially sensitive information has been excluded was missing (see PD template VCS 2007). After the delivery of the declaration CAR#22 could be closed.	Y CAR#22 closed	Y CAR#22 closed
B. Baseline and Monitoring Methodology					
B.1. Choice and Applicability					
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	1b	DR	Yes, the project makes use of approved baseline methodology ACM 0002 v7.	Y	Y
B.1.2. Is the baseline methodology the one deemed most applicable for this project?	1b	DR	Yes, all applicability criteria are met.	Y	Y
B.1.3. Is the choice of the methodology correctly justified by the VCS PD and is the project in conformance with all applicability criteria of the applied methodology?	1b	DR	Yes, all applicability criteria are met.	Y	Y
B.2. Project Boundary					

B.2.1. Are all emission sources and gasses related to the baseline scenario, project scenario and leakage clearly identified and described in a complete manner?	1 1d 4	DR	Application of ACM0002 v7 is wrong. Project emissions are not taken into account. B 7.2 PDD indicates that a diesel generator is in use. Please provide more information about this project emission source. In response to CAR#21 PP presented revised MP in final PDD v 4 / 18. Project emissions are taken into account as required. CAR#21 closed	CAR#21	CAR#21 closed
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with EB guidance and the underlying methodology?	1	DR	Yes, Turkish grid is correctly identified inclusive energy imports.	Y	Y
B.2.3. Are the project's spatial boundaries (geographical) and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	1	DR Site visit	No, it is not transparent if the concrete upstream cofferdam at the crest altitude of 642.75 meters (holding the silt from upstream Topçam Dam) is part of the investment. Local assessment: The dam is part of the project, the dam is the regulator. A tunnel from regulator 8500 m to surge tank (70 m high). See CL#6 above CL#6 is closed with respect to project boundaries.	Again CL#6 site visit	Y
B.3. Identification of the Baseline Scenario					

B.3.1. Does the VCS PD discuss the identification of the most likely baseline scenario? Does the VCS PD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	1b 4	DR	Yes, the project discusses the identification of the most likely baseline scenario in compliance with ACM0002v 7. For the construction of new hydro project there is only one scenario: Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “Tool to calculate the emission factor for an electricity system”.	Y	Y
B.3.2. Does the application consider all potential realistic and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations??	1b 4	DR	See B3.2 PDD. Only one baseline scenario after ACM0002 v7	Y	Y
B.3.3. Is the choice of the baseline compatible with the available data?	1b 4	DR	Most recent data are presented in Annex 2 PDD v3 and supported with links to official and reliable information sources. Calculation spreadsheet for CM; OM, BM makes use of identical figures.	Y	Y
B.3.4. Is conservativeness addressed in the way of identifying the baseline?	1b 4	DR	Yes, during the identification of baseline emissions conservative assumptions are taken in form of IPCC 2006 fuel emission factors on the lower end of the 95% confidence interval. All other values for calculation of baseline emissions respect the CM emission factors are absolute, without the opportunity to take a more or less conservative way.	Y	Y

B.3.5. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	1b 4	DR	Yes, the selected baseline is the most likely scenario and the only one which is possible after ACM0002 v7, See B 3.1 above	Y	Y
B.4. Additionality					
B.4.1. Does the VCS PD clearly demonstrate the additionality using the approach as given by the methodology and by following all the required steps?	1c	DR	Project uses additionality tool as required by ACM0002 v7. The PDD v 3 tells that version 5 of the additionality tool is used. The most recent version is 5.2. PDD v4 refers to version 5.2 See B 4.2	Y	Y

B.4.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the VCS PD latest version available on CDM website? If an earlier version has been used, do the changes impact the discussion in the VCS PD? Are all steps followed in a transparent manner?	1a 1c 5	DR	No, initially version 4 was applied. Version 5.2 is the most recent version of the tool. Revised PDD v 3 shows v5 not 5.2 as required. PDD v4 shows 5.2. The PDD v 3 tells that version 5 of the additionality tool is used. The most recent version is 5.2. The changes between 5.0 and 5.2 are related to guidance on the assessment of investment analysis. Project does not use investment analysis. Therefore the update will not lead to changes, nevertheless update is requested. No, not all steps are transparent. Step common practice analysis is missing in PDD v0. Consequently CAR#3 was raised to ensure the changes of PDD. CAR#3 closed out with respect to version number. PDD v4 shows common practice analysis as requested. CAR#3 closed with respect to version no.	CAR#3 And local assessment Q 15	Y CAR#3 closed
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B.4.3. Is the discussion on additionality and the evidence provided consistent with the starting date of the project If the project has started before the validation is it discussed how the funds from VCU / CDM was taken into account in the decision to go ahead with the project activity	1d	DR Int	Additionality discussion is not sufficient, and project status at date of site visit is not transparent. Start date of project is under revision. CAR#3 was raised to ensure that start date will be revised in compliance with VCS (financial closure). See also B 4.2 Revised start date is 28/02/2007, see PDD v4 /18 Due to main argument for additionality (investment barrier) the board decision to go ahead with the project after VCS is relevant. CL#13 was raised to get a copy of the protocol. Respond to CL#13 made clear that carbon revenues were taken into account just to improve the cash flow, but carbon revenues are not the key indicator for the Board decision to realize the project or not.	Again CAR#3 and CL#13 CL#26	CAR#3 closed CL#13 closed CL#26 closed
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B.4.3. continued			CAR#3 was raised to improve the additionality discussion. If the investment bank decision (YapiKredi) to spend the money for the project is linked to carbon revenues as key indicator, has to be assessed by interview. This information is essential for the assessment of financial barriers. The respond from Yapi Kredi made clear that investment barrier is overcome by additional income from credits. The investment decision was based on this additional income. CL#26 Evidence missing. Information source not found under the internet link show in the foot note 3 PDD v1, please provide copy of the information source. (final PDD v 4 /18 shows foot note 4 and direct web link to information source. CL#26 closed		
B.4.4. Is the discussion on additionality consistent with the identification all potential realistic and credible baseline scenarios Do the identified alternative include technologies and practices that include outputs (e.g) cement or services comparable with the proposed CDM project activity	1c	DR	Initial additionality assessment is not sufficient. Consequently CAR#3 was raised to improve the assessment. Revised PDD v4 and respond to CAR#3 present additionality discussion consistent to the identified baseline scenario. Additionality is argued based on investment barrier and baseline is continuation with current practice. The discussion of project alternatives after step 1 additionality tool presents the project without being registered as VER project and current practice.	CAR#3	CAR#3 closed

B.4.5. If an investment analysis has been used, has it been shown that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of VCUs?	1	DR	N.A:	N.A:	N.A:
B.4.6. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?	1c 12	DR	Discussion on implementation of alternatives and investment barrier to the proposed project is not sufficient. If alternatives are taken into account is not clear. This is critical because use of hydro energy is common practice in Turkey. To get more information on alternatives CAR#3 was raised. In response revised PDD v4 presents realistic alternatives in the discussion of alternatives after additionality tool v 5.2 The main barrier which prevents the project implementation is demonstrated mainly with Investment analysis. Alternative “continuation with current practice” does not face any barrier. Investment analysis was not provided to SGS for document review before site visit. Cl#14 was raised to get a copy. CL#14 was closed after receipt of the requested analysis (ref 12)	CL#14 Again CAR#3	CL#14 closed CAR#3 closed

B.4.7. Has it been shown that the project is not common practice?	1c	DR	No, common practice analysis is missing. Consequently CAR#3 was raised to get the analysis in compliance with additionality tool v 5.2 . Revised PDD v4 shows requested analysis. Project is not common practice due to private investment. Common practice is governmental investment and governmental owned hydro plants. This was verified along with official documents from TEIAS, references 10 on page 16 PDD (10 years Projection of Generation and Installed Capacity for Turkey, 2008-2017, TEİAŞ) and page 11 share of private hydro generation (1.9 % in 2007) compared to total generation 2007. CAR#3 closed	Again CAR#3	CAR#3 closed out with respect to common practice analysis
B.4.8. Is it demonstrated/justified that the project activity itself is not a likely baseline scenario			No, if project is common practice it is baseline. This issue was figured out after closure of CAR#3. See B4.7	Again CAR#3	Y CAR#3 closed
B.5. Application of the Baseline Methodology					

B.5.1. Has the approved methodology been applied correctly for determining baseline emissions ?	1b 1c 4 22	DR	The Calculation of the CM EF was not carried out in a conservative way. Therefore CAR#1 was raised. The revised PDD V3 (ref 1b) and the revised calculation (ref 22) show the right values for the EF but total emission 2003-2005 shown in PDD v3 are wrong (different from excel calculation sheet). The OM EF is now 0,655 t CO2/MWh and the BM EF 0,624 t CO2/MWh leading to a CM EF of 0,640 t CO2/MWh in PDD v4. These are the correct values. Therefore CAR#1 was closed out.	CAR#1	CAR#1 closed out
B.5.2. Has the approved methodology been applied correctly for determining project emissions ?	1	DR	Project emission of hydro power project are 0 but B 7.2 PDD indicates that a diesel generator is in use. CAR#21 was raised to get clearance on project emissions. Respond in final PDD v 4/18 on page 29 made clear that project emission are not relevant for baseline calculation. CAR#21 closed	CAR#21	Y CAR#21 closed
B.5.3. Has the approved methodology been applied correctly for determining leakage ?	1	DR	Yes, leakage emissions are not relevant for this project and presented as 0 in the PDD in compliance with ACM0002 v 7.	Y	Y
B.5.4. Where applicable, has the approved methodology been applied correctly for the direct calculation of emission reductions			N/a	N.A.	N.A.

B.5.5. Have all the methodological choices been explained, have they been properly justified and are they correct	1	DR	With exception of project emissions (see B 5.2 above) all choices have been explained, are transparent and correct. OM simple after tool grid EF version 1 is used ex-ante for 3 year weighted average, option c (total generation / total fuel consumption) BM has been calculated ex-ante using the most recent data available. (Option 1) CM is calculated with correct weights for hydro project. Baseline information is presented as Annex 2 to PDD and is verified against public available grid information. Direct links are presented in PDD.	Y	Y
B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?			Uncertainties are not addressed in the prediction of ERs. Uncertainties are not too important in the prediction, only information from reliable information sources and conservative values are used.	Y	Y
B.6. Ex-ante Data and Parameters Used					

B.6.1. Are the data provided in compliance with the methodology?	1 1c 12 22	DR	Yes, all parameters and equations used for the ex-ante calculation of baseline and EF are in compliance with ACM0002 v7 This was approved by comparison of methodology with calculation spreadsheets and PDD. Calculations are correct in the excel file ref 22 (baseline grid EF) The total predicted ERs are reported wrong in B 6.3 and B 6.4 PDD v0. The revised figures from excel sheet ref 22 show the correct values. Revised PDD v4 shows correct baseline CM EF. PDD v 4 (1c) shows different ERs than excel sheet (ref 12). CAR#24 was raised to ensure relevant changes in the PDD. See also A 2.2 above Final PDD v 4 /18 in response to CAR#24 presents correct information on start of operation and crediting period as well as predicted emission reduction. CAR#24 closed	CAR#24	CAR#24 closed
B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	22	DR	Only information from official and reliable information sources and conservative values are used correctly in the calculation spreadsheets. The main information source for grid figures is TEIAS from Turkish government. 2006 IPCC is used for EFs for different fuels.	Y	Y
B.6.3. Is the vintage of the baseline data correct?	22	DR	It was approve during site visit and through interned that figures used are most recent.	Y	Y

B.7. Calculation of Emissions Reductions

B.7.1. Has the approved methodology been applied correctly for determining emission reductions?	PDD v1 1d	DR	After ACM0002 v 7 PP the ERs have to be calculated after equation 11: $ER = BL - PE - LE$. The “tool for grid emission factor v1” has to be applied to calculate the CM EF. The calculation of OM, BM and CM is transparent and correct. CM is 0.640 t CO₂e/MWh It is argued that there are no project or leakage emissions. Therefore the ERs are simple Generation multiplied with CM EF. This calculation is done correctly but it is not demonstrated that project emissions are 0, see CAR#21. Final PDD v 4 / 18 along with MP in response to CAR#21 made clear that project emission will be taken into account as required CAR#21 closed out CAR#27 was raised to ensure that a) units will be presented in excel calculation spreadsheet, b) punctuation will be corrected in PDD c) PDD will be revised to make it transparent that the formula for BL is different to formula for ERs in section B 6.3. Respond to CAR#27 shows annual ERs 209,722 Tonnes CO₂ transparently. Calculation is in compliance with ACM0002 v7 and information is consistent to final PDD v 4 / 18 (ref 1d) CAR#27 closed	Again CAR#21 CAR#27	CAR#21 Closed CAR#27 closed
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B.7.2. Are the emission reduction calculations documented in a complete and transparent manner?	PDD v1 1c 17 20	DR	No. CL#19: The calculation of the proposed generation is not clear. Please provide evidence for the calculation of future generations (prediction with specific software) In response screen copy along with translation was presented to SGS. Consequently CL#19 closed out. CAR#27 was raised to ensure that a) units will be presented in excel calculation spreadsheet, b) punctuation will be corrected in PDD c) PDD will be revised to make it transparent that the formula for BL is different to formula for ERs in section B 6.3. Respond to CAR#27 shows annual ERs 209,722 Tonnes CO2 transparently. Calculation is in compliance with ACM0002 v7 and information is consistent to final PDD v 4 / 18 (ref 1d) CAR#27 closed	CL#19 CAR#27	CL#19 closed out CAR#27 closed
B.7.3. Have conservative assumptions been used to calculate emission reductions?	PDD v1	DR	For the calculation of CM EF the tool for grid EF is followed exactly, therefore it is assumed that the EF is conservative. If conservative assumptions have been used to predict the generation can not been answered before closure of NIR 19 CL#19 closed, see B 7.2	Again CL#19	CL#19 closed
B.7.4. Is the projection based on provable input parameter?	PDD v1	DR	See B 7.3	Again CL#19	CL#19 closed

B.7.5. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	PDD v1	DR	The prediction uses same formula for calculation of ERs than the monitoring plan.	Y	Y
B.7.6. Is the calculation of the emission reduction correct?	PDD v1	DR	Calculation of predicted ERs is only done in PDD. It is only predicted generation multiplied with CM EF. CAR#10: The spreadsheet with the projected emission reductions is wrong. Predicted emission reductions are presented correct and consistent in the documents. Calculation is based on ACM0002 v7 along with recent grid tool v 1 for CM EF. Consequently CAR#10 was closed. This simple calculation is based on the assumption that project emissions are 0. This is core of CAR#21. In response to CAR#21 PP has added monitoring of project emission correctly. CAR#21 closed. The predicted generation is not approved, see CL#19. CL#19 closed, see B 7.2	CAR#10 closed Again CAR#21 Again CL#19	CAR#10 closed CL#19 closed CAR#21 closed
B.7.7. Is the project a micro or mega project?	PDD v4	DR	Projected annual emission are below 1,000,000 tCO ₂ /y, therefore it is not a mega project	Y	Y
B.8. Emission Reductions					
B.8.1. Will the project result in fewer GHG emissions than the baseline scenario?	PDD v1	DR	Yes, if project will be approved it will result in fewer GHG emission. The project is a renewable capacity addition to the Turkish power grid.	Yes	Yes

B.8.2. Is the form/table required for the indication of projected emission reductions correctly applied?	PDD v1	DR	No, CAR#28: Tables A 4.4 and 6.2 PDD are not applied correctly. In the first year, please provide only the share from June to Dec.2009. In line 2 to 9 the calendar years (Jan. to Dec) and in the last line the share from Jan. to May 2017 above the line for total 10year. Respond to CAR#28 provided by PP in form of revised documents. Table A 4.4 and 6.2 are applied correctly in final PDD v 4 /18. CAR#28 closed	CAR#28	CAR#28 closed
B.8.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	PDD v1 and v3 V4	DR	Projection is in line with planning, but crediting period is not defined as required. CAR#15: Period wrong 10 y required. Revised PDD v3 shows 10 year period as required by VCS. Crediting period shall start June 2009 but format wrong. Final respond to CAR#15 by PP is correct. Definition of project start date, start of crediting period (01/07/2009) and length of crediting period is correct. CAR#15 closed	CAR#15	CAR#15 closed
B.9. Monitoring Methodology					

B.9.1. Does the monitoring methodology provide a consistent approach in the context of all parameter to be monitored and further information provided by the VCS PD? Are all parameters and data that is available at validation consistent with the approved methodology	PDD v3	DR	ACM0002 v 7 clearly indicates the monitoring of EG_y Electricity supplied to the grid TEG_y Total electricity produced PE_{FC,j,y} project emission After B 7.2 PDD v 3 electricity generation and diesel consumption are relevant for monitoring. CAR#21 was raised to get information about project emissions. Annex 4 PDD does not talk about monitoring of diesel consumption or project emission. B 7.2 and Annex 4 are inconsistent Project emissions are not taken into account for calculation of predicted ERs. PP has added monitoring of project emission in response to CAR#21 correctly. CAR#21 closed.	Again CAR#21	CAR#21 closed
B.9.2. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?	PDD v3	DR	See B 9.1	Again CAR#21	CAR#21 closed
B.10. Data and Parameters Monitored					

B.10.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?	PDD v3	DR	Only electricity generation will be monitored. All other parameters to calculate ER's are calculated ex-ante and fixed over the crediting period. Monitoring of generation will be done by the project and Teias and will be basis for the payment to the project investor. Tolerable uncertainties are regulated by Teias. CL#12: MP should be more precise with respect to monitoring personnel and intervals. CL#12 is transformed in OBS I, see annex 3. See CAR#21 above, diesel consumption is taken into account as project emission.	CL#12 Again CAR#21	OBS I CAR#21 closed
B.10.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	PDD v3	DR	Only ERs and PE are relevant as GHG indicator after ACM 0002 v7 for hydro project without reservoir.	Y	Y
B.10.3. Will it be possible to determine the specified project GHG indicators?	PDD v3 Ref 1d	DR	Yes, EG_y and TEG_y will be monitored according to official regulations (TEIAS) $PE_{FC,j,y}$ will be monitored based on diesel consumption. Diesel is not addressed in MP so far, see CAR#21 In response to CAR#21 diesel consumption is taken into account as project emission in MP. CAR#21 closed	Again CAR#21	CAR#21 closed

B.10.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	PDD v3	DR	Yes with respect to EG. Data will be monitored continuously by redundant metering devices. Each month, an officer from TEİAŞ and the electrical engineer of the plant will record the reading. The collected data will be kept by YAPISAN A.Ş. During the crediting period and until two years after. Maintenance and calibration of the metering devices will be made by TEİAŞ every two years. If the difference between the readings of two devices exceeds 0.2%, maintenance will be done before waiting for two years No with respect to diesel consumption, see CAR#21 In response to CAR#21 diesel consumption is taken into account as project emission in MP. CAR#21 closed	Again CAR#21	CAR#21 closed
B.10.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	PDD v3	DR	See B 10.4	Again CAR#21	CAR#21 closed
B.10.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	PDD v3	DR	Yes, monitoring of electricity generation is in line with current good practice and in compliance with TEİAŞ requirements. No, monitoring of diesel not clear, see CAR#21 In response to CAR#21 diesel consumption is taken into account as project emission in MP. CAR#21 closed	Again CAR#21	CAR#21 closed

B.10.7. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	PDD v3	DR	Project emission are not clear, pending closure of CAR#21 In response to CAR#21 diesel consumption is taken into account as project emission in MP. CAR#21 closed	Again CAR#21	CAR#21 closed
B.11. Quality Control (QC) and Quality Assurance (QA) Procedures					
B.11.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	PDD v3	DR	Yes with respect to generation No with respect to project emission in form of diesel consumption, again CAR#21 In response to CAR#21 diesel consumption is taken into account as project emission in MP. CAR#21 closed	Again CAR#21	Y CAR#21 closed
B.11.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	PDD v3	DR	It is expressed that redundant meters will be used for monitoring of electricity generation, calibration minimum 2 years. If the difference between the readings of two devices exceeds 0.2% they will maintain the meters Open for diesel monitoring, again CAR#21 In response to CAR#21 diesel consumption is taken into account as project emission in MP. This CO2 source is minor (de minimis), not relevant CAR#21 closed	Again CAR#21	Y CAR#21 closed

B.11.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	PDD v3	DR	It is expressed that redundant meters will be used for monitoring of electricity generation, calibration minimum 2 years. If the difference between the readings of two devices exceeds 0.2% they will maintain the meters Open for diesel monitoring, again CAR#21 In response to CAR#21 diesel consumption is taken into account as project emission in MP. CAR#21 closed CL#12: QA/QS measures as internal audits, management review, continuous improvement etc. are not defined in MP. CL#12 is transformed in OBS I	CAR#21 CL#12	OBS I CAR#21 closed
B.11.4. Is it ensured that data will be bound to national or internal reference standards?	PDD v3	DR	Yes, with respect to electricity generation by periodic calibration Now for diesel, not clear see CAR#21 In response to CAR#21 diesel consumption is taken into account as project emission in MP. This CO2 source is minor (de minimis), not relevant CAR#21 closed	Again CAR#21	Y CAR#21 open
B.11.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions?	PDD v3	DR	Yes, all parameters will be measured.	Y	Y
B.12. Operational and Management Structure					
B.12.1. Is the authority and responsibility of project management clearly described?	PDD v3	DR	In general, responsibilities are clear from metering to preparation of annual monitoring reports	Y	Y

B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD v3	DR	No, Responsibility for VCS registration and periodic reporting is not expressed in MP CL#12 Respond to CL#12 clarified this issue. CL#12 closed with respect to this point	CL#12	Y CL#12 closed
B.12.3. Are procedures identified for training of monitoring personnel?	PDD v3	DR	No Relevant procedures as addition to the MP are missing for: Training of monitoring personnel CL#12 Respond to CL#12 clarified this issue. CL#12 closed with respect to this point	CL#12	CL#12 closed
B.13. Monitoring Plan (Annex 4)					
B.13.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	PDD v3	DR	No, MP is not sufficient. CL#12 CL#12 is transformed in OBS I	CL#12	OBS I
B.13.2. Does the monitoring plan completely describes all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?	PDD v3	DR	No, MP is not sufficient. CL#12 CL#12 is transformed in OBS I	CL#12	OBS I
B.13.3. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	PDD v3	DR	Monitoring equipment for electricity generation will not be under the control of PP. monitoring equipment for diesel unknown CL#12 CL#12 is transformed in OBS I	CL#12	OBS I

B.13.4. Are procedures identified for calibration of monitoring equipment?	PDD v3	DR	Calibration interval for electricity meter as minimum 2 years Diesel unknown CL#12 CL#12 is transformed in OBS I	CL#12	OBS I
B.13.5. Are procedures identified for maintenance of monitoring equipment and installations?	PDD v3	DR	Yes For electricity meters Diesel unknown CL#12 CL#12 is transformed in OBS I	CL#12	OBS I
B.13.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD v3	DR	No CL#12 CL#12 is transformed in OBS I	CL#12	OBS I
B.13.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems??	PDD v3	DR	No CL#12 CL#12 is transformed in OBS I	CL#12	OBS I
B.13.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD v3	DR	N/a	Y	Y
B.13.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD v3	DR	No CL#12 CL#12 is transformed in OBS I	CL#12	OBS I
B.14. Baseline Details					
B.14.1. Is there any indication of a date when determine the baseline?			Yes, it is 20/02/2008	Y	Y

B.14.2. Is this in consistency with the time line of the VCS PD history?	PDD v3 9 16	DR In	Yes. BL is calculated by consultant from JP Morgan Ventures Energy Corporation Construction of project started April 2007 with digging of tunnel. generation license is from 22/06/2006 (9) Bord decided on VCS project 01.09.2006 (16)	Y	Y
B.14.3. Is all data required provided in a complete manner by annex 3 of the VCS PD?	PDD v3	DR	Annex 2 PDD provides all data	Y	Y
C. Duration of the Project / Crediting Period					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1	DR	No, see B 8.3 CAR#15: start date wrong Final respond to CAR#15 by PP is correct. Definition of project start date, start of crediting period (01/07/2009) and length of crediting period is correct. CAR#15 closed Lifetime (49 y) exceed crediting period (10 Y).	CAR#15	CAR#15 closed
C.1.2. If the project is registered with other registry like CDM or Gold Standard pls. check that, No double issuance of ERs takes place for the same or part of the crediting period.	1 Ref 1d	DR	N.A: Project is not registered in other registry nor applying for carbon credits under other schemes. See Annex 6 to final PDD v 4 /18	Y	Y

C.1.3. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1	DR	No, see B 8.3 Final respond to CAR#15 by PP is correct. Definition of project start date, start of crediting period (01/07/2009) and length of crediting period is correct. CAR#15 closed	CAR#15	CAR#15 closed
C.1.4. Does the project's operational lifetime exceed the crediting period	1	DR	Yes	Y	Y
D. Environmental Impacts					
D.1.1. Does the project comply with environmental legislation in the host country?	PDD v3	DR	Not clear, site visit and CAR#16: EIA impact is not discussed sufficiently Official approved EIA was presented in response to CAR#16 as Annex 6 to PDD v3.	Site visit Q 8 and CAR#16	Y CAR#16 closed
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?	1	DR	No, EIA summary under section D is not sufficient. Revision of Section D in PDD v3 sufficient. CAR#16 closed	CAR#16	Y CAR#16 closed
D.1.3. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1 1d	DR	EIA was carried out. Approval from Ministry is not available. CL#17 raised to get a copy. Official approved EIA was presented in response to CAR#16 as Annex 6 to PDD v3. In final PDD (Ref 1d) this is annex 5	CL#17	Y CL#17 closed

D.1.4. Will the project create any adverse environmental effects?	1 1c	DR Site visit	Not clear, EIA summary in PDD is not sufficient. Project impact on water balance and downstream users is not discussed Copy of EIA was provided to SGS in response to CAR#16. Upstream and downstream impact on flora nad fauna is assessed in section D 1 PDD v4. Impact is managed in compliance with legislation.	Again CAR#16	Y CAR#16 closed
D.1.5. Are transboundary environmental impacts considered in the analysis?	1	DR	No, EIA summary is not sufficient See D 1.4 above	Again CAR#16	Y CAR#16 closed
D.1.6. Have identified environmental impacts been addressed in the project design?	1	DR	Open, EIA summary is not sufficient. See D 1.4 above	Again CAR#16	Y CAR#16 closed
E. Stakeholder Comments					
E.1.1. Have relevant stakeholders been consulted?	1a 1b	DR	Not clear ISC report is missing, summary in PDD v 0 section E is not sufficient CL#18 In response to CL#18 EIA was sent. Stakeholder consultation is mandatory during EIA. ISC is in compliance with legislation. CL#18 closed Respond to CAR#4: Local stakeholder consultation has taken place on 19.10.2006 at Derinçay Village. PDD v 3 section E was revised. ISHC has not taken place, not required after ISO 14064 -2	CAR#4 CL#18	CAR#4 closed CL#18 closed

E.1.2. Have appropriate media been used to invite comments by local stakeholders?	1	DR	Not clear ISC report is missing, summary in PDD section E is not sufficient In response to CL#18 EIA was sent. Stakeholder consultation is mandatory during EIA. ISC is in compliance with legislation. CL#18 closed	CL#18	Y CL#18 closed
E.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1	DR	In response to CL#18 EIA was sent. Stakeholder consultation is mandatory during EIA. ISC is in compliance with legislation. CL#18 closed	CL#18	Y CL#18 closed
E.1.4. Is the undertaken stakeholder process described in a complete and transparent manner?	1	DR	No, ISC is not clear and report is missing, summary in PDD section E is not sufficient	CL#18	Y CL#18 closed
E.1.5. Is a summary of the stakeholder comments received provided?	1	DR	Yes, but proof is missing	CL#18	Y CL#18 closed
E.1.6. Has due account been taken of any stakeholder comments received?	1	DR, I	Not clear ISC report is missing, summary in PDD section E is not sufficient	CL#18	Y CL#18 closed
F. Schedule					

F.1.1. Is there a Chronological plan for the date of initiating project activities, date of terminating the project, frequency of monitoring and reporting and the project period, including relevant project activities in each step of the GHG project cycle?	1	DR	A chronological plan which covers all dates is not available but all dates of initiating project activities, date of terminating the project, frequency of monitoring and reporting the project period, including relevant project activities in each step of the GHG project cycle Are presented with PDD v4 and associated documents	Y	Y
G. Ownership					
G.1. Proof of Title					
G.1.1. Is evidence of proof of title provided?	9	DR	Proof in form of generation licence was submitted to SGS	Y	Y
G.2. Projects that reduce GHG emissions from activities that participate in an emissions trading program (if applicable)					
G.2.1. Is the project proponent of the project included in an emission trading program?			N.A.	N.A.	N.A.
G.2.2. Does the project take place in a jurisdiction or sector in which binding limits are established on GHG emissions?			N.A.	N.A.	N.A.
G.2.3. Is 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 provided?			N.A.	N.A.	N.A.

References

Reference ID	Title / Description	Comments
1a	PDD v0	From 10/04/2008
1b	PDD v3	From 05/08/2008
1c	PDD v4	From 25/11/2008
1d	PDD v4 / 18	Date:18th April 2009
2	Darica_electricity statistics_reference.xls	Grid information Turkey
3	J. Enerji.doc (reference xy in PDD)	
4	ACM0002 v 7.pdf	
5	Additionality_tool v5.2.pdf	
6	EB35_repan12_Tool_grid_emission[1].pdf	
7	VVM (1)	
8	Voluntary_Carbon_Standard_2007.1	
9	Generation Licence	
10	Approval_Dev_Plan.pdf	
11	Accreditation for EIA assessments.pdf	
12	Proforma Income Statement (Carbon).xls	Final investment analysis
13	Env_Status_of_Tokat Province_2005.doc	
14	reference 18_PDD_temev_IRR.pdf	
15	9_INFORMATION REGARDING PUBLIC FUNDING.pdf	
15 rev 1	INFORMATION REGARDING PUBLIC FUNDING.pdf	Revised in response to CAR 3 point c
16	admin_board_desicion.pdf	

Reference ID	Title / Description	Comments
17	ElectricityGeneration_Calc.doc	the word document is the English translation of ref 20 , the original printouts from the software for electricity generation calculations of Darica-1 HPP
18	ISC_Report.pdf	
19	eurobond_rates.pdf	
20	Darica I Isletme-p1.pdf & Darica I Isletme-p2.pdf	
21	EIA Affirmative Certificate	No copy
22	Darica_CM_calculation_2006_acm0002v7_final_Draft_v4.1.xls	
23	1_Overview Drawing.JPG	
24	2_EIA_eng.pdf	
25	ISO 14064-2 (2006)	
26	ISO 14064-3 (2006)	
27	¹ Chapter.5.Projections and Mitigations Scenarios, First National Communication of Turkey on Climate Change, January 2007, (pg. 121-157) (http://www.undp.org.tr/Gozlem2.aspx?WebSayfaNo=531)	Prediction of Turkish energy sector up to 2020
28	development of Turkeys installed capacity	After foot note PDD v3
29	Yapikredi declaration on ERU.htm	Interview with bank on investment decision
30	Yapikredi on criteria investment decision	Interview with bank on investment decision
31	Darica Proforma Income Statement (Carbon)_sensitivity.xls	Old sensitivity analysis
32	topograph map 1-25000 DARICA.JPG	
33	DARICA-project layout map 1-25000.pdf	
34	profil energy tunel Darica.xls	
35	Clarification VCS PD template utilization.htm	
36	Darica Maintenance Training.pdf	

Reference ID	Title / Description	Comments
37	Darica Financials 090420.xls	ER calculation per calendar year
38	Darica CERTIFICATE OF TITLE.doc	
39	090420 Darica CM_calc.xls	
40	VCS respond Clarification.htm	

A.3 Annex 3: Overview of Findings

Findings Overview

Findings from the validation of the project DARICA-1 99 MW Hydro Power Plant. Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified and irrespective of the nature of the findings, for e.g.: CAR #1, CAR #2, CL #3, FAR #4 etc.

Description of Table:

Type	Findings are Corrective Action Requests (CARs), Clarification Requests (CLs), and Forward Action Request (FARs). A corrective action request (CAR) is raised if one of the following occurs: I. The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions; II. The CDM requirements have not been met; III. There is a risk that emission reductions cannot be monitored or calculated. A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met A forward action request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.
Lead Assessor	Details the content of the finding
Comments	
Ref	Refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Please Note: This is an open list and more findings may be added as validation progresses.

Responses to each Finding and relevant associated documentation should be recorded in this form by the Client and send back to the Lead Assessor in one submission to SGS (exception of finding linked to Letter of Approval, which can be submitted separately).

SGS reserves the right to review the associated fees and timeline if:

- more than one response submission is received from the Client
- a finding (CL/CAR), raised by the Lead Assessor prior to Technical Review stage, is not closed within 30 days of notification to the Client by SGS.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Findings Overview Summary

	CARs	CLs	OBSs
Total Number raised	17	11	2

Deadline for submission of Response by Client¹: 18/01/2009

¹ Response to all findings with relevant associated documentation has to be sent to SGS in one submission.

Date:	07.04.2008	Raised by:	Arthur Pelchen
Type:	CAR	Number:	#1
		Reference:	B.5.1.
Lead Assessor Comment:		Date: 07.04.2008	
CM EF not calculated conservatively			
Other baseline calculations for Turkey using the same methodology are coming to a lower CM EF.			
Conservative energy consumption values are available under http://www.teias.gov.tr/ist2006/44.xls for 2004 and 2005 data and under http://www.teias.gov.tr/ist2006/45.xls for 2006 data. From these it is possible to calculate NCV's for Turkey. Conservative EF (using lower 95% intervall) for the different fuels are available from http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.htm . Using these the OM EF is significantly lowered to around 650 g/kWh.			
The tool for the calculation of grid emission factor does not know the use of an oxidation factor. Hence this should not be used. This raises the emissions slightly.			
Information on the power plant built in 2006 are available under http://www.teias.gov.tr/ist2006/8.xls and in more detail in the document from TEIAS "Projection 2007 – 2016" for 2006. Using these the OM EF increases slightly.			
Additionally there are differences due to the efficiencies used. There is a source ("Environmental Map" published by Environmental Inventory Head Department under Ministry of Environment and Forestry / http://www.cedgm.gov.tr/cevreatlasi.htm (p.197, table X.3.1; Thermal Plants and Environment)), that lists efficiencies for some Turkish power plant and it is possible to calculate an average efficiency for the different fuels from that. Unfortunately this source is not very new. Ideally the efficiency data for exactly those plant that went operational in 2004 to 2006 should be used. Alternatively newer data than in the source given above would be fine. As a last option the data from the source above could be used. Altogether these changes raise the BM.			
Please correct accordingly!			
Project Participant Response:		Date: 04/08/2008	
The CM calculations have been revised accordingly. The emission factor for hydroelectricity power plants has been calculated as 0.640 tCO ₂ /MWh.			
Documentation Provided by Project Participant:			
PDD v3			
Information Verified by Lead Assessor:			
Inconsistent information between PDD v3 and calculation spreadsheet in table 10 PDD v3.			
Please correct accordingly!			
Reasoning for not Acceptance or Acceptance and Close Out:			
Inconsistent information			
CAR#1 remains open			
Not Acceptance and Close out by Lead Assessor:		Date: 26/09/2008	
Project Participant Response:		Date: 18/04/2009	
The PDD has been updated with correct information from Calculation Spreadsheet.			
Documentation Provided by Project Participant:			
Please see PDD_form04_v03_18_Darica.doc Table 10 and 090420 Darica CM_Calc.xls			
Information Verified by Lead Assessor:			
Consistent information provided over all documents. CM EF is 0.640 t CO ₂ /MWh			
Reasoning for not Acceptance or Acceptance and Close Out:			
Grid tool is applied correctly. Ex-ante CM emission factor is 0.640 t CO ₂ /MWh for the project.			
CAR#1 closed			
Acceptance and Close out by Lead Assessor:		Date: 22/04/2009	

Date:	10/04/2008	Raised by:	Jochen Gross
Type:	CAR	Number:	#2
		Reference:	A 3.5 & A7.1 & A 7.2

Lead Assessor Comment: **Date:** 10/04/2008

Generation licence is missing

Please provide a copy of the generation license which shows the expiry date.

Project Participant Response: **Date:** 15/08/2008

Copy of the generation licence has been attached to the PDD s Annex 2.

Documentation Provided by Project Participant:

Copy of generation Licence dated 22/06/2006 (Ref 9)

Information Verified by Lead Assessor:

The generation license is authentic. Generation is allowed for a 49 year period starting 22/06/2006

Reasoning for not Acceptance or Acceptance and Close Out:

The generation licence is the official approval that the construction of the HPP is authorized by the authority.

CAR#2 closed out

Acceptance and Close out by Lead Assessor: **Date:** 22/09/2008

Date:	10/04/2008	Raised by:	Jochen Gross
Type:	CAR	Number:	#3
		Reference:	B 4.2 & B 4.3 & B 4.4 & B 4.6 & B 4.7 & □.8

Lead Assessor Comment: **Date:** 10/04/2008

Additionality assessment is not sufficient

No final conclusion on additionality is verbalized. Many barriers and problems are discussed, but the main barrier to the project implementation is lost within minor barriers, please focus on main barrier "lacking financial incentives" and revise the PDD accordingly. Objective evidence to substantiate your arguments is missing. Please provide proof for your explanations.

Please expand the discussion on the main barrier and provide proof for your arguments (for example investment analysis, ODA, funding, contract banks, contract with buyer of credits, contract with plant supplier, contract with construction firms, estimate of maintenance costs, etc)

Please provide a common practice analysis for hydro plants in Turkey (approx 32 % of energy generation is hydro). Why is your project different from common practice?

What about the implementation of alternative 1 "project implementation without VER income"?

Project Participant Response: **Date:** 15/08/2008

The additionality discussion has been revised in accordance with the latest version of the tool and the financial analysis is also updated.

The letter of the bank confirming that no public funds were used and voluntary emission reduction revenue has been taken into account is attached to PDD v 3 s Annex.3. The advisory board decision about the issue has also been provided.

Documentation Provided by Project Participant:

PDD v3

Information Verified by Lead Assessor:

Revised sections in PDD v3

Reasoning for not Acceptance or Acceptance and Close Out:

- a) Investment analysis is still missing.
- b) Common practice analysis on page 17 PDD v3 is not sufficient. The whole country is relevant, not only the catchment area of the river. Please revise your discussion.
- c) Respond is misleading; Annex 3 to PDD is monitoring information. The document which states that no public funding is used is listed as ref 15. (Ref 15: Statement from PIONEER CARBON LIMITED from 27/05/2008 on funding)
- d) Ref. 15 is not sufficient. This self declaration from project participant can not be accepted as proof for not using funding. We need a declaration from independent investment bank. Please provide evidence in form of declarations from investment bank. The date of financial closure is relevant as official project start date, not the date of construction start in April 2007.
- e) Additionality tool v 5 is not most recent, it is 5.2, please prove update.
- f) Discussion on additionality and application of additionality tool is not sufficient.
Under sub step a section (1) (b) another project which "delivers output services" to the grid in form of electricity is expected. The grid is not able to deliver electricity to itself.
- g) Please provide absolute figures of installed capacities of the Turkish grid to date. You argue that the share of hydro plants on energy generation decreases from 21.2 % in 2005 to 20.2 % in 2020. At the same time you predict that the total electricity generating capacity will reach 544 TWh in 2020. To our knowledge the gross generation in 2005 was 122 TWh. It is not possible to compare the figures for gross generation and installed capacity directly but it is obvious that until 2020 the capacity of hydro power plants will be nearly 4 times higher than 2005 to end up on a share of 20.2 %. This is only possible with several capacity additions. After your reference 9 on page 16 PDD v4 the annual addition of hydro plants was 12,906 MW installed capacity in 2005. Please discuss why your project is different from this "common practice" scenario.
- h) Please use formats exactly after methodology in section B.5. Don't use own numbers like 1, 2, 3, please use (a) , (b) (c) as shown in the methodology.
- i) sub-step 3a (1) (a) investment barrier: Please make use of headlines from additionality tool 5.2 to make it transparent if you have followed the methodology exactly.

CAR 3 remains open

Not Acceptance and Close out by Lead Assessor: **Date:** 02/10/2008

Project Participant Response: **Date:** 25/11/2008

- a) Investment analysis is not applied due to the other barriers specific for the project (technological and financial barriers) which are discussed in B step 3.
- b) Common practice analysis is extended to cover all hydropower plants in the country as well as private sector investment in thermal power plant. The state-owned power plants are excluded from the analysis as they do not face any financial barriers.
- c) Annex .3.is revised as Monitoring information.
- d) The statement is from Yapi Kredi Bank. The translation is revised.
- e) Additionality discussion is revised in accordance with Version 5.2 of the Tool.
- f) Additionality discussion in great detail and new resources of information are provided. In B5 step 1, The Alternative to the project is defined as the supply of electricity by the grid.
- g) The present situation of the installed capacities and the share of hydro power plants have been explained in detail and supported by figures and information from official reports. The technological and financial barriers specific to the project have been discussed.
- h) The numbering is revised in accordance with the methodology.
- i) The headlines of additionality tool v5.2 are applied to the discussion.

Documentation Provided by Project Participant:

PDD v 3

Ref 15 letter from YapiKredi to Pioneer Carbon

Ref 16 board decision

Ref 12 Proforma Income Statement (Carbon).xls

Information Verified by Lead Assessor:

Letter from investment bank YapiKredi

Board decision to realize the project as GHG project to improve the cash flow

List of private HPPs in Turkey

After 2002 private investments in hydro are negligible,

Excel Investment and sensitivity analysis shows IRR 12.9% (after ref 12) (10.09 % after ref 31) inclusive Carbon Credits and 11.1% (after ref 12) (6.03 % after ref 31) without. The difference from 11.1 to 12.9 % (respective 6.03 to 10.09) is too small to be the main argument for the investment only with carbon credits but investment barrier might be still relevant.

Reasoning for not Acceptance or Acceptance and Close Out:

Common practice analysis expresses what makes this project different to other hydro projects. It is assumed that the government will remain the predominant investor in hydro projects in the future too that the share of private owned hydro plants remains low. On the other hand it is obviously that massive hydro power capacity addition will take place.

To strengthen the investment barrier argument interviews with Yapi Kredi are relevant

CAR#3 with respect to investment barrier remains open

Not Acceptance and Close out by Lead Assessor: **Date:** 17/12/2008

Yapi Kredi Response:

Date: 09/01/2009 & 23/02/2009

The Project and Structured Finance Group has presented the project with carbon credit revenue and without this additional potential revenue the project may not be approved by Yapi Kredi.

Documentation Provided by Project Participant:

PDD v4

ref 29_Yapikredi declaration on ERU.htm

ref 30_Yapikredi on criteria investment decision.htm

Information Verified by Lead Assessor:

The income from carbon credits as part of the investment was seriously taken into account by investment bank Yapi Kredi (total proposed income from credits over 10 y = 14,680,000 € equal to 18 % of total investment 81,670,000 €, own capital 27,670,000 € (=34%) ; debt 54,000,000 € (=66%))

Technological barrier is not accepted as proof for the additionality of this specific project. Other hydro projects face also technological barriers and they are more or less known before project start, the problems might be different but geological problems are typical and have always negative impact on the investment volume. Surely with respect to private or public investment the assessment of this impact is of huge relevance and part of the risk assessment.

The discussion of alternatives (Step 1 additionality tool) presents only the project without being registered as VER project and current practice (alternative b and c are more or less identical). The arguments from investment barrier analysis are repeated. The overcome of the investment barrier for private investor is the main issue.

Reasoning for not Acceptance or Acceptance and Close Out:

Additionality discussion in final documents follows the additionality tool v5.2.

Barrier analysis is used. Main barrier is investment barrier due to high investment risk. This barrier is overcome by additional income from credits, the investment Bank has seriously taken into account that carbon credits reduce the risk. The investment decision was based on this additional income.

CAR #3 closed

Acceptance and Close out by Lead Assessor: **Date:** 24/02/2009

Date: 11/04/2008

Raised by: Jochen Gross

Type: CAR

Number: #4

Reference:

E 1.1

Lead Assessor Comment:

Date: 11/04/2008

International stakeholder consultation has not taken part before site visit

The ISHC process has to be finalized before the end of the project validation. It might be necessary to revise PDD, MP and other documents as consequence of comments received.

Project Participant Response:

Date: 01/09/2008

A stakeholder consultation meeting has been held in accordance with Environmental Impact Assessment studies. The report is provided.

Documentation Provided by Project Participant:

Ref 24. EIA

PDD v 4

Information Verified by Lead Assessor:

Revised documentation of Stakeholder consultation

Reasoning for not Acceptance or Acceptance and Close Out:

Stakeholder consultation is in compliance with local legislation, ISHC not required.

CAR#4 closed

Acceptance and Close out by Lead Assessor:

Date: 19/12/2008

Date: 14/04/2008

Raised by: Jochen Gross

Type: CAR

Number: #5

Reference: A 1.2

Lead Assessor Comment

Date: 14/04/2008

PDD revision number and the date of PDD is missing

Please add revision number and date of revision under paragraph A.1 in the PDD.

Project Participant Response:

Date: 15/08/2008

Revised

Documentation Provided by Project Participant:

Revised Section A.1 | PDD v 3

1b: PDD version 3 from 05/08/2008

Information Verified by Lead Assessor:

Version number and date

Reasoning for not Acceptance or Acceptance and Close Out:

Revised PDD allows clear references with version and date of document.

CAR 5 closed out.

Acceptance and Close out by Lead Assessor:

Date: 24/09/2008

Date: 14/04/2008

Raised by: Jochen Gross

Type: CL

Number: #6

Reference: A 3.1 and A 5.1
A 5.4 and A 5.7
B.2.3

Lead Assessor Comment:

Date: 14/04/2008

The project description is not sufficient

The project layout is not transparent. Please provide additional information and plans and revise PDD

Project Participant Response:

Date: 01/09/2008

The project layout is provided and the description of the project activity is revised.

Documentation Provided by Project Participant:

ref 23_Overview Drawing.JPG

ref 1 c PDD v4

Information Verified by Lead Assessor:

Document is topographical map with the general plan of project site, unique identification is possible now.
Project description in PDD v4 delivers sufficient details about the project design

Reasoning for not Acceptance or Acceptance and Close Out:

Geographic coordinates for project area in revised PDD is approximately 100 km² large. The unique project site is presented in general plan (ref 23).

CL#6 closed

Acceptance and Close out by Lead Assessor: **Date:** 24/09/2008

Date:	14/04/2008	Raised by:	Jochen Gross
Type:	CAR	Number:	#7
		Reference:	A 1.2

Lead Assessor Comment: **Date:** 14/04/2008

PDD template 3.1 is not the most recent version.
Please provide update to 3.2

Project Participant Response: **Date:** 01/09/2008
updated

Documentation Provided by Project Participant:

PDD v3

Information Verified by Lead Assessor:

Insufficient PDD update. This revision is necessary since VCS 2007 is in place. This took place in the period between the site visit 16/04/2008 and the respond from PP 01/09/2008

Reasoning for not Acceptance or Acceptance and Close Out:

After VCS 2007 it is necessary to make us of VCS PD.
Please provide update to the most recent VCS PD template.
CAR 7 remains open.

Acceptance and Close out by Lead Assessor: **Date:** 17/12/2008

Project Participant Response: **Date:** 20/04/2009

It is acceptable to use the CDM PDD template
Annex 6 to PDD v 4 / 18 has been added which sets out the further requirements of the VCS.

Documentation Provided by Project Participant:

See email (ref 40) forwarded to Jochen Gross on 21st April 2009 from Jerry Seager , Program Manager, VCS.
Annex 6 PDD v 4 /18 Contains:

- Declaration that project is not registered under another program
- That the the full Investment and Sensitivity analysis has been made available to the DOE but not included in the PDD as Step 2 (Investment Analysis) has not been used in B5 but it has been provided for background information
- Declaration of Title has been provided, that claims a right to the VERs through ownership of the plant and equipment.
- Declaration that project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction
- Demonstration that the project will not created another form of environmental credit (for example renewable energy certificates).

Information Verified by Lead Assessor:

Revised annex 6 PDD v 4 /18 (ref 1 d) contains VCS specific information
Official respond by VCS (ref 40): It is possible to use CDM PDD template.

Reasoning for not Acceptance or Acceptance and Close Out:

PDD template is accepted by VCS

CAR#7 closed

Acceptance and Close out by Lead Assessor: **Date:** 22/04/2009

Date: 14/04/2008 Raised by: Jochen Gross
Type: CL Number: #8 Reference: A 5.10

Lead Assessor Comment: **Date:** 14/04/2008

PDD do not address training and maintenance needs

It is stated that local people shall be employed when ever possible. It is assumed that hydro energy experts are not available locally. Therefore training will become relevant to ensure the operation of the plant. Maintenance needs of the plant are not explained.

Please provide the necessary information on training and maintenance needs

Project Participant Response: **Date:** 15/08/2008

Technicians and skilled workers will be trained by TEİAŞ and have a specific certificate for working with high voltage equipments. These people will be employed from locally whenever possible for logistic purposes. When they are not available locally, people from other cities will be employed. For other types of works that do not require specific expertise (such as drivers, logistics, cooking, security) local people will have priority. They will have training if required (especially for security guards).

A paragraph has been inserted regarding training of the staff recruited. In section A2 PDD

Documentation Provided by Project Participant:

PDD v3

Information Verified by Lead Assessor:

Expression of training needs is addressed in revised PDD v 3 (ref 1b)

Maintenance for electricity meters is expressed in Annex 3 PDD v3

Reasoning for not Acceptance or Acceptance and Close Out:

Please provide the necessary information on maintenance needs for the hydro plant

CL#8 remains open

Not acceptance and Close out by Lead Assessor: **Date:** 24/09/2008

Project Participant Response: **Date:** 18/04/2009

Please see attached document which details how staff will be trained onsite on the maintenance requirements of the project and, inter alia, the nature of those maintenance tasks. The Project developer has confirmed that the exact maintenance intervals have not been set.

Documentation Provided by Project Participant:

See attached document: Darica, Maintenance Training. PDF

Information Verified by Lead Assessor:

Ref 36: training plan for maintenance needs from supplier of HPP

Reasoning for not Acceptance or Acceptance and Close Out:

Relevant information on training and maintenance is available now.

CL#8 closed

Acceptance and Close out by Lead Assessor: **Date:** 22/04/2009

Date: 14/04/2008 Raised by: Jochen Gross
Type: CL Number: #9 Reference: A 5.11

Lead Assessor Comment: **Date:** 14/04/2008

Implementation schedule is not available.

Risk for delays can not be assessed without additional information. Please provide project implementation schedule in revised PDD

Project Participant Response: **Date:** 11/08/2008

Implementation schedule is added in section A.4.11

Documentation Provided by Project Participant:

PDD v3

Information Verified by Lead Assessor:

In response to CL 9 Implementation schedule is added in section A.4.11.

Reasoning for not Acceptance or Acceptance and Close Out:

No risks for delays foreseen based on planning.

CL#9 closed out

Acceptance and Close out by Lead Assessor: **Date:** 24/09/2009

Date: 14/04/2008

Raised by: Jochen Gross

Type: CAR

Number: #10

Reference:

A 7.6

Lead Assessor Comment:

Date: 14/04/2008

The spreadsheet with the projected emission reductions is wrong.

Please revise the spreadsheet and PDD according to 10 y crediting period as required after VCS. The start of the crediting period in Jan 2009 seems to be unrealistic. Only 8 month available for the construction.

Project Participant Response:

Date: 11/08/2008

The schedule has been revised.

Documentation Provided by Project Participant:

PDD v3

Information Verified by Lead Assessor:

Information is presented for the year from June to May and not as required for calendar years (Jan – Dec)

Reasoning for not Acceptance or Acceptance and Close Out:

Please revise spreadsheets for projected ERs in sections A 4.4 and B 6.4 of PDD.

Please present the figures as required for calendar years (Jan – Dec) and not for the year from June to May.

Please provide the revised PDD along with the excel calculation spreadsheet for the projected ERs.

CAR 10 remains open

Acceptance and Close out by Lead Assessor: **Date:** 24/09/2008

Project Participant Response:

Date: 20/04/2009

This has been rectified in section A4.4 and B 6.4

Documentation Provided by Project Participant:

See first sheet entitled "Summary" in workbook called "Darica Proforma and Income Statement 090420" for this information.

Clarification is also provided that the expected generation figure in MWh comes from a proprietary model, the output of which is shown in Annex 7

PDD is also amended in sections A4.4 and B6.4 as requested

Information Verified by Lead Assessor:

Ref 37: excel workbook shows calculation of ERs based on calendar years as requested. This information is consistent to Ref 1 d (revised PDD v 4 / 18 section A 4.4 and B 6.4).

See Ref 17 and ref 20 on expected generation as cross reference.

Reasoning for not Acceptance or Acceptance and Close Out:

Predicted emission reductions are presented correct and consistent in the documents. Calculation is based on ACM0002 v7 along with recent grid tool v 1 for CM EF.

Acceptance and Close out by Lead Assessor: **Date:** 22/04/2009

Date:	10/04/2008	Raised by:	Jochen Gross		
Type:	CI	Number:	#11	Reference:	A 3.2
Lead Assessor Comment:			Date: 10/04/2008		
Direct links to information sources are missing					
Direct links to information sources from IPCC 2006 and IPPC are missing. It is too time consuming to search the information source. Please provide direct link to the relevant spreadsheet or a copy.					
Project Participant Response:			Date: 11/08/2008		
Revised					
Documentation Provided by Project Participant:					
Revised PDD v3					
Information Verified by Lead Assessor:					
Information sources					
Reasoning for not Acceptance or Acceptance and Close Out:					
Not readable: Annex.4. Emission Trends, First National Communication of Turkey on Climate Change, January 2007, (pg. 243) (http://www.undp.org.tr/Gozlem2.aspx?WebSayfaNo=531)					
Not readable: Chapter.5.Projections and Mitigations Scenarios, First National Communication of Turkey on Climate Change, January 2007, (pg. 121-157) (http://www.undp.org.tr/Gozlem2.aspx?WebSayfaNo=531)					
CL#11 remains open					
Not acceptance and Close out by Lead Assessor:			Date: 24/09/2008		
Project Participant Response:			Date: 20/04/2009		
Now updated to a reference on the UNFCCC website, taken to be more reliable					
Documentation Provided by Project Participant:					
For both the above references please see the link on http://unfccc.int/resource/docs/natc/turnc1.pdf					
Page number in the Communication is referenced in each footnote in the PDD.					
Please note that this takes time to download as it is a large file.					
Information Verified by Lead Assessor:					
New reference to UNFCCC website works proper.					
Reasoning for not Acceptance or Acceptance and Close Out:					
Factors are taken exactly from reliable information sources IPCC 2006 and IPPC.					
CL#11 closed					
Acceptance and Close out by Lead Assessor:			Date: 22/04/2009		

Date:	14/04/2008	Raised by:	Jochen Gross		
Type:	CI / (OBS)	Number:	#12 / (I)	Reference:	B 10.1 & B 11.3 B 12.2 & B 12.3 B 13.1 & B 13.2 B 13.3 & B 13.4 B 13.5 & B 13.6 B 13.7 & B 13.9
Lead Assessor Comment:			Date: 14/04/2008		

Monitoring Plan is not sufficient

MP should be more precise with respect to monitoring personnel, intervals and QA/QS measures. Responsibility should be addressed to individuals.

For diesel consumption, Monitoring system, monitoring equipment, Calibration and maintenance procedures unknown/ missing

Responsibility for VCS registration and periodic reporting is not expressed in MP.

Relevant procedures as addition to the MP are missing for:

- Training of monitoring personnel
- measures for ensuring data quality (QA/QS measures as internal audits, management review, continuous improvement etc. are not defined)
- for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)
- dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems
- project performance reviews before data is submitted for verification, internally or externally

The content of the MP is a relevant part of the monitoring report later on.

Project Participant Response:

Date: 04/08/2008

Monitoring plan is updated and an organisation scheme is provided.

Documentation Provided by Project Participant:

PDD v3

Information Verified by Lead Assessor:

The revised PDD is not sufficient after VCS 2007.

Please provide MP along with relevant procedures for validation.

Reasoning for not Acceptance or Acceptance and Close Out:

The revised PDD is not sufficient after VCS 2007.

CL#12 remains open

Not Acceptance and Close out by Lead Assessor:

Date: 24/09/2008

Project Participant Response:

Date: 20/04/2009

The Monitoring Plan has been updated in accordance with the guidelines of VCS 2007, i.e. Section 5.11 "Monitoring Information" in the "Voluntary Carbon Standard - Specification for the project-level quantification, monitoring and reporting as well as validation and verification of greenhouse gas emission reductions or removals" dated 18th November 2007.

Documentation Provided by Project Participant:

Please see Annex 4 for updated monitoring information which now includes the following:

- purpose of monitoring;
- types of data and information to be reported - including units of measurement;
- origin of the data;
- monitoring methodologies, including estimation, modelling, measurement or calculation approaches;
- monitoring times and periods, considering the needs of intended users;
- monitoring roles and responsibilities;
- GHG information management systems, including the location and retention of stored data.

Information Verified by Lead Assessor:

Ref 1 d PDD v 4 / 18 annex 4 Monitoring plan to revised PDD presents relevant information for the monitoring.

Reasoning for not Acceptance or Acceptance and Close Out:

The information on monitoring in section and Annex 4 PDD v 4 / 18 are sufficient to assess that it is likely that high quality monitoring will become possible.

Never the less relevant information on location of power meters for monitoring of net electricity supplied to the grid and procedures as addition to the MP are still missing:

- for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)
- dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems
- project performance reviews before data is submitted for verification, internally or externally

CL 12 is transformed in **OBS 1** to ensure that relevant information on meter location and procedures will be developed and implemented before start of crediting period. This will be verified during first verification of emission reductions.

OBS I: Please present location of power meters for monitoring of net electricity supplied to the grid, information (calibration, maintenance, location, typ, etc.) on meter for diesel consumption and develop and implement procedures as addition to the MP before start of crediting period for:

- day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)
- dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems
- project performance reviews before data is submitted for verification, internally or externally

CL 12 is transformed in **OBS 1**

Acceptance and Close out by Lead Assessor: **Date:** 22/04/2009

Date:	14/04/2008	Raised by:	Jochen Gross
Type:	CL	Number:	#13
		Reference:	B 4.3

Lead Assessor Comment: **Date:** 14/04/2008

The board decision to go ahead with the project as VCS project is missing.

This is relevant due to main argument for additionality (investment barrier). Please provide a copy of the Board decision and E-Mails on negotiations between Bilgin and Pioneer Carbon.

Project Participant Response: **Date:** 04/08/2008

The Administrative Board decision has been provided.

Documentation Provided by Project Participant:

ref16_admin_board_desicion.pdf

Information Verified by Lead Assessor:

Administrative Board has met on 01.09.2006 in the Central Office and decided that the project cash flow will be improved by Carbon Reduction Certification. It is also agreed that necessary arrangements should be done and quotations should be requested from related companies for development of the project.

Administrative Board of Yapısan Electricity Generation Corporation Mehmet Vehbi Bilgin,

Ümit Tolga Bilgin,

Altuğ Bilgin

Carbon Revenues were taken into account just to improve the cash flow, but carbon revenues are not the key indicator for the Board decision to realize the project or not.

If the investment bank decision (YapiKredi) to spend the money for the project is linked to carbon revenues as key indicator has to be assessed finally by interview. This information is the main point for the assessment of financial barriers.

Reasoning for not Acceptance or Acceptance and Close Out:

Carbon Revenues were taken into account just to improve the cash flow, but carbon revenues are not the key indicator for the Board decision to realize the project or not.

CI#13 closed, see CAR#3 on interview with Yapi Kredi

Acceptance and Close out by Lead Assessor: **Date:** 24.02.2009

Date: 14/04/2008 Raised by: (Insert Name)

Type: CL Number: #14 Reference: B 4.6

Lead Assessor Comment: **Date:** 14/04/2008

Investment analysis is missing.

Please provided a copy in excel format.

Project Participant Response: **Date:** 11/08/2008

Investment analysis is provided.

Documentation Provided by Project Participant:

ref 12_Proforma Income Statement (Carbon).xls

Information Verified by Lead Assessor:

Investment analysis provided in excel format

Reasoning for not Acceptance or Acceptance and Close Out:

Investment analysis not applied for additionality. Invest analysis just relevant as background information for investment barrier

CL#14 closed

Acceptance and Close out by Lead Assessor: **Date:** 17/12/2008

Date: 14/04/2008 Raised by: Jochen Gross

Type: CAR Number: #15 Reference: A 3.4, B 8.3 and
C 1.1 & C 1.3

Lead Assessor Comment: **Date:** 14/04/2008

Crediting period is wrong. Project start seems to be not realistic. The crediting period is not renewable after VCS. Please correct C. 2.1 and use C .2.2

VCS requires crediting period of 10y. Please revise PDD and excel calculation accordingly.

Project Participant Response: **Date:** 11/08/2008

PDD Revised

Documentation Provided by Project Participant:

PDD v3

Information Verified by Lead Assessor:

Revised PDD v3 shows 10 year period as required by VCS.

Crediting period shall start June 2009 but format wrong.

Reasoning for not Acceptance or Acceptance and Close Out:

Start date of project after VCS is date of financial closure (see VCS guidance).

Start date of crediting period is different.

Please define start date of project under C.1.1 and start date of crediting period under C.2.1.1 in the format dd/mm/yyyy and consistent with the calculation spreadsheet for emission reductions forecast and all other documents. Repeat this information in project chronology (table 2 implementation schedule)

Please revise format of start of crediting period and provide consistent information with the calculation spreadsheet for emission reductions forecast and all other documents

Not acceptance and Close out by Lead Assessor: **Date:** 17/12/2008

Project Participant Response: **Date:** 20/04/2009

Financial Close was reached on the 28th February 2007.

Section C has been amended to reflect the correct Project Start Date, Crediting Period and Start Date of the Crediting Period.

Documentation Provided by Project Participant:

This is has been confirmed by the letter from Yapi Credi, already supplied

Information Verified by Lead Assessor:

Ref 1 d PDD v4 / 18: project start date, start of crediting period and length of period are in compliance with VCS requirements.

This was approved with letter from Yapi Kredi, implementation schedule along with site visit.

Reasoning for not Acceptance or Acceptance and Close Out:

Definition of project start date, start of crediting period and length of crediting period is correct.

CAR#15 closed

Acceptance and Close out by Lead Assessor: **Date:** 22/04/2009

Date: 14/04/2008

Raised by: Jochen Gross

Type: CAR

Number: #16

Reference:

D 1.1 – 1.6

Lead Assessor Comment:

Date: 14/04/2008

EIA impact is not discussed sufficiently.

Please provide a copy of the EIA in English

Project Participant Response:

Date: 15/08/2008

The environmental impacts and mitigation measures have been explained in detail. A copy of English version is provided.

Documentation Provided by Project Participant:

ref 24_EIA_eng.pdf

PDD v3 with Annex 6 EIA Affirmative Certificate

Information Verified by Lead Assessor:

Approved EIA

Reasoning for not Acceptance or Acceptance and Close Out:

Construction licence is not relevant (See question 8 annex 1 local checklist: No development plan for the region yet. This means that the licensing process is different. There is no construction license required. Project managers applied for the integration of the site into future development plan with ministry of construction. This was granted in the beginning of 2007.). Official approval of EIA is seen as construction license.

CAR#16 closed

Acceptance and Close out by Lead Assessor: **Date:** 18/12/2008

Date: 14/04/2008 Raised by: Jochen Gross
Type: CL Number: #17 Reference: D 1.3

Lead Assessor Comment: **Date:** 14/04/2008

Approval of EIA from Ministry of forest and environment is missing.
Please provide a copy.

Project Participant Response: **Date:** 15/08/2008

The EIA Affirmative Certificate is attached to PDD as Annex.6

Documentation Provided by Project Participant:

PDD v3 with Annex 6 EIA Affirmative Certificate

Information Verified by Lead Assessor:

EIA approval

Reasoning for not Acceptance or Acceptance and Close Out:

Approval provide as requested
CL#17 closed

Acceptance and Close out by Lead Assessor: **Date:** 15/08/2008

Date: 14/04/2008 Raised by: Jochen Gross
Type: CL Number: #18 Reference: E 1.1 – 1.6

Lead Assessor Comment: **Date:** 14/04/2008

The (initial) stakeholder consultation report is missing.
Please provide a copy of the ISC Meeting and an official approval.

Project Participant Response: **Date:** 08/08/2008

The report for ISC has been provided. The official approval has been added to the PDD as Annex.6.

Documentation Provided by Project Participant:

ISC report as part of EIA

Information Verified by Lead Assessor:

ref 24_EIA_eng.pdf

Reasoning for not Acceptance or Acceptance and Close Out:

Copy received as requested.
CL#18 closed

Acceptance and Close out by Lead Assessor: **Date:** 08/08/2008

Date: 23/04/2008 Raised by: Jochen Gross
Type: CL Number: #19 Reference: B 7.2 & 7.3; 7.4; 7.6

Lead Assessor Comment: **Date:** 23/04/2008

The calculation of the proposed generation is not clear.

Please provide evidence for the calculation of future generations. (prediction with specific software)

Project Participant Response:

Date: DD/MM/YYYY

[Note to PP: Insert your Response to SGS Finding here]

Documentation Provided by Project Participant:

Ref 17 ElectricityGeneration_Calc.doc

ref 20_Darica I Isletme-p1.pdf

ref 20_Darica I Isletme-p2.pdf

Information Verified by Lead Assessor:

The word document is the English translation of ref 20 , the original printouts from the software for electricity generation calculations of Darica-1 HPP

Reasoning for not Acceptance or Acceptance and Close Out:

Based on information provided,

CL#19 closed

Acceptance and Close out by Lead Assessor:

Date: 17/12/2008

Date: 24/09/2008

Raised by: Jochen Gross

Type: CAR

Number: #20

Reference:

A 1.1

Lead Assessor Comment:

Date: 24/09/2008

signed copy of Terms and Conditions for the VCS Program 2007 is missing

Project Participant Response:

Date: 20/04/2009

We have received confirmation from Jerry Seager, program Manager for the VCS that this is no longer a requirement.

Documentation Provided by Project Participant:

Please see email forwarded to Jochen Gross on 21st April.

Information Verified by Lead Assessor:

Revised annex 6 PDD v 4 /18 (ref 1 d) contains VCS specific information

Official respond by VCS program manager (ref 40): signed copy of T & C is no longer mandatory.

Reasoning for not Acceptance or Acceptance and Close Out:

signed copy of T & C is no longer mandatory.

CAR#20 closed

Acceptance and Close out by Lead Assessor:

Date: 22/04/2009

Date: 24/09/2008

Raised by: Jochen Gross

Type: CAR

Number: #21

Reference:

B 2.1 & B 5.2; B 7.1;
B 7.6; B 9.1; B 9.2; B
10.1 & B 10.3 to B
10.7 & B11.1 to 11.4

Lead Assessor Comment:

Date: 17/12/2008

Application of ACM0002 v 7 is wrong. Project emissions are not taken into account.

B 7.2 PDD v 3 indicates that a diesel generator is in use. Please provide more information about this project emission source.

Annex 4 PDD v 3 does not talk about monitoring of diesel consumption or project emission.

B 7.2 and Annex 4 are inconsistent.

Project emissions are not taken into account for calculation of predicted ERs after equation 11 from ACM0002 v 7.

Project Participant Response:

Date: 20/04/2009

Annex 4 (Monitoring Information) now discusses the recording of the use of diesel by the standby generator on site.

Project Emissions have been taken into account in the revised PDD. They are not calculated ex ante, as the amount the generator may be used cannot be known. Please see amended Fossil Fuel Monitoring under B.7.1 and description in B.6.3 new number 4. Also see amended table 6.2

Documentation Provided by Project Participant:

See addition to PDD discussed above.

Information Verified by Lead Assessor:

Ref 1 d (PDD v 4 / 18) revised sections B 6.3, B 7.2 and Annex 4 in the PDD add diesel consumption by generator as project emission.

Reasoning for not Acceptance or Acceptance and Close Out:

PP has added monitoring of project emission correctly, but respond to CAR#21 above talks about leakage emissions. PDD v 4 / 18 talks about project emission on page 29 correctly

CAR#21 closed.

Acceptance and Close out by Lead Assessor: **Date:** 22/04/2009

Date: 24/09/2008 Raised by: Jochen Gross

Type: CAR Number: #22 Reference: A 12.1

Lead Assessor Comment: **Date:** 24/09/2008

Declaration that no commercially sensitive information has been excluded is missing (see PD template VCS 2007)

Project Participant Response: **Date:** 20/04/2009

This declaration has been made in Annex 6 in the PDD.

Documentation Provided by Project Participant:

PDD v 4 / 18

Information Verified by Lead Assessor:

Ref 1 d: PDD v 4 / 18 new annex 6 presents the relevant declaration from PP.

Reasoning for not Acceptance or Acceptance and Close Out:

Declaration provided as required

CAR#22 closed

Acceptance and Close out by Lead Assessor: **Date:** 22/04/2009

Date: 24/09/2008 Raised by: Jochen Gross

Type: CAR Number: #23 Reference: A 3.5 & A 7.1 & A7.2

Lead Assessor Comment: **Date:** 24/09/2008

Notification of relevant local laws and regulations related to the project and demonstration of compliance with them is missing.

Project Participant Response: **Date:** 20/04/2009

We have the EIA and Licence. Do you have any specific laws in mind?

Documentation Provided by Project Participant:

Ref 9 generation license and Annex.5 PDD v 4 / 18: EIA AFFIRMATIVE CERTIFICATE

Information Verified by Lead Assessor:

Ref 9 and Annex 5 to PDD v 4 / 18.

Reasoning for not Acceptance or Acceptance and Close Out:

All relevant local laws and regulations are taken into account, project is in legal compliance.

Acceptance and Close out by Lead Assessor: **Date:** 22/04/2009

Date: 24/09/2008 Raised by: Jochen Gross

Type: CAR Number: #24 Reference: A 3.2; A 3.3; A 5.6; B 6.1

Lead Assessor Comment: Date: 24/09/2008

Inconsistent information:

- a) EIA (ref 24) tells operation start is scheduled 2010- this information is not consistent to other information sources (crediting shall start on June 2009 after PDD);
- b) table 1 PDD shows annual estimate of ER 214,640 tonnes of CO2 e- excel calculation spreadsheet ref 12_Proforma Income Statement (Carbon).xls shows different value 209,722. Please provide consistent documents

Project Participant Response: Date: 20/04/2009

- a) Note that the EIA was written at a very early stage in the Project Cycle, when the commissioning date could only be estimated. As the project has progressed a new date has been scheduled. The PDD is correct, but the EIA cannot be changed now that it is a finished document.
- b) The PDD has been updated to the spreadsheet amount for consistency

Documentation Provided by Project Participant:

PDD v 4 /18

Information Verified by Lead Assessor:

Ref 1 d PDD v 4 / 18

Reasoning for not Acceptance or Acceptance and Close Out:

Start of operation and crediting period as well as predicted emission reduction presented in final PDD is correct.

CAR#24 closed

Acceptance and Close out by Lead Assessor: Date: 22/04/2009

Date: 24/09/2008 Raised by: Jochen Gross

Type: CAR Number: #25 Reference: A 3.2

Lead Assessor Comment: Date: 24/09/2008

Units for VCS 2007 GHG certificates are VCUs not VERs. Generation license is not Annex 2. Annex 2: is information regarding public funding. Please correct documents.

Project Participant Response: Date: 20/04/2009

- a) On a point of clarification: a project generates Verified Emissions Reductions. Once these have been entered into a VCS Registry they become Voluntary Carbon Units. The term VER has therefore not been used in the PDD.

- b) This has been updated – as has numbering of all annexes and index on cover page. Generation Licence has been added as Annex 8

Documentation Provided by Project Participant:

The VER / VCU distinction was clarified during a telephone conversation with Jerry Seager, Program Manager, VCS in early 2009 in regards to another project.

Information Verified by Lead Assessor:

Ref 1 d PDD v 4 /18

Respond b is wrong, the term VER is used in the PDD but VCU is not used. PP understand the difference of VCU and VER.

Reasoning for not Acceptance or Acceptance and Close Out:

Technical terms VCU and VER defined correctly, application in PDD could be improved but not essential. This is accepted for this voluntary project.

Final PDD presents annexes as required by PD template.

CAR #25 closed

Acceptance and Close out by Lead Assessor: Date: 22/04/2009

Date:	24/09/2008	Raised by:	Jochen Gross
Type:	CL	Number:	#26
		Reference:	B 4.3
Lead Assessor Comment:		Date: 24/09/2008	
Evidence missing. Information source not found under the internet link shown in the foot note 3 PDD v1 from 02/04/2008 (First National Communication of Turkey on Climate Change, January 2007) , please provide copy of the information source.			
Project Participant Response:		Date: 20/04/2009	
The file can be found on the UNFCCC website at http://unfccc.int/resource/docs/natc/turnc1.pdf which should be more reliable. It is 12MB, so please be patient when downloading. If you cannot, I can try to email.			
Documentation Provided by Project Participant:			
See above			
Information Verified by Lead Assessor:			
Evidence for possibility of major changes in river flow regime due to reduction of snow. foot note 4 in revised PDD v 4 / 18 on, taken from First Communication on Climate Change Turkey. Page 165 Web link above works proper.			
Reasoning for not Acceptance or Acceptance and Close Out:			
Evidence provided as requested			
CAR#26 closed			
Acceptance and Close out by Lead Assessor:		Date: 22/04/2009	

Date:	17/12/2008	Raised by:	Jochen Gross
Type:	CAR	Number:	#27
		Reference:	B 7.1 & 7.2
Lead Assessor Comment:		Date: 17/12/2008	
Calculation of ERs not transparent.			
Please			
a) presented units in excel calculation spreadsheet,			
b) correct punctuation in PDD section B 6.3 point 4 for CM EF			
c) make it transparent that the formula 11 was used to calculate ERs and not formula 7 which is for BL (section B 6.3. PDD)			
Project Participant Response:		Date: 20/04/2009	
Calculation is shown on "Summary" page of Excel work book provided "Darica Financial 090420" and clearly marked with Equation numbers from the Methodology.			
Punctuation corrected, now in Point 5			
Documentation Provided by Project Participant:			
See Workbook referenced above.			
Information Verified by Lead Assessor:			
Ref 37 Darica Financials 090420.xls. Excel work book shows calculation of ERs 209,722 Tonnes CO2 per annum transparently. Calculation is in compliance with ACM0002 v7 and with PDD template.			
Information is consistent to final PDD v 4 / 18 (ref 1d)			
Reasoning for not Acceptance or Acceptance and Close Out:			
Excel work book shows calculation of ERs transparently. Calculation is in compliance with ACM0002 v7 and consistent to final PDD v 4 / 18			
CAR#27 closed			
Acceptance and Close out by Lead Assessor:		Date: 22/04/2009	

Date:	17/12/2008	Raised by:	Jochen Gross
Type:	CAR	Number:	#28
		Reference:	B 8.2

Lead Assessor Comment:

Date: 17/12/2008

Table A 4.4 and 6.2 are not applied correctly. In the first year, please provide only the share from June to Dec.2009. In line 2 to 9 the calendar years (Jan. to Dec) and in the last line the share from Jan. to May 2017 above the line for total 10year.

Project Participant Response:

Date: 20/04/2009

Tables have been updated.

Documentation Provided by Project Participant:

Please see above

Information Verified by Lead Assessor:

Final PDD v 4 / 18 (Ref 1d) and Ref 37_Darica Financials 090420.xls

Reasoning for not Acceptance or Acceptance and Close Out:

Table A 4.4 and 6.2 are applied correctly in PDD v 4 /18 .

CAR#28 closed

Acceptance and Close out by Lead Assessor:

Date: 22/04/2009

A.4 Annex 4: Team Members Statements of Competency

Statement of Competence

Name: Jochen Gross

SGS Affiliate: Germany

Status

- | | |
|---------------------------|-------------------------------------|
| - Product Co-ordinator | ☒ |
| - Operations Co-ordinator | ☐ |
| - Technical Reviewer | ☒ |
| - Expert | ☒ |

Validation

Verification

- | | | |
|---------------------------------------|-------------------------------------|-------------------------------------|
| - Local Assessor | ☒ | ☒ |
| - Lead Assessor | ☒ | ☒ |
| - Assessor
/ Trainee Lead Assessor | ☒ | ☒ |

Scopes of Expertise

- | | |
|--|-------------------------------------|
| 1. Energy Industries (renewable / non-renewable) | ☒ |
| 2. Energy Distribution | ☐ |
| 3. Energy Demand | ☐ |
| 4. Manufacturing | ☒ |
| 5. Chemical Industry | ☐ |
| 6. Construction | ☐ |
| 7. Transport | ☐ |
| 8. Mining/Mineral Production | ☐ |
| 9. Metal Production | ☒ |
| 10. Fugitive Emissions from Fuels (solid, oil and gas) | ☐ |
| 11. Fugitive Emissions from Production and | ☐ |

Consumption of Halocarbons and Sulphur Hexafluoride

- | | |
|-------------------------------------|--------------------------|
| 12. Solvent Use | ☐ |
| 13. Waste Handling and Disposal | ☐ |
| 14. Afforestation and Reforestation | ☐ |
| 15. Agriculture | ☐ |

Approved Member of Staff by

Date:

Statement of Competence

Name:

SGS Affiliate:

Status

- Product Co-ordinator ☐
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☐

Validation

Verification

- Local Assessor ☐
- Lead Assessor ☐
- Assessor ☒
- / Trainee Lead Assessor ☒

Scopes of Expertise

- 1. Energy Industries (renewable / non-renewable) ☒
- 2. Energy Distribution ☐
- 3. Energy Demand ☐
- 4. Manufacturing ☒
- 16. Chemical Industry ☐
- 17. Construction ☐
- 18. Transport ☐
- 19. Mining/Mineral Production ☐
- 20. Metal Production ☐
- 21. Fugitive Emissions from Fuels (solid, oil and gas) ☐
- 22. Fugitive Emissions from Production and ☐

Consumption of Halocarbons and Sulphur Hexafluoride

- 23. Solvent Use ☐
- 24. Waste Handling and Disposal ☐
- 25. Afforestation and Reforestation ☐
- 26. Agriculture ☐

Approved Member of Staff by

Date: