

VALIDATION REPORT

Energio-Aragvi Ltd.

Gudauri Small Hydropower Project

SGS Climate Change Programme

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Summary:				
<p>Energo-Aragvi Ltd. has commissioned SGS to perform the validation of the project: Gudaauri Small Hydropower Project.</p> <p>Methodology Used: AMS-I.D</p> <p>Version and Date: Version 17 and valid from 17/06/2011.</p> <p>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 CDM Validation and Verification Manual (Version 01.2), Kyoto Protocol requirements, CDM Executive Board/UNFCCC rules.</p> <p>The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable simplified methodology and underlying formulae and calculations.</p> <p>The report and the annexed validation describes a total of 18 findings which include:</p> <ul style="list-style-type: none"> • 14 Corrective Action Requests (CARs); • 04 Clarification Requests (CLs); • No Forward Action Requests (FARs); and <p>All findings have been closed satisfactorily. The project will be recommended to the CDM Executive Board for registration</p>				
Subject:		Document Distribution		
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Abbreviations

BM	Built Margin
CAR	Corrective action request
CDM	Clean development mechanism
CDM EB	CDM Executive Board
CER	Certified emission reduction
CES	Clean Energy Solutions
CH ₄	Methane gas
COP/MOP	The Conference of Parties serving as Meeting of the Parties to the Protocol
CO ₂ e	Carbon Dioxide Equivalent
CL	Clarification request
DG	Diesel Generator
DOE	Designated Operational Entity
DNA	Designated National Authority
EAC	Energo-Aragvi Ltd.
EB	Executive Board
ECA	Export Credit Agencies
EIA	Environmental Impact Assessment
E&M	Electro -Mechanical
EMP	Environmental Management Programme
ERPA	Emission reduction Purchase Agreement
ESCL	Electricity System Commercial Operator Ltd
FAR	Forward action request
FI	Financial Institution
GHG	Greenhouse gas(es)
GSP	Global Stakeholder consultation Process
GWh	Giga Watthour
HCA	Host Country Approval
IC CES	IC- Clean Energy Solutions
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
KPC	Kommunalkredit Public Consulting GmbH
KV	Kilo Volt
LoA	Letter of Approval
LoI	Letter of Interest
MoC	Modalities of Communication, version1.4
MoM	Minutes of Meeting
MW	Mega Watt
MWh	Mega Watt hour
N ₂ O	Nitrous Oxide gas
NGO	Non-Governmental Organization
ODA	Official Development Assistance
OM	Operating Margin
PDD	Project Design Document
PO	Purchase Order
PP	Project Participant
PPA	Power Purchase Agreement
SHHP	Small Hydro Power Project.
SSC	Small Scale CDM project activity
tCO ₂ e	Tons of Carbon Dioxide Equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Energo-Aragvi Ltd to perform a validation of the project: "Gudauri Small Hydropower Project" in Georgia.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual (Version 1.2) and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The proposed CDM project activity involves implementation of a Greenfield small hydro power plant of 9.2 MW capacity at Gudauri region, Dusheti District, Georgia. The project activity is proposed to be implemented in two subsequent phases (8 MW and 1.2 MW) and expected to get commissioned during December 2012 and February 2015 respectively. The generated electricity from the project activity will be evacuated to the national grid system of Georgia and thus will be replacing equivalent amount of electricity at Georgian grid system which could have generated from non renewable sources in absence of the proposed project activity. The project activity being a renewable energy project utilizing natural and clean energy source will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria. The project correctly applies methodology AMS-I.D version 17. 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 160,238 t of CO₂e over a 7 years renewable crediting period, averaging 22,891 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 the UNFCCC.

Signed on Behalf of the Validation Body by Authorized Signatory

Signature:



Name: Siddharth Yadav

Date: 21/12/2012

2. Introduction

2.1 Objective

Energo-Aragvi Ltd has commissioned SGS to perform the validation of the project: "Gudauri Small Hydropower Project" with regard to the relevant requirements for Clean Development Mechanism (CDM) 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 UNFCCC 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 certified emission reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

2.2 Scope

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 Kyoto Protocol requirements, UNFCCC 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 CERs.

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 GHG Project Description

The proposed CDM project activity is implementation of a Greenfield small hydro power project activity with capacity of 9.2 MW at Gudauri region, Dusheti District, Georgia. The project activity is proposed to be implemented in two subsequent phases (8 MW and 1.2 MW) and expected to get commissioned during December 2012 and February 2015 respectively. The first phase will be involving implementation of 8 MW capacity (Two number Pelton turbines of 4MW capacity each) and the second phase will be involving implementation of the commissioning of 1.2 MW Pelton turbines. The renewable energy generated by the project activity will be evacuated to the national grid system of Georgia. The project activity will be thus replacing equivalent amount of electricity at Georgian grid system which could have generated from non renewable sources in absence of the proposed project activity.

2.4 The Names and Roles of the Validation Team Members

Assessment Team	Role
Sanjay Banerjee	Lead Assessor
Sauvik Banerjee	Assessor
Yulia Marskova	Local Assessor
Sanjay Banerjee	Expert TA 1.2- Hydro

Technical Review	Role
Ajoy Gupta	Technical Reviewer
Shivaji Chakraborty	Expert TA 1.2- Hydro

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project design document version 03 dated 28/07/2008 (webhosted) and the subsequent version 04 dated 16/03/2009, version 05 dated 27/08/2010, version 06 dated 16/11/2010, version 07 dated 31/05/2011, version 08 dated 14/02/2012, version 09 dated 23/04/2012, version 10 dated 18/07/2012 and version 11 dated 03/12/2012 (final version)^{2/}. The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2.

The site visit was performed on 29/09/2008 and subsequent re site visit performed on 24/07/2011 and 27/07/2011. The execution team on the site visit checked the methodological applicability, baseline, project additionality; PDD related documents and the results are summarized in Annex I: Local Assessment Checklist. Interview was carried out during the site visit with the local inhabitants to review the local stakeholder feedback of the proposed project activity.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Manual, Version 1.2 dated 30 July 2010^{5/}. 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 (reporting).

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	Conclusion/ CARs/CLs
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 2 to this report

3.3 Findings

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

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**. A CAR is issued, where:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- The CDM requirements have not been met;
- There is a risk that emission reductions cannot be monitored or calculated.

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.

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.

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 FARs.

3.4 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. Findings can be raised at this stage and client must address them within agreed timeline.

4. Validation Findings

4.1 Approval

The Host Party for this project activity is Georgia. Georgia ratified the Kyoto protocol on 16th June 1999.

The copy of Letter of Approval (LoA)^{/3/} issued by the Georgian DNA, Minister of Environment Protection and Natural Resources of Georgia bearing Letter No. 05-06-06/4164 dated 18/11/2009 was made available by the PP to the assessment team. The Letter of Approval (LoA)^{/3/} from the Party confirmed that the host party involved has approved the project activity titled as 'Gudauri Small Hydropower Project', which complies with the requirement stipulated in the paragraph 44 of Annex 01 of EB 55 report.

The name of the project activity and the PP in the Letter of Approval^{/3/} issued by the Host Country DNA office^{/3/} was verified against section A.1 and section A.3 of the final version of the PDD^{/2/} and was found to be consistent and hence accepted as per Para 45 of Annex 01 of EB 55 report and also the Letter of Approval (LoA)^{/3/} confirms that:

- (a.) Georgia has accessed to the Kyoto Protocol on 16/06/1999 and hence the host is a Party to the Kyoto Protocol;
- (b.) The host party Georgia participates voluntarily in the proposed CDM project activity;
- (c.) The proposed CDM project activity contributes to Sustainable Development in Georgia;
- (d.) The DNA will cooperate with the project participant and the CDM EB to facilitate the CDM process and give assistance, where necessary for the issuance and transfer of CER to the project participant.

The Letter of Approval^{/3/} is unconditional with respect to (a) to (d) mentioned above.

It is further confirmed in accordance with para 49 of the VVM version 1.2^{/5/} that:

- (a) The letter of approval^{/3/} issued by the DNA of Georgia 'Minister of Environment Protection and natural resources' bearing Letter no. 05-06-06/4164 dated 18/11/2009 have been received.
- (b) The authenticity of the letter of approval^{/3/} has been checked and found consistent. Further confirmations vide email dated 18 August 2012 has been obtained from the DNA office of Georgia, Mr. Grigol Lazriev (CDM DNA contact person of Georgia). The DNA office of Georgia confirmed that the project bearing the unique title was considered in the LoA meeting held on 20/12/2011 and the Letter of Approval^{/3/} accorded vide letter No 05-06-06/4164 dated 12/11/2009. Based on the communication and confirmation received from the Host Party DNA Office, it was accepted by the assessment team that the DNA approval was correctly done and the approval from Georgian DNA was found to be consistent and thus accepted. It was confirmed that the letter of approval has been issued by the Georgian Designated National Authority (DNA) and it is valid for the proposed CDM project activity under validation.
- (c) It was confirmed that the letter of approval conforms with all the requirement of the paragraphs 45 to 48 of the VVM version 1.2^{/5/}

Discussion of CARs/CLs:

The webhosted PDD^{/1/} mentions the participation of both Austria and Georgia. The PP was requested to submit the Letter of Approval for the project activity from DNA of Georgia as well as from the DNA of Austria. **CAR#01** was raised in this regard

In response, the PP had submitted the Letter of Approval^{/3/} from the DNA of Georgia, Minister of Environment and Natural Resources of Georgia dated 18/11/2009 ref no: 05-06-06/4164. The LoA^{/3/} was cross- checked against the original LoA^{/3/} letter and was found to be consistent, hence accepted. In addition to that, the PP also clarified that Austria is not a Host Party for the project activity and the same has been corrected in the final version of the PDD^{/1/}. The LoA^{/3/} issued by the Georgian DNA clearly stated the four requirements as indicated by Para 45-48 of EB 55 Annex 1 (Validation and Verification Manual version 1.2)^{/5/} which was checked and it was concluded that Georgia is a Party to the Kyoto Protocol; the participation in the proposed CDM project activity is voluntary and assists Georgia in achieving Sustainable development.

The letter of approval^{/3/} has also indicated the precise title that is being submitted along with this validation report and is unconditional. This is in accordance with paragraphs 44-50 of VVM version 1.2^{/5/} and hence is accepted. Thus, **CAR#01** was closed out.

Opinion:

The LoA^{/3/} clearly stated the four requirements as indicated by Para 45-48 of EB 55 Annex 1 (Validation and Verification Manual version 1.2)^{/5/} which was checked and it was concluded that Georgia is a Party to the Kyoto Protocol; the participation in the proposed CDM project activity is voluntary and assists Georgia in achieving sustainable development. The letter of approval^{/3/} has also indicated the precise title that is being submitted along with this validation report and is unconditional. This is in accordance with paragraphs 44-50 of VVM 1.2^{/5/}. Thus, based upon the above assessment, the validation team confirms that the letter of approval obtained from host country, Georgia is in compliance with the requirements of paragraphs 44-50 of the VVM version 1.2^{/5/} (EB 55, Annex 1).

4.2 Participation Requirements

The Host country for the proposed project activity is Georgia and Georgia has ratified the Kyoto Protocol on 16th June 1999 (<http://maindb.unfccc.int/public/country.pl?country=GE>). The PP listed in tabular form in section A.3 of the final PDD^{/2/} is Energo-Aragvi Ltd. The LoA^{/3/} from the Georgian DNA approves the participation of Energo-Aragvi Ltd; therefore the PP is approved by the Party to the Kyoto Protocol. This is found in line with Para 52 of VVM1.2^{/5/}. Also, the project participants listed in tabular form in section A.3 of the PDD^{/2/} is consistent with the contact details provided in Annex 1 of the PDD^{/2/}. The validation team also confirms that no entities other than those approved as the project participants are included under section A.3 and annex 1 of the PDD^{/2/}.

No Annex I Party has been identified in the latest version of the PDD^{/2/} and therefore no further Letter of Approval was available. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CER can be transferred to an Annex 1 Party, a Letter of Approval from Annex 1 Party will need to be submitted. The PP also submitted the declaration towards non-involvement of ODA dated 22/08/2012^{/10/} was checked and concluded that the project financials will be met through internal accruals hence accepted. The issue of the project finance have been further discussed in details under section 4.3 of this report below.

As a mandatory requirement of the UNFCCC CDM EB, the Project Participants requires to submit the modalities of communication (MoC)^{/4/} before submitting a request for registration for the proposed CDM project activity. The Project Participant provided the MoC^{/4/} dated 20/12/2012 which was found to be in line with the information regarding the particulars provided in the Annex 1 of the Project Design Document (PDD)^{/2/} and complete as per the template of MoC version 1.4. Hence the MoC has been accepted.

This is in accordance with para 51-54 of VVM 1.2^{/5/}.

From the above discussion, it has been concluded that the proposed CDM project activity meets the relevant CDM requirements.

Discussion of CARs/CLs:

The PP was requested to submit the letter on the modalities of communication (MoC)^{/4/} stating the focal point for the project activity. Further, the earlier version of the MoC dated 04/09/2012 as submitted by the PP did not found to include the name of the PP under section 2 and the contact details of the PP was not found to be consistent as per the revised PDD. **CAR#03** was raised in this regard.

In response, Modalities of Communication (MoC)^{/4/} dated 20/12/2012 with the UNFCCC as per Annex60 of EB45 report with the requirement of EB45 Annex59 report has been received from the PP. The same was found correct as per the requirement and information provided in the annex 1 of the revised PDD; hence, **CAR#03** was closed out.

Opinion

The validation team is of the opinion that the proposed CDM project activity meets all the relevant participation requirements stipulated under paragraphs 51 to 54 of the VVM version 1.2 (EB 55 Annex 1)^{/5/}.

4.3 Project Design Document including Project Description

The PP has used the Small Scale Project Design Document Form (CDM-SSC-PDD) version 3 and the headings/logo, format/font follows the standard requirements. The corresponding sections of the PDD are correctly filled and followed the Guidelines for completing the CDM-SSC-PDD, version 5, dated 14th September 2007^{/32/}. These are the latest available versions and have been confirmed from the UNFCCC website. This was checked and it was found to be appropriate as per para 55, 56 and 57 of VVM1.2^{/5/}.

The project activity is titled “Gudauri Small Hydropower Project”. The uniqueness of this title was verified by checking the same on the UNFCCC website. Project title was found to be unique and consistently mentioned in the initial web hosted version of the PDD^{/1/} till the final version of the Project Design Document (PDD)^{/2/} hence found satisfactory. It was further cross-checked with the project title mentioned in the LoA^{/3/} as mentioned under section 4.1 above, and found to be consistent. The project design and its objectives have been transparently explained in the final version of the PDD^{/2/} and are consistent with the timeline of the project history.

The proposed project activity involves setting up of hydro power plant of total installed capacity of 9.2 MW in a phase wise manner with intended implementation of 8 MW power plant in the first phase followed by the subsequent implementation of a further 1.2 MW capacity; the project activity is located in the village Kvasheti on the river Tetri Aragvi close to the Gudauri ski resort and Gudauri region. The renewable energy generated by the project activity will be thereafter evacuated to the nearest 10 kV transmission line substation located 1 km away from the project site, from 10 kV substation, it will be stepped up to 110 kV and will be evacuated to National Grid of Georgia. After implementation of the 1st stage another Pelton turbine of 1.2 MW capacity will be implemented and will be connected to the same 10 kV transmission line substation. It is noteworthy here that the construction and implementation of the proposed project activity was yet to be initiated during the validation site visit at the project site.

The technical detail mentioned in section A.2 of the PDD^{/2/} was found to be accurate and complete with respect to the information as verified from the copy of Gudauri SHPP Project Design Report dated June 2010^{/13/} prepared by Clean Energy Solutions (<http://www.ic-ces.at/index.php?lang=en&mod=9>), page 8 as obtained from the PP during the on-site validation. Further the consistency of the project description and technical details of the Gudauri SHPP was also cross checked during on-site interview with the senior personnel of Energo-Aragvi Ltd., namely Mr. Taras Nizharadze (Director), Mr. Revaz Adamia (Founder Member) and Mr. Hannes Posch (Technical Director) as a part of on-site validation and document review process in the Client's office at Tbilisi, Georgia and found appropriate.

It is noteworthy that during the validation site visit the PP was yet to place Purchase Orders or sign the E&M contracts for the projects. Later on in due course of validation the project technical details was further cross checked against the contracts signed for the Electro-Mechanical equipments with Kössler GmbH dated 01/09/2011^{/28/} and found consistent. The credentials of Kössler GmbH as the equipment manufacturer and turnkey solution provider for hydropower projects was also cross checked against the official company website (<http://www.koessler.com/en>), and found justified.

This is found in line with paragraphs 58, 59 and 64 of VVM (version 1.2)^{/5/}.

The purpose of implementation of the hydro power project is generation of electricity to be supplied to the national grid system of Georgia which was cross checked against the PPA^{/9/} signed between the PP and Electricity System Commercial Operator Ltd (ESCL) dated 14/12/2007^{/9/} and found satisfactory, hence accepted.

The implementation of the proposed small scale hydro power project activity would generate electricity from the naturally available renewable energy resource in abundance and would displace the equivalent quantum of electricity from the fossil fuel dominated electricity distribution system of Georgia. The electricity generation and the electricity market in Georgia is fossil fuel dominated, which was cross checked against

the information available in the public domain published by the U.S Energy Information Administration under Table 4 (page 2/6)^{/21/} at web links: <http://www.eia.gov/electricity/state/georgia/pdf/georgia.pdf> and hereby considered accepted. Thus implementation of the project activity expectedly would result in GHG emission reduction.

The information provided in the final version of the PDD^{/2/} allows a clear indication of the project site along with its geographical coordinates. The proposed CDM project activity is located at Village: Kvesheti on the river Tetri Aragvi close to the Gudauri ski resort and Gudauri region. The powerhouse is located at the bank of Aragvi River. The geographical co-ordinates of the project activity location are with Latitude 42°26'42" North and Longitude 44°28'52" East which was cross checked against Google Map^{/11/} and found to be consistent and hence accepted. The location of the proposed project activity has been physically verified during the validation site visit and the assessment team hereby confirms the location information about the project in the PDD^{/2/} is correct. The project design and its objectives have been transparently explained in the PDD^{/2/} and are consistent with the timeline of the project history.

As per the initial webhosted PDD^{/1/} and the onward validation site visits conducted, it was confirmed that the proposed project activity is a future project activity. The implementation schedule for the project activity and the related risk for project implementation details against the selected crediting period was checked based on interviewing the Project Participants and the technical consultants for the project activity in particular Mr. Taras Nizharadze (Director, Energo-Aragvi Ltd), Mr Revaz Adamia (Founder Member, Energo-Aragvi Ltd) and Mr. Hannes Posch (Technical Director – Energo-Aragvi Ltd) during the validation site visit and found justified.

During the validation site visit of the project, it was discussed in particular that due to unavailability of financial support from the financial institutions the implementation in terms construction could not be initiated and therefore had to face financial obstacles. However the proposed phase wise implementation plan for the project in the year 2012 quarter wise has been incorporated in the revised PDD^{/2/} and is hereby apprehended to get started in January 2012 through tendering and procurement of equipments. The plan covers the project planning from procurement to start up and marked the milestone activity of project implementation as forecast in January 2012 against actual activity. The starting of the implementation of the project activity and expected completion timeline was cross checked against information published by the Ministry of Energy and Natural Resources of Georgia traceable at <http://www.menr.gov.ge/en/4758>^{/23/} under the details of current projects (heading of ARAGVI HPP) and found consistent. The information available in the public domain regarding the implementation of the project activity with emphasis on start to end of construction was found to be from 15/02/2012 to 15/02/2015. The first phase of the implementation for 8 MW capacity of the power plant is apprehended to be completed by end 2012 followed by the second phase for implementation of 1.2 MW capacity of the project activity which is likely to get commissioned by February of 2015. The proposed implementation schedule for phase I and subsequently for phase II was cross checked against the Project Design Report dated June 2010^{/13/} and further interviewed with Mr. Taras Nizharadze (Director, Energo-Aragvi Ltd.), Mr. Revaz Adamia (Founder member & Share Holder of Energo-Aragvi Ltd.) and Mr. Hannes Posch (Technical Director, Energo-Aragvi Ltd.) during the on-site validation and found consistent, hence accepted.

The actual situation and planning was checked and verified during the second validation site visit (during July 2011) at the demarcated project site and no construction work for the stage wise implementation of the proposed project were observed. Since it is a hydro power project activity keeping in mind of the long gestation period the issue of the risk of delay in project implementation was discussed with the Project Participant and the technical consultants, the same has now been updated based on the current situation and status of implementation as was also cross checked against the information published by the Ministry of Georgia^{/22/ /23/} details discussed above in this report.

The relevant permission for land plot for construction in order to build access way dated 27/01/2012 issued by Chairman of Kazbegi Municipality Administration^{/24/}, Mr. G. Malania, permission to set up the hydro power project issued by Kazbegi Municipality Administration dated 17/02/2012^{/19/} to the PP, Power Purchase Agreement dated 14/12/2007^{/9/} signed between Electricity System Commercial Operator Ltd and the PP were checked during the validation site visit and found consistent towards ownership, implementation and operation of the project activity at the specified project locations. Hence considered accepted.

The PP was interviewed during the site visit to obtain the relevant information on the initial extensive training and maintenance efforts taken by the PP (if any). The PP has clarified that the PP had entered into a contract agreement with Werner Johannides dated 18/03/2009^{18/} towards providing technical assistance for the project. This factual information was validated against the copy of the contract signed with Werner Johannides^{18/} obtained from the PP which seems reasonable and found consistent hence accepted.

The project funding for the current activity has not involved any ODA utilization. This was discussed with the PP during the validation site visit. The entire project funding was proposed to have been through a debt equity model but could not achieve financial closure towards project implementation. The same was checked against the loan rejection letter issued by JSC Basisbank, Georgia dated 04/10/2006^{14/} and thus considered accepted. A Declaration dated 22/08/2012^{10/} towards no ODA utilization or public funding involved for the proposed hydro power project activity was provided by the project Participant which was considered acceptable.

According to Paragraph 2 of Appendix C of the Simplified Modalities and Procedures for Small Scale CDM project activities, the project is not a de-bundled component of a large scale project activity. This has been checked according to de-bundling criteria during the site visit and confirmed that project activity is not a de-bundled component of large scale project activity. As per the PDD^{2/}, the project is an independent project and not a de-bundled component of a larger project activity as there is no registered small scale CDM project activity or a request for registration by the same Project Participant in the same project category and technology/measure or one that has been registered in the previous two years; whose project boundary is within 1 kilometre of the project boundary of the proposed small-scale activity at the closest point as checked from the UNFCCC website (Project Search Interface) and as per the discussions held during the validation site visit. This was checked and validated during the validation site visit as well and was found to be correct. This is also found to be in line with EB-54, Annex 13 i.e. Guidelines on Assessment of De-bundling for SSC Project Activities, version 3^{33/}.

Thus in accordance with para 61 and 135-137 of VVM 1.2^{5/} the applicability of the methodology has been validated.

Discussion of CARs/CLs:

Initial desk review of the web hosted version of the PDD^{1/} revealed that footer with the name of the project activity was added. **CAR#02** was therefore raised to seek clarification that why footer was added in the PDD^{1/}. In response, the PP had revised the PDD^{2/} and removed the footer. The validation assessment team has checked the revised version of the PDD^{2/} with the recently available PDD template, version 3 dated 22/12/2006^{34/} and found correct. Hence accepted and **CAR#02** was closed out.

In section A.1 of the webhosted PDD, under the title of location how version and date is mentioned and why revision history is included but kept blank. The webhosted version of the PDD^{1/} reported version 03 instead of version 01. PP was requested to clarify the same. **CL#04** was raised in this regard.

In response, the PP justified that the initial versions, version 1 and version 2 were drafted during proposal stage and hence were not considered during the webhosting of the PDD. The subsequent revisions led to version 3 which was used for the PDD webhosting. The same was checked and found consistent with the recently available PDD template; version 3 dated 22/12/2006^{34/}, hence accepted. The revision and date of the revised PDD, version 11 dated 03/12/2012 has been correctly filled up. The same is in line with the requirements of VVM 1.2, para 56 and as per CDM-SSC-PDD, version 5 dated 14 September, 2007 and hence accepted. **CL#04** was therefore closed out satisfactorily.

The description provided towards the proposed CDM project activity as included in the PDD^{1/} did not sufficiently cover all relevant elements accurately and was not found to be transparently and clearly reported. The information provided towards total installed capacity for the proposed project activity also was not consistent in the PDD^{1/}. Objective information towards capacity and phase wise installation for the current project activity was not clear. Thus PP was requested to include proper information regarding the quantum of

power expectedly to be generated by the project activity and further to be exported to the relevant grid. **CAR #05** was raised in this regard.

In response, the PP had revised the PDD^{/2/} and included all the relevant details towards the capacity of the project with phase wise installation plan. The PP had included in the revised PDD^{/2/}, the quantum of power expected to be generated by the project activity and further to be exported to the relevant grid. The same has been checked and found consistent with the information categorically provided with respect to Stage I & Stage II in the Project design report dated June 2010^{/13/} and hence accepted. Thus, **CAR#05** was closed out.

The information with regard to the project participant was found to be inconsistently reported in the initial web hosted version of the PDD^{/1/}. The Annex 1 of the PDD^{/1/} was also not complete and was not consistent with information provided under section A.3 of the PDD^{/1/}. **CAR#06** was raised to obtain proper information on the project participants for this proposed project activity.

In response, the PP had provided the revised PDD^{/2/} with the updating made in the relevant sections of the revised PDD^{/2/} consistently. The same was checked and found to have incorporated information on the project participants consistently under section A.3 and in further section in particular Annex 1 of the revised version of the PDD^{/2/} dated 20/07/2012. As this was in conformance with the Small Scale Project Design Document Form (CDM-SSC-PDD) version 3^{/34/} it was accepted by the assessment team. Thus **CAR#06** was closed out.

The initial desk review of the web hosted version of the PDD^{/1/} revealed inconsistencies with regard to the type of the turbines to be installed. In the description under section A.4 of the PDD^{/1/} in some places it was mentioned that scheme is implemented in two stages and in some places as three stages. It was also mentioned that Francis Turbines will be used in Stage I and Pelton Turbines used in Stage II and Stage III but in the table under technical description the turbine type is reported as Pelton in both stages. Hence **CAR#07** was raised in the said context to obtain proper justification and substantiation of the issue as to the number of stages and particulars regarding the type of turbine installations in the different phase of implementation. In response the PP provided revised version of the PDD^{/2/} including proper and correct information with regard to the two stages of installation and that the information was wrongly reported as a typographical error. Both the turbines to be installed in stage I and the one in the stage II would be Pelton turbines for the project in line with the information mentioned in the Gudauri SHPP Project design report dated June 2010^{/13/} was reported consistently. Hence the justification was accepted leading to a satisfactory closure of **CAR#07**. The PDD^{/2/} mentioned that the project is not a de bundled component of large scale project activity.

CAR#10 was raised to have proper evidence to support the claim. In response the PP informed that Gudauri is a small hydropower scheme and there is no large scale hydropower scheme planned in the region. The same was cross checked during the onsite validation also and it was confirmed that the proposed small-scale project activity shall not be deemed to be a de bundled component of a large project activity as there is no registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

- With the same project participants;
- In the same project category and technology/measure; and
- Registered within the previous 2 years; and
- Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point.

This was cross checked against the UNFCCC web site and found correct. Moreover information on Georgian State investment programs was also cross checked from the official website of Ministry of Energy and Natural Resources of Georgia (<http://www.menr.gov.ge/en/4758>)^{/23/} and found correct. Thus **CAR#10** was closed out.

As per web hosted version of the PDD^{/1/} there was no public funding involved in the project activity. **CAR#09** was raised to obtain proper documentary evidence to substantiate the claim. In response to the CAR raised

the PP has submitted the declaration signed by Energo-Aragvi Ltd. dated 22/08/2012^{/10/} that there would not be any public funding for the proposed project activity. The same was accepted and the **CAR#09** was closed out.

Opinion

The validation team is of the opinion that the description of the proposed CDM project activity mentioned in the revised PDD^{/2/} provides a clear understanding of the precise nature of the project activity and the technical aspects of its implementation. Thus, the validation team confirms that the project description in the PDD^{/2/} is accurate and complete as per the requirements of paragraphs 58 to 64 of the VVM version 1.2^{/5/}.

4.4. Eligibility as a Small Scale Project

The proposed CDM project activity is a renewable energy project with an installed capacity of 9.2 MW in a stage wise manner (Stage I – 8.0 MW & Stage II – 1.2 MW cumulated to 9.2 MW capacity) that intended to supply the generated power to the National grid of Georgia. The proposed CDM project activity is a small hydro power project set up of three Pelton turbines (2*4 MW and 1*1.2 MW) of horizontal shaft in a stage wise manner. According to the final version of PDD^{/2/}, 1st stage consists of implementation of two Pelton turbines each of 4.0MW capacity and cumulatively installed capacity will be 8.0 MW and the 2nd stage consists of implementation of one Pelton turbine of 1.2 MW installed capacity. Thus the total capacity of the proposed CDM project activity will be 9.2 MW and the renewable energy generated by the project activity will be thereafter evacuated to the National Grid of Georgia.

In view of the fact that the project's capacity is less than 15MW, the project is eligible as type I small scale CDM project activity and can apply a simplified baseline methodology. The project applies the baseline methodology stipulated for category I.D of the "simplified modalities and procedure for small scale CDM project activity". Thus it can be concluded that the proposed project activity falls under the small scale project activity category and the project design description justifies the applicability criteria of approved small scale methodology AMS-I.D, version 17^{/6/}. The same was validated in accordance with the requirement of para 136 (b) of VVM 1.2^{/5/}.

Opinion

The validation team is of the opinion that the project activity under concern meets the eligibility criteria of small scale CDM project. The PDD^{/2/} provides a clear understanding of the precise nature of the project activity and the capacity wise implementation stage. Thus, the validation team confirms that the project description in the PDD^{/2/} is accurate and complete as per the requirements of paragraphs 135 to 137 of the VVM version 1.2^{/5/}.

4.4 Applicability of selected methodology to the project activity

The project falls under type (I): Renewable Energy Projects, as the project activity involves generation of electricity using hydro energy which is a renewable source, and category D, Grid connected Renewable Electricity Generation as the generated electricity by the project will be exported to the National grid of Georgia. Hence, according to the simplified modalities and procedures for small-scale CDM project activities the type and category of the project activity has been correctly identified in the PDD^{/2/}. The proposed CDM project activity is a renewable energy project with an installed capacity of 9.2MW that supplies the generated power to the National grid of Georgia. The proposed CDM project activity is therefore a small hydro power project. According to the final version of the PDD^{/2/}, stage I involves implementation of two turbines of 4.0MW capacity each cumulated to 8.0 MW generation capacity followed by further installation of a turbine with rated capacity of 1.2 MW in second phase. The installed capacity of the project thus cumulates to 9.2 MW.

Therefore the Methodology: AMS I.D, version 17^{/6/}, "Grid connected renewable electricity generation" has been applied to this project which is found appropriate. The PDD under the section B.1 refers to the approved small scale methodology AMS I.D, version 17^{/6/}. The following are the applicability criteria for the project to be selected under this methodology:

Table 1: Applicability Criteria

Criteria No.	Criteria as per Methodology AMS I. D Version 17	Project Eligibility	Means of Validation
1	<p><i>This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:</i></p> <p>(a) <i>Supplying electricity to a national or a regional grid; or</i></p> <p>(b) <i>Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.</i></p>	<p>The project activity is a grid connected hydro power plant and therefore is a renewable energy project. The project activity supplies electricity to the national grid of Georgia.</p>	<p>This fact was confirmed during the site visit along with document review of Gudauri SHPP Project Design Report dated June 2010^{13/} and found consistent. Hence it is applicable under the option (a) of this category.</p> <p>This was further cross-checked with the PPA^{9/} signed between the PP and Electricity System Commercial Operator Ltd. dated 14/12/2007.</p> <p>Documents validated were found consistent in line with the description of the project as reported in the PDD^{2/} and hence accepted.</p> <p>Thus it has been concluded that this applicability criteria of the applied methodology is met.</p>
2	<p><i>Illustration of respective situations under the methodology (i.e. AMS-I.D) applies as per the Table 2.</i></p> <p>1. <i>Project supplies electricity to a national/regional grid.</i></p> <p>2. <i>Project supplies electricity to an identified consumer facility via national/regional grid (through a contractual arrangement such as wheeling).</i></p>	<p>In the table 2 of AMS-I.D. version 17, the illustration of respective situations clearly portray that for a project supplying electricity to a national/regional grid, the methodology AMS-I.D. is to be used.</p>	<p>The grid connectivity of the project and the fact on evacuation of generated electricity to the grid was verified from the PPA signed with the respective utilities i.e.; Electricity System Commercial Operator Ltd. Dated 14/12/2007^{9/}.</p> <p>Therefore, the project activity is eligible for the methodology AMS.ID version 17^{6/} as per point 1 of table 2, page 15 of the methodology AMS.ID version 17^{6/}. Documents were found consistent in line with the description of the project as reported in the PDD^{2/} and hence accepted.</p> <p>Thus it has been concluded that this applicability criteria</p>

Criteria No.	Criteria as per Methodology AMS I. D Version 17	Project Eligibility	Means of Validation
			of the applied methodology is met.
3	<i>This methodology is applicable to project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) Involve a capacity addition; (c) Involve a retrofit of (an) existing plant(s); or (d) Involve a replacement of (an) existing plant(s).</i>	The proposed project activity involves installation of a Greenfield hydroelectric power plant utilizing hydro energy to generate electricity and supply to the regional grid of Georgia.	<p>The Greenfield status of the proposed project activity has been verified during validation site visit and found consistent.</p> <p>The relevant clearances, namely permission for construction dated 17/02/2012^{/19/} issued by Kazbegi Municipality Administration and permission for land issued by the Chairman of Kazbegi Municipality Administration dated 27/01/2012^{/24/} issued for the project activity and Copy of Memorandum of understanding between the Government of Georgia and Energo-Aragvi Ltd, signed on 04/09/2007^{/45/}, as verified confirms that the project is Greenfield project activity. It is neither a capacity addition nor a retrofit or replacement as defined in the applied methodology.</p> <p>Thus it has been concluded that this applicability criteria of the applied methodology is met.</p>
4	<p><i>Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:</i></p> <ul style="list-style-type: none"> <i>The project activity is implemented in an existing reservoir with no change in the volume of reservoir;</i> <i>The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project</i> 	The proposed project activity is a Greenfield run-of the river based hydro power project activity.	<p>The proposed project activity is a run-of the river small scale hydro power project, same has been cross checked from the Gudauri SHPP Project Design Report dated June 2010^{/13/} and also verified during validation site visit.</p> <p>Hence, this criterion is applicable.</p>

Criteria No.	Criteria as per Methodology AMS I. D Version 17	Project Eligibility	Means of Validation
	<p>activity, as per definitions given in the project emissions section, is greater than 4 W/m²;</p> <ul style="list-style-type: none"> The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m². 		
5	<p>If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.</p>	<p>The proposed project activity is a hydro power project that comprises of renewable component only. The installed capacity of the project is 9.2 MW_e, which is within 15 MW_e, limit set for small scale project activity.</p>	<p>The proposed project activity involves installation of 9.2 MW Greenfield run-of the river small scale hydro power generation activity and does not include any non-renewable component. This fact has been verified during the site visit and the same was further cross-checked from the Project Design Report^{/13/} and PPA^{/9/} signed with the respective utilities i.e.; Electricity System Commercial Operator Ltd. Dated 14/12/2007.</p> <p>Hence, this criterion is applicable.</p>
6	<p>Combined heat and power (co-generation) systems are not eligible under this category</p>	<p>The proposed project is not a combined heat and power (co-generation) system.</p>	<p>The project activity is a hydro power project and not a combined heat and power (co-generation) systems and hence this criterion is not applicable. This was checked with the Project design report^{/13/} and during the site visit and found to be consistent hence accepted.</p> <p>Thus it has been concluded that this applicability criteria of the applied methodology is not applicable for the current project activity.</p>

Criteria No.	Criteria as per Methodology AMS I. D Version 17	Project Eligibility	Means of Validation
7	<i>In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.</i>	The project activity is a green field project thus does not involve the addition of renewable energy generation units at an existing renewable power generation facility.	<p>The project activity is a Greenfield project and does not involve the addition of renewable energy generation at an existing renewable power generation facility.</p> <p>This was checked with the contract signed for the project civil construction between the PP and Peri Ltd^{/17/} and found to be consistent hence accepted.</p> <p>Thus it has been concluded that this applicability criteria of the applied methodology is not applicable for the current project activity.</p>
8	<i>In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.</i>	The project activity does not involve retrofit or replacement.	<p>The project activity does not involve retrofit or replacement.</p> <p>This was checked with the relevant permissions namely permission for construction dated 17/02/2012^{/19/} issued by Kazbegi Municipality Administration and permission for land issued by the Chairman of Kazbegi Municipality Administration dated 27/01/2012^{/24/} and found to be consistent hence accepted.</p> <p>Thus it has been concluded that this applicability criteria of the applied methodology is not applicable for the current project activity.</p>

Based on the above discussion, the validation team confirms that the proposed CDM project activity meets all the applicability conditions stipulated in the selected methodology AMS-I.D, version 17^{/6/} and herewith considered acceptable.

The project qualifies as a small scale CDM project activity and hence it has appropriately adopted the approved small scale methodology AMS I.D., Version 17^{/6/}. The project involves hydro energy based renewable energy generation activity which generates electricity from renewable natural source and feed the generated electricity to the national grid of Georgia. The installed capacity of the plant is 9.2 MW which is well below the threshold limit of 15 MW installed capacity, being the upper limit for small scale project activity as per Modalities and Procedures for the SSC CDM Project activities.

The indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories does not require the emission source and gases related to the baseline scenario, project scenario and leakage to be included. Thus in accordance with para 70 of VVM 1.2^{/5/} the applicability of the methodology has been validated.

Opinion:

The applicability criteria are described in the PDD as per the requirement of the Methodology. The Assessment team has reviewed the applicability criteria and justification which were found correct and in line with the Methodology AMS ID version 17. Thus in accordance with para 70 of VVM 1.2^{/5/} the applicability of the methodology has been validated.

The GHG emission occurring within the project boundary is CO₂ and no other gases (contributing more than 1% of overall expected average) are involved during the project activity. The same has been verified during the course of validation. This has been validated in accordance with paragraph 76 of VVM 1.2.

4.5 Project Boundary

The proposed CDM project activity involves implementation of a Greenfield small hydro power plant of 9.2 MW capacity at Gudauri region, Dusheti District, Georgia. The project activity is proposed to be implemented in two subsequent phases (8 MW in Phase I and 1.2 MW in Phase II). The generated electricity from the project activity will be evacuated to the national grid system of Georgia. The accuracy of the project description was checked and verified during the validation site visit with reference to objective documentary evidences. Following relevant documents were cross-checked in order to confirm project boundary:

- Gudauri SHPP Project Design Report dated June 2010^{/13/};
- Power Purchase Agreement dated 17/12/2007^{/9/}

The spatial boundaries and system boundaries of the project activity were also checked during the validation site and found consistent. Thus the delineation in the final version of the PDD^{/2/} of the project boundary meets the requirement of the selected baseline methodology.

The project boundary encompasses the physical, geographical site of the renewable energy generation. This includes the hydro power plant installed as a part of the project activity, power evacuation to the Georgian national grid system. The same was checked and verified during the validation site visit and was found to be consistent. This was validated in accordance with para 78 of VVM 1.2^{/5/}.

The project system boundary includes the power plant from the diversion weir to transmission system till the evacuation point of electricity to the National Grid of Georgia. The proposed project activity consists of two 4.0 MW Pelton turbines and one 1.2 MW Pelton turbine and generators respectively. The spatial boundary of the project activity also includes the national grid of Georgia.

Emission Details	GHGs involved	Description of the emission sources
Baseline emission	CO ₂	Emissions equivalent to the amount of net electricity supplied by the project activity that would otherwise be generated by power plants connected to the National grid of Georgia.
Project emission	CO ₂	Not applicable
Leakage	Not applicable	Not applicable

The selected sources and gases as indicated above are justified for the project activity, with reference to the applied methodology. The selected source and gases are justified for the project activity. It was verified through physical inspection of project activity site.

The project activity being a green field renewable hydro energy project does not result in any GHG emissions occurring within the project activity boundary created as a result of the implementation of the proposed project activity.

The schematic representation of the project boundary included under section B.3 of the PDD correctly describes the boundary of the project activity.

The PP has included CO₂ in the calculation of the baseline. In the baseline scenario, the electricity would have been sourced from Georgian National grid which in turn is connected to fossil fuel fired power plants which emit CO₂ and hence the inclusion of CO₂ in calculating the baseline is appropriate.

The exclusion of CH₄ and N₂O in the baseline scenario is appropriate, as there are no associated emissions of the same in a small scale hydro power plant with no reservoir. The project activity involves the generation of electricity using hydro energy. Hence, there are no project emissions associated with this project activity. Hence, the exclusion of CO₂, CH₄ and N₂O in the project scenario is considered appropriate.

Opinion

The GHG emission reduction occurring within the project boundary is CO₂ and no other gases (contributing more than 1% of overall expected average) are involved during the project activity. The same has been verified during the course of validation. This has been validated in accordance with para 76-77 of VVM 1.2^{/5/}

The validation team is of the opinion that the project boundary has been correctly identified in the PDD^{/2/} inline with paragraph 79 of VVM version 1.2^{/5/}.

4.6 Baseline Selection and Additionality

The approved small scale methodology: AMS I.D, version 17^{/6/} "Grid connected renewable electricity generation" has been applied to the proposed project activity considered. The proposed project activity is small scale hydro power project and the additionality of the project activity is correctly explained on the basis of barrier analysis (Other Barrier – Financial Resources) as per para 1 of "Guidelines on the Demonstration of Additionality for Small Scale project activities", EB 68 Annex27^{/26/}, the PP has adopted the *Other barrier* option to demonstrate additionality for the proposed SSC project activity.

The demonstration of additionality has been described in detail under section 4.6.1 and 4.6.4 below.

The proposed CDM project activity will generate electricity from renewable power source utilizing the hydro power potential through implementation of the proposed project activity and would be evacuated to the national grid system of Georgia. In absence of the project activity, the prevailing conditions would prevail i.e. electricity would have been generated by the Georgian national grid which is mainly dominated by the fossil fuel based power plants. The same was cross checked against information on fossil fuel energy consumption (% of total) for Georgia available in the public domain of World Bank^{/30/}: <http://data.worldbank.org/indicator/EG.USE.COMM.FO.ZS>. The implementation of the proposed hydro power project activity would therefore displace the equivalent quantum of power from the national grid of Georgia. Thus, the baseline selected for the project activity is the continuation of generation of electricity at current level of emissions from the national grid system of Georgia.

The baseline has been validated and is found in accordance with applied methodology AMS I.D version 17^{/6/} Para 10 as appended hereunder and was found satisfactory.

Para 10 of the methodology AMS I.D. version 17^{/6/} states that;

“The baseline scenario is that the 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 into the grid.”

The PP identified all credible and realistic alternatives to the project activity as follows:

- Alternative 1: Continuation of existing scenario: No project activity and electricity generated by the present fossil fuel fired grid connected thermal power plants.
- Alternative 2: The proposed project activity not undertaken as a CDM project activity

The identified alternatives as mentioned above considered by the PP, which are also presented in the final version of the PDD^{2/}, the alternatives also include the project activity undertaken without being registered as CDM project also. The alternative 1 presented also comply with the local and relevant national and/or sectoral policies, macro-economic trends and political aspirations, and also the project comply with environmental legislation in the host country, Georgia. The list of alternatives is therefore considered complete.

Alternative 1 has been observed as the common scenario for the electrical power generation sector of Georgian National Grid, the same was cross checked against the information made publicly available at the U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report" (<http://www.eia.gov/electricity/state/georgia/pdf/georgia.pdf>)^{21/} and found to have been correctly identified in the PDD. Thus this option has been considered further for arriving at the baseline scenario.

Alternative 2 has not been considered as the viable option owing to the barrier related to financial resource towards implementation of the proposed project activity (as discussed in the following part of this report) without considering CDM revenue.

Identification of the most plausible baseline alternative via the alternatives-elimination-route as well as the appropriateness of such alternative is being assessed against proper evidences which was checked and found correct. Based on the baseline options and combinations directed in the applied methodology the following is arrived as the most suitable and plausible baseline scenario as appended hereunder:

Alternative 1 "Continuation of existing scenario: no project activity and electricity generated by the present fossil fuel fired grid connected thermal power plants", which is deemed to be most plausible for the proposed CDM project activity.

The baseline alternative identified by PP is thus in line with the applied methodology was found plausible and appropriately determined and derived.

The emission reductions achieved as a result of implementation of the proposed project activity will be a direct function of the net electricity supplied to the national grid system of Georgia.

The baseline emissions have been calculated as per para 11 of AMS I.D, version 17^{6/}:

“The baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor.”

$$BE_y = EG_{BL,y} * EF_{CO2,grid,y}$$

Where,

- BE_y : Baseline Emissions in year y (t CO₂)
 $EG_{BL,y}$: Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
 $EF_{CO2,grid,y}$: CO2 emission factor of the grid in year y (t CO₂/MWh)

The emission factor has been calculated as per para 12(a) of AMS I.D. version 17^{6/}:

The emission factor can be calculated in a transparent and conservative manner as follows:

- (a) *A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the “Tool to calculate the Emission Factor for an electricity system”;*

The project will be physically connected to the Georgian national grid system and the selected baseline is therefore continuation of generation of electricity at current level of emissions from the Georgian national grid that is the net power supplied to the Georgian national grid in kWh multiplied by the emission factor of the relevant grid. The emission co-efficient has been calculated in a transparent and conservative manner following a combined margin (CM) approach, consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the ‘Tool to calculate the emission factor for an electricity system’, version 2.2.1^{/27/}. The power sector data for the operating and build margin to calculate and arrive at the combined margin emission factor has been adopted from the “Baseline Emission Factor for the Electricity System of Georgia”, version 01, dated April 2008 published by the Ministry of Environment Protection and Natural Resources of Georgia, as recommended for CDM projects (Web link: http://moe.gov.ge/files/Klimatis%20Cvileba/Sufta%20Ganvitarebis%20Mekanizmi/SMG%20Erovnuli%20Ufle bamosili%20Organo/Baseline_EF_2004-2006.pdf)^{/40/}. This is to confirm that the power sector data considered for grid emission factor computation was the most recent data available to the PP at the start of the validation process i.e. webhosting of the PDD for global stakeholder consultation process during July 2008, which has been correctly adopted by the PP for the project and hence accepted.

Opinion:

Based on the requirements of the paragraph 81-88 of the VVM version 1.2^{/5/}, the assessment team confirm that:

- (a) All the assumptions and data used by the PP are listed in the PDD^{/2/}, including their references and sources
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD^{/2/}.
- (c) Assumptions and data used in the identification of baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable.
- (d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD^{/2/}.

The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in absence of the proposed CDM project activity.

4.6.1 Additionality

The proposed project activity is small scale project and the additionality of the project activity is correctly demonstrated on the basis of barrier analysis as per “Guidelines on the Demonstration of Additionality for Small Scale project activities” Para 1, EB 68 Annex 27 i.e.

“Project participants shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:

- (a) *Investment barrier: a financially more viable alternative to the project activity would have led to higher emissions;*
- (b) *Technological barrier: a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions;*
- (c) *Barrier due to prevailing practice: prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions;*

(d) Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new technologies, emissions would have been higher."

In accordance with the stated requirement project participant have demonstrated the additionality by justifying barrier related to Financial Resources under "Other Barrier" option. In the further section i.e. section 4.6.4 of this validation report a detailed analysis and discussion of Other Barrier in particular non availability of financial resources has been described.

Discussion of CARs/CLs:

The PP was requested to clarify on the applicability of the tool "Tool for the demonstration and assessment of additionality" for the proposed small scale project activity. Also, the latest version of the Additionality Tool was not used to demonstrate the additionality of the project activity and the justification on baseline identification as per the governing criteria of "Tool for the demonstration and assessment of additionality", was not found justified. Thus, **CAR#11** was raised in this regard.

In response, subsequently the PP had revised the PDD by adopting additionality demonstration guideline for small scale project activity as per the latest guidelines of EB68, Annex27^{26/} based on Other Barrier (Financial Resources); the investment analysis approach along with the barrier description as mentioned in the webhosted PDD was withdrawn by the PP. As per the guidance, the PP had demonstrated the additionality of the project using option 1(d): Other Barriers. The PP had discussed the additionality based on financial resources this was checked against the bank rejection letter issued to the PP by Basisbank dated 04/10/2006^{14/} and further substantiated against evidence of the Lol issued by VA TECH Finance dated 12/03/2008^{16/}. However further clarification was sought on the issues as follows:

1. Source of project cost stated as 8.2 million USD as mentioned in the PDD under section B.5 against the objective evidence. Further clarification is requested as to why it has considered "very high capital investment".
2. The details of the project implementation activity under section B.5 of the PDD not reported adequately and whether there was a re-initiation of implementation of the project activity based on earlier investment decision and subsequently ceased due to non-availability of the project fund. Justification on the same in line with Para 67 of EB 41 needs to be provided.
3. Whether the financial closure for the proposed project activity has been achieved and based on which fund the PP has initiated the implementation of the proposed project activity.
4. The timeline line for the several round of discussions with VA-Tech Finance, as stated under section B.5 of the PDD to be substantiated against objective evidence.
5. The timeline on CDM consideration and signing of the DOE for the validation service not reported transparently under section B.5 of the PDD.

The revised PDD, version 11 dated 03/12/2012 as provided by the PP in response, was checked and found to contain the information as follows;

1. The approximate project cost was further stated as 11 million USD in the revised PDD, version 11 dated 03/12/2012, which was found based on the objective evidence as available in the website of Ministry of Energy and Natural Resources of Georgia (<http://www.menr.gov.ge/en/4758>) under heading of Aragvi HPP. The same was checked and found correct and hence is accepted.
2. The revised PDD, version 11 dated 03/12/2012 was found to include transparently the implementation plan under section B.5 of the PDD. The PDD transparently states that there was no re-initiation in the implementation of the project activity. The PP had proceeded with the 25% of the project cost which is the equity component of the total project cost to start with the implementation plan. As the project finance is dependent on the registration of the project under CDM and sale of CERs through signing of ERPA to KPC, it was necessary for the PP to move ahead with the implementation plan with the equity component of the total capital. The same was checked against the VA-Tech finance GmbH letter issued to PP ref no: PA dated 12/03/2012, where it has been clearly stated under preconditioned clauses that the project will be financed subjected to the CDM registration and sale of CERs and found correct. Hence, accepted.

3. The revised PDD was checked and found to include the information transparently that the project financial closure is not yet achieved. PP has started the implementation of the project with the part of the project cost (25% of the total project cost) in order to implement the project and achieve the financial closure as stated in LoI letter issued from VA-Tech Finance GmbH which was checked and found correct, hence accepted.
4. The information on detail timeline towards CDM consideration and DOE signing was included transparently in the revised PDD, version 11 dated 03/12/2012 against the objective evidence of the original copy of board approval letter dated 11/10/2006 and signed DOE contract copy, hence was accepted.

This is further discussed under section 4.7.5 of the report. The same was thus accepted and hence **CAR#11** was closed out.

The initial desk review of the web hosted version of the PDD revealed that the additionality was demonstrated further to the access to finance barriers referring to the poor returns from the proposed project activity in terms of low Internal Rate of return. Hence **CAR#12** was raised to obtain proper substantiation towards consideration of facts and figures (basic assumptions) to arrive at the low IRR as specified.

In due course of validation it was identified that the project encountered acute crisis of project funding and had to consider CDM revenues as was instructed by the financial institutions as a mandatory requirement to avail project funding for the said project activity implementation. Thereafter the PDD was revised and additionality was demonstrated referring Access to finance barriers as per the then prevalent Attachment A to Appendix B and further current guideline available in EB68 Annex 27 "Guidelines on the demonstration of additionality of Small Scale project activities"^{/26/}. Thus the PP withdrew the poor financial returns from the project activity and demonstrated the additionality adhering to the current guidelines. Please refer the detail discussion and closure of the **CAR#12** under section 4.6.4 of this report below.

4.6.2 Prior Consideration of the Clean Development Mechanism

The project start date mentioned under section C.1.1 of the final version of the PDD^{/2/} has been stated as 01/09/2011 as the date of signing of E&M contract between the PP and Kössler GmbH^{/28/} for the proposed project activity. The copy of the said E&M contract agreement was checked for the date and was found to have been consistently mentioned in the PDD^{/2/}. The credentials of Kössler GmbH as the equipment manufacturer and turnkey solution provider for hydropower projects of Internationally acclaimed repute was also cross checked against the official company website (<http://www.koessler.com/en>), and found justified.

The date 01/09/2011 as the date of signing of the E&M contract^{/28/} towards project implementation is found to be the earliest date of real action taken by the project participant. Hence 01/09/2011 is accepted as the start date of the proposed project activity, as per the definition of the same provided in the CDM Glossary of CDM Terms version 06 dated 02 March 2012, EB 66 Annex 63^{/29/} which defines the start date of a CDM project activity as: *"the earliest date at which either the implementation or construction or real action of a CDM project activity begins"*.

Further in accordance to the EB 41 paragraph 67 it was clarified that *"the start date shall be considered to be the date on which the project participant has committed to expenditures related to the implementation or related to the construction of the project activity"*, the reported project start date as the date of signing the E&M contract^{/28/} for the proposed project activity has been found to be in line with the EB 41 Meeting Report, Para 67 being the earliest date at which the implementation of the project activity begun and was the date on which the project participant had committed to expenditures related to the implementation of the project activity. It was thus accepted. The mode of validation was thus in accordance to paragraph 99 of VVM 1.2^{/5/}.

The start date of the proposed project activity being 01/09/2011 is after 02/08/2008, thus as per EB 62 Annex 13: Guidelines on the demonstration and assessment of the prior consideration of the CDM^{/36/} require (paragraph 2) that *"the project participant must inform a Host Party designated national authority (DNA) and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. Such notification must be made within six months of the project activity start date and shall contain the precise geographical location and a brief description of the proposed project activity, using the*

standardized form F-CDM-Prior consideration. Such notification is not necessary if a project design document (PDD) has been published for global stakeholder consultation or a new methodology proposed to the Executive Board for the specific project before the project activity start date."

The proposed CDM project activity entered into the CDM validation cycle much before the project start date and the PDD was web hosted in the UNFCCC project web page for Global stakeholder's comments on 29/07/2008. Thus in line with the above guidelines to intimate the UNFCCC Secretariat in writing to notify the intent of seeking CDM status is not applicable for the proposed project activity as it was already published for global stakeholder's consultation, which justifies the prior and serious CDM consideration for the proposed project activity. The particulars of the web hosting of the proposed CDM project activity was cross checked against the UNFCCC project web page and found correct.

The CDM project chronology and supporting documentary evidence has been reviewed and prior CDM consideration for the proposed project activity has been demonstrated in the following milestone activities as per the guidelines of EB 62 Annex 13, version 4^{/36/}. The start date of the proposed CDM project activity has been validated as 01/09/2011^{/28/} which is after the date of 02/08/2008 and hence it falls under the category of "new project" activity as per EB62 Annex13 and as per para 100 of VVM version 1.2^{/5/}.

The start date of the project activity as included under section C1.1. of the PDD^{/2/} was stated as 01/09/2011 and the GSP of the proposed CDM project was done on 29/07/2008 for global stakeholder comments. The same has been checked through the web link: <http://cdm.unfccc.int/Projects/Validation/DB/21RPBBC6KVMB40C0F50O6545ZJ18WT/view.html>.

Hence in lieu with EB62, Annex13^{/36/}, para 2, prior intimation to the UNFCCC and Host Country DNA of their intention to seek CDM status was not found applicable for the proposed project activity. The prior consideration of CDM project is justified as the PDD^{/2/} had been webhosted before the start date of the project activity which is found to be consistent with the requirements of EB62, Annex13^{/36/}, para 2 and thus considered accepted. However a brief chronology of events towards securing CDM registration for the proposed project activity, as validated is appended in the table hereunder for transparency and representation of facts:

Table: CDM Consideration & related Milestone activities

CDM Project milestone activities	Timeline	Documentary evidences reviewed
CDM Consideration Particulars		
Decision in the Board of Founder Members of Energo-Aragvi Ltd. to consider CDM revenues for the proposed project implementation.	11/10/2006	Minutes of Share Holder's Meeting of Energo-Aragvi Ltd. considering CDM towards project implementation decision. ^{/41/} The board resolution in the form of the Minutes of the Shareholders meeting was checked in original at site visit and also the context of the Board resolution on project implementation decision considering CDM revenue has been also cross checked through interviewing Mr. Taras Nizharadze, Director- Energo-Aragvi Ltd., (Tel: +99-5599563506) and found to be consistent, hence accepted.
Appointment of DOE for validation services for the proposed CDM project activity.	17/07/2008	Validation service Agreement executed between Clean Energy Solutions and SGS ^{/37/} on 17/07/2008.

CDM Project milestone activities	Timeline	Documentary evidences reviewed
Signing of Emission Reduction Purchase Agreement.	23/07/2008	<p>The copy of the ERPA^{42/} signed between KomunalKredit Public Consulting GmbH and Energo-Aragvi Ltd. for the sale of the potential CERs from the proposed project activity has been checked and found consistent.</p> <p>Furthermore, the credentials of KomunalKredit Public Consulting GmbH as purchaser of Emission Reduction Units was also cross checked against the official company website (http://www.publicconsulting.at/kpc/en/home/), and found justified.</p>
Webhosting of the PDD for Global Stakeholder Consultation process. (Before the start date of the proposed project activity)	29/07/2008 until 27/08/2008	<p>The PDD was webhosted at UNFCCC website for Global Stakeholder Consultation process on 29/07/2008 and same has been cross checked with the webhosting details at UNFCCC-CDM website (http://cdm.unfccc.int/Projects/Validation/DB/21RPBBC6KVMB40C0F5006545ZJ18WT/view.html) and found correct.</p>
Letter of Approval (LoA)	18/11/2009	<p>Original scan copy of the Letter of Approval dated 18/11/2009 ref no:05-06-06/4164 issued by the DNA of Georgia, Minister of Environment Protection and Natural Resources of Georgia^{3/} has been checked and found consistent.</p>
Contract awarded for E&M equipment (Start date of the Project Activity).	01/09/2011	<p>Original scanned copy of the E&M contract agreement dated 01/09/2011^{28/} signed with Kössler GmbH was checked and found consistent.</p>

With reference to the above mentioned chronology of the project milestone activities and the supporting documents, it has been found justified that CDM revenue was considered in the decision to implement the project activity and project participant has demonstrated continued and real actions to secure CDM status for the project in parallel with its implementation as per guidelines set in EB 62 Annex 13.

Discussion of CARs/CLs:

As per section C.1.1 of PDD^{1/}, the PP had mentioned the start date of the project activity as 01/09/2008 and the operational lifetime was as 35 years in the initial version of the webhosted PDD^{1/}. The PP was requested to provide documentary evidence for both the start date and operational lifetime. **CAR#17** was raised in this regard.

In response, the PP has provided the documentary evidence for the start date of the project activity and operational lifetime of the project. The PP has corrected the start date of the CDM project activity in the revised PDD^{2/} as 01/09/2011 as the date of signing of contract for the E&M equipments^{28/} as the first real action as commitment of expenditures towards implementation of the project activity. The same was cross-checked against the original signed E&M contract agreement with Kössler GmbH dated 01/09/2011 and found consistent and hence accepted.

The expected operational lifetime of the project activity has been revised by the PP in the revised version of the PDD as 30 years with reference to the lower limit of the recommended lifetime of hydro power plants (range of 30 to 80 years) by International Renewable Energy Agency as per the report "Renewable Energy Technologies – Cost Analysis Series" dated June 2012. The consideration on the assumption of 30 years as expected project operational lifetime has been validated based on the IRENA report on hydropower "Renewable Energy Technologies – Cost Analysis Series", dated June 2012; page 7 (traceable at: http://www.irena.org/DocumentDownloads/Publications/RE_Technologies_Cost_Analysis-HYDROPOWER.pdf) and found consistent. Furthermore, consideration of 30 years as the expected operational lifetime for the proposed 9.2 MW run-of the river hydro power project activity has been found reasonable based on the judgment of TA 1.2 (hydro) expert of the assessment team. Hence this was accepted and **CAR#17** was closed out.

Opinion:

In compliance with paragraph 100 of VVM version 1.2^{5/}, the project is classified as a "new project activity" with project start date after 02/08/2008. The starting date of the project is 01/09/2011, which is after 02 August 2008. The PDD^{1/} was published for global stakeholder consultation on the UNFCCC website on 29/07/2008, which is before the project activity start date. Therefore, in this case no notification from the PP to a host party DNA and/or the UNFCCC secretariat is necessary. This is in lieu with the requirements of EB62, Annex13^{36/}, para2. Hence, the proposed CDM project activity complies with the requirements of the latest version of the Guidance on prior consideration of CDM as per para 104 (c) of VVM 1.2. Based on the above mentioned EB guidance and the evidence provided and verified it is hereby concluded that the CDM was considered necessary in the decision to implement the project activity. This is in compliance with paragraphs, 99, 100 and 101 of VVM version 1.2^{5/} and as per EB 62 Annex 13 Para (2)^{36/}.

4.6.3. Identification of alternatives (if applicable)

The proposed project is a 9.2MW Greenfield hydro power project activity which involves stage wise implementation (Stage-I comprising of 8 MW capacity followed by Stage-II comprising of 1.2 MW capacity cumulated to generate 9.2MW power) and the generated electricity will be exported to Georgian national grid which in turn displace the electricity otherwise generated through implementation of the carbon intensive power generation facility leading to environmental degradation.

The project activity baseline is defined in the methodology itself and no further analysis of alternatives is required. As per paragraph 10 of methodology AMS-I.D. version 17, "*The baseline scenario is that the 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 into the grid.*"

Thus, baseline scenario for the project activity is electricity fed to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources. For identified baseline scenario the mandatory law and regulation in the host country was verified and found in compliance with all legislature of the Host country-Georgia, hence accepted.

The identification of the baseline scenario has been assessed as per the requirement paragraph 106 of VVM 1.2 and found justified.

Opinion:

In according to the requirements of paragraph 86 and 87(a) to (e) of VVM version 1.2^{5/}, the validation team are of the opinion that:

1. All the assumptions and data used by the project participants are listed in the PDD^{/2/}, including their references and sources.
2. All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD^{/2/}.
3. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable.
4. Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD^{/2/}.
5. The approved baseline methodology AMS-I.D version 17^{/6/} has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

4.6.3 Investment analysis (if applicable)

The proposed CDM project activity is a small scale hydro power project activity and the additionality of the same has been demonstrated through “Other Barriers” referring to EB 68 annex 27: “Guidelines on the demonstration of additionality of Small Scale project activities”^{/26/}. Please refer to the section 4.6.1 and 4.6.4 of this report for the detailed discussion on the additionality of the proposed project activity referring to other barriers as demonstrated by the Project Participant and subsequently validated by the assessment team.

4.6.4 Barrier analysis (if applicable)

In continuation to the prelude as discussed under section 4.6.1 Additionality in this report above, the PP has demonstrated the additionality referring to the current guidelines as available in EB 68 annex 27 referring to other barriers option in particular financial resources as appended hereunder;

Other Barriers (Financial Resources):

The continued efforts from the Project Participant to acquire financial assistance towards implementation of the proposed project activity and the uncertainty encountered by the PP towards arrangement of project funding (barrier related to Financial Resources) has been validated based on objective evidences as discussed below:

The Project Participant with the intent to invest for the proposed Gudaure SHHP had approached the JSC Basisbank in the year 2006 requesting sanction of debt financing. The correctness of this fact was checked against the scanned copy of the loan application letter^{/43/} from Mr. Taras Nizharadze, Energo-Aragvi Ltd. (PP) to The Head of the Corporate Loan Department of The JSC Basisbank, Mr. Nikoloz Rukhadze dated 21/09/2006 and found consistent. Furthermore, the credentials of JSC Basisbank as the financial institution was also cross checked against the official company website (<http://www.basisbank.ge/en/home/>), and found justified.

The content of the loan application letter^{/43/} was found to be clearly outline the following salient issues requesting to avail the financial resource (term loan) for implementation of the said project;

- *A loan towards 75% of the project cost at an interest rate of 9% per annum.*
- *The loan maturity period (repayment period) as 10 years.*

The Loan disapproval by the JSC Basisbank towards the said loan application letter^{/43/} of Energo-Aragvi Ltd. was cross checked against the loan disapproval letter provided by JSC Basisbank dated 04/10/2006^{/14/} addressed to Mr. Taras Nizharadze, Energo-Aragvi Ltd. on the ground as mentioned below and found consistent;

- *The interest rate as 9% towards the said loan applied for was not agreed upon.*
- *The loan term issued by JSC Basisbank was maximum for a period of 5 to 7 years.*

The hydro power projects are normally associated with long gestation period and risk of running out of the implementation schedule which in turn attributes to overall project cost escalation. Therefore for implementing the proposed hydro power project, financial assistance under such terms and conditions as specified by JSC Basisbank could not be availed by Energo-Aragvi Ltd. This aspect was checked during validation site visit through interviewing Mr. Taras Nizharadze (Director, Energo-Aragvi Ltd.) and Mr. Hannes Posch (Technical Director, Energo-Aragvi Ltd.) and found consistent. Along with the same the fact related to the uncertainly related to hydro power project implementation and involvement of medium to long gestation period was found reasonable based on the judgment of TA 1.2 (hydro) expert of the assessment team, visited the project site.

The ground reality related to the barriers to develop renewable energy projects in Georgia especially towards “high capital investment required” and “absence of attractive financing schemes” was also cross checked against the information available on the public domain document “Seminar on small hydro project development in Georgia” conducted by UNDP/GEF-KfW dated 05/05/2005 (http://www.shyca.org/spg/jp_p_ss_g.pdf; slide 4/25) and found reasonably justified.

The PP meanwhile became aware of the CDM modalities from the Ministry of Environment Protection of Georgia i.e.; the DNA of Georgia and subsequently the board members of Energo-Aragvi Ltd. (Mr. Taras Nizharadze, Mr. Vakhtang Mike Ladze, Mr. Revaz Adamia, Mr. Hannes Posch and Mr. Koba Buchukuri) had decided to implement the proposed project activity considering CDM revenue during the Shareholders Meeting conducted on 11/10/2006 at Tbilisi, Georgia.

This fact was cross checked based on the review of original copy of the Minutes of the Meeting of Energo-Aragvi Ltd. shareholders dated 11/10/2006^{41/} and found consistent. Based on the review of the Minutes of the Meeting^{41/}, it was found to be emphasized that consideration of CDM revenue to be essential to avail the financial assistance for the proposed project activity. The context of the Board resolution on project implementation decision considering CDM revenue and the awareness of the CDM modalities has been also cross checked through interviewing Mr. Taras Nizharadze, Director, Energo-Aragvi Ltd. and Mr. Hannes Posch (Technical Director, Energo-Aragvi Ltd.) and found to be consistent. The capacity of relevant national ministry of Georgia on the CDM awareness was cross checked against the information available in the official website of Ministry of Environment Protection of Georgia (http://moe.gov.ge/index.php?lang_id=ENG&sec_id=123) and found that the CDM National Board of Georgia was formed by the Decree of the Government of Georgia on 28/09/2005, thus found correct, hence accepted.

The PP upon considering the CDM revenue for proposed project activity implementation had approached the financial institution, VA TECH Finance GmbH on 12/02/2007, requesting for the requisite proposal for project financing categorically specifying intention of implementing the proposed project activity as CDM project. The same effort made by the PP was validated against the original scanned copy of the application letter^{44/} from Mr. Taras Nizharadze (Director, Energo-Aragvi Ltd.) made to VA TECH Finance, GmbH dated 12/02/2007 and found correct.

Subsequently, the financial proposal for financing the Gudauri Hydro Power Project in Georgian Republic issued by the VA TECH Finance dated 09/05/2007^{15/} was validated during the site visit based on the review of original document and found to have principally proposed for providing debt financing of 75% of the total project cost and mentioned clearly that the balance 25% of the project funding to be arranged by the project participant through internal accruals. Furthermore, the credentials of VA TECH Finance GmbH as the financial institution was also cross checked against the official company website (<http://www.vatech-finance.com/>), and found justified.

A detail review of the financial proposal from VA TECH Finance GmbH^{15/} revealed that proposal was based on following conditional clause towards 75% project funding categorically specified:

- *“in principle the Financing institution was prepared to arrange debt financing on a best-effort basis with the maximum support available under European Export promotion schemes provided by Export Credit Agencies (the “ECAs”) as well as Schemes provided by International Financial Institutions and / or commercial banks within the frame work of the Kyoto Protocol.”*

In continuation with the initial financial proposal^{/15/}, the Letter of Interest^{/16/} towards financing of the proposed project activity was issued by VA TECH Finance GmbH on 12/03/2008. This fact was validated during the site visit based on the review of original document and found consistent. The in-depth review of Letter of Interest (LoI) issued by VA TECH Finance GmbH revealed the following salient conditional aspects towards the intent on project financing:

- *"in principle the Financing institution was prepared to arrange debt financing on a best-effort basis with the maximum support available under European Export promotion schemes provided by Export Credit Agencies (the "ECAs") as well as Schemes provided by International Financial Institutions and / or commercial banks within the frame work of the Kyoto Protocol."*
- *"Consideration arranging the financing facility for the amount of about 75% of the total project value on a best effort basis "*
- *Mandatory repayment in upto 8 to 10 equal consecutive semi-annual installments*
- *Interest rate: 6-M-USD LIBOR (i.e.; 2.74% p.a.) plus a margin to be agreed upon depending on the final structure.*
- *Security package consist of following salient points:*
 - *Pledge of receivables generated under the Power Purchase Agreement (PPA) concluded with the reputable off-taker*
 - *Pledge of receivables generated under the Emission Reduction Purchase Agreement (ERPA) on an off-shore escrow account.*
- *Conditions precedent:*
 - *Required documentation for CDM project (inter alia Project Idea Note, Project Design Document, etc) has to be provided.*
 - *Emission Reduction Purchase Agreement (ERPA) concluded with reputable off-taker of the Certified Emission Reductions (CERs)*

In line to comply with the pre-requisite mentioned above to avail such debt financing from VA TECH Finance GmbH towards the proposed project, the project participant went ahead with the following milestone activities as validated below;

- Energo-Aragvi Ltd. entered into a Power Purchase Agreement^{/9/} in the year of 2007 in particular on 14/12/2007 with the "Electricity System Commercial Operator" Ltd – the Grid Authority in Tbilisi., Georgia which was cross checked against the original office copy made available during the on-site validation and considered appropriate , hence accepted.
- The original copy of the ERPA dated 23/07/2008 executed between Energo-Aragvi Ltd. and KomunalKredit Public Consulting GmbH for the sale of the potential CERs from the proposed project activity was checked during the validation site visit as a part of the document review process and is hereby satisfactorily concluded to have been entered and signed for the potential CERs from the proposed project activity. Furthermore, the credentials of KomunalKredit Public Consulting GmbH as purchaser of Emission Reduction Units was also cross checked against the official company website (<http://www.publicconsulting.at/kpc/en/home/>), and found justified.
- Validation service Agreement was signed between Clean Energy Solutions and SGS^{/37/} on 17/07/2008 and the PDD was webhosted at UNFCCC website for Global Stakeholder Consultation process on 29/07/2008 and same has been cross checked with the webhosting details at the UNFCCC-CDM website (<http://cdm.unfccc.int/Projects/Validation/DB/21RPBBC6KVMB40C0F5OO6545ZJ18WT/view.html>) and found correct.

Thus based on the verified facts it is hereby concluded that pro active steps were undertaken by the project participant towards compliance to the CDM related requirement as was specified as a pre requisite towards availing the project funding from VA TECH Finance GmbH dated 12/03/2008^{/16/} and found justified .

Furthermore, in spite of high level uncertainty towards arrangement of debt financing for the proposed project activity, only on the basis of the conditional assurance on requisite debt financing from VA TECH finance

GmbH^{/16/} (which is only possible once and only after the proposed project activity registered under CDM registry), the project participant had went ahead with signing the initial contract agreements with the contractors for equipment supplies (Hydro, civil and Electro-mechanical), civil works, etc.

The proactive approach and steps taken by the project participant to mobilize the initial activities towards project implementation was checked based on the objective documents and found consistent. The copy of the following contract agreements related to project implementation has been validated based on the objective documentary evidences and found consistent:

- Contract Agreement dated 01/09/2011 signed between Energo-Aragvi Ltd (Owner) and Kössler GmbH^{/28/}, Austria for Engineering, design, manufacturing, works tests, supervision of erection, commissioning, testing and documentation of the scope of supply and services as per technical specification.
- Contract Agreement dated 25/04/2012 executed between Energo-Aragvi Ltd and The Construction Ltd. Mazniashvili str 2.3700, Rustavi, Georgia for Steel structures and cranes^{/38/}.
- Contract Agreement dated 01/06/2012 executed between Energo-Aragvi Ltd and PERI Ltd for civil works^{/17/}.
- Contract Agreement dated 28/06/2012 executed between Energo-Aragvi Ltd and MAMISONI Ltd for civil works^{/39/}.

Under the above circumstances based on the verified documents and interviews conducted with the project management and execution team and the founder members of Energo-Aragvi Ltd. represented by Mr. Revaz Adamia, Mr. Taras Nizharadze and Mr. Hannes Posch during on-site validation on 29/09/2008 upon closure of the global stake holder's commenting period followed by the re site visit performed during 24/07/2011 to 27/07/2011 (along with approved Sectoral scope expert TA 1.2 Hydro on site) it was found that no progress with regard to project implementation had happened within the time span of nearly three years between two consecutive site visits since the project entered into the CDM validation cycle. Hence it is evident that there was no access to financial resources required to implement the proposed project activity, and neither could the project funding be obtained.

Therefore, based on the objective evidence validated and described as above, it is found justified that till date the project participant could not secure the requisite project debt financing as a major part of the project cost in real time basis due to the uncertainty of arrangement of financial resources and CDM registration for the proposed project activity is the main driving factor to move ahead with the securing of debt financing and completion of project implementation.

Thus the identified barrier under the option "Other Barriers – Financial Resources" as per EB 68 Annex 27 represents the barrier to be prohibitive towards project implementation which would prevent the Project Participant from pursuing the implementation of the proposed project activity. The identified barrier was therefore considered as sufficient grounds for demonstration of project additionality as that would prevent the project participant from carrying out the proposed project activity undertaken without being registered as a CDM project activity. This is in accordance with the means of validation as per para 114 (d) of VVM version 1.2^{/5/}.

Hereby it is accepted and concluded that in absence of CDM revenue, the implementation of the proposed project activity would not be materialized and in absence of the proposed renewable hydro power generation project activity the equivalent quantum of GHG emissions would have occurred due to the operation of fossil fuel dominated national grid system of Georgia.

Discussion of CARs/CLs:

During the initial desk review conducted on the web hosted version of the PDD^{/1/} it was noted that the PP had demonstrated additionality referring to investment barrier, technological barrier, financial barrier and Institutional barriers. As per the facts and figures included in the PDD it was found that the prevalent interest level was about 16 – 18% p.a. and the IRR for the project activity turned out to be around 8.4 %

only. The PP was required to provide reference for the basis on which the interest rate was considered and also for the assumptions and data used in IRR calculation.

As per web hosted version of the PDD^{/1/} about 75% of total power generated in Georgia was contributed by hydro power plants. The PP was therefore requested to justify the reason why not this project be considered as business as usual project against credible documentary evidence. **CAR#12** was therefore raised in this regard.

In response, the PP provided the revised and updated version of the PDD^{/2/} and withdrew / the information pertaining to the abstract of financial returns / outcome from the project activity in terms of IRR. The PP further justified that the IRR calculation was merely an indication of the viability of the project. PP had thereafter demonstrated the additionality of the project using EB 68, annex 27: "Guidelines on the demonstration of additionality of small scale project activities"^{/26/}. While doing so, the PP had applied para 1(d) of the guideline "Other barrier" only and demonstrated that the CDM revenue was necessary for project financing. The project had encountered loan rejections leading to financial constraints followed by conditional interest expressed by other financial institution imposing various clauses which would only then lead the project activity avail project funding from the financial institution namely VA Tech Finance GmbH towards project implementation. Based on the documentary evidence which were checked as a part of document review during the on-site validation and further submitted by the PP as supportive evidence it was found to have reported the constraint towards project implementation due to unavailability of financial resources correctly. The following documents were checked towards substantiation of the issue as appended hereunder;

1. Loan Rejection letter issued to the PP by Basisbank dated 04/10/2006^{/14/}
2. Financial proposal towards project funding issued to the PP by VA TECH Finance GmbH dated 09/05/2007^{/15/}
3. Conditional Letter of Interest towards project funding issued to te PP by VA TECH Finance GmbH dated 12/03/2008^{/16/}

Thus referring to the above mentioned documents it was found that the project participant was unable to raise funds for the Phase-I, 8 MW Hydro Power project on all occasions when it has approached a bank or a financial institution (FI) with the application for loan to fund the project activity, the same had outright been rejected by the Basisbank in the year of 2006. The reason behind the rejection of the loan is the non availability of the long term financing module in the country like Georgia. In addition to this financing from a bank in this region is possible only with the security deposit of collaterals.

Following rejection from the Basis Bank, it was found that the project participant approached to VA TECH Finance with the implementation plan of Hydro Power Project in the Gudauri Region. The bank replies to project participant that the project must be implemented as CDM project under Kyoto Protocol in the year 2007. In the same letter VA TECH Finance agrees to provide the loan of 75% of the total project value and rest 25% to be arranged by the project participant. Looking at the positive feedback project participant from the VA TECH Finance project participant went for the Power Purchase Agreement in the year of 2007 itself. Project participant hired the DOE for the validation of the proposed project activity under scheme of CDM within the framework of the Kyoto Protocol. The project participant signed the contract with DOE in the year 2008 after the second letter from the VA TECH Finance which specified that all the relevant clauses to be fulfilled to avail the finance.

As a result of the above the project participant had failed to gather funds required and thus the project activity implementation was not feasible. Till date the project financial closure was not performed due to the risk of the financial assistance. However the project participant floated all the required tender documents and received the offers from the manufactures but not yet finalized due to the four clauses as mentioned in the VA TECH Finance letter dated 12/03/2008^{/16/}.

Under the above circumstances in which there was no access to capital required to implement the project activity, there was no way the project financing could be obtained. It was at this point of time that the project participant was approached by a CDM consultant whose feasibility study suggested that the project activity could be implemented as a CDM project with the UNFCCC and that it has potential to earn carbon credits under CDM. Thus consequent to the discussions with the CDM consultant, when the project participant

approached the financial institutions with the proposal to implement the project activity as a CDM project activity, the financial institutions could finally be convinced of the viability of the project based on the added revenue from CDM. Hence the same was accepted leading to the satisfactory closure of **CAR#12**.

Opinion:

Based on the responses to the approach mentioned above and the requirements of paragraph 114 (d) of the VVM version 1.2 (EB 55 Annex 1)^{5/}. The validation team confirms that the documents provided for the project activity are appropriate. Hence, the rationales and justifications provided in the PDD are reliable and credible. Hence the same was accepted.

4.6.5 Common practice analysis

The proposed CDM project activity is small scale hydro power project activity and the additionality of the same has been demonstrated through other barrier analysis following guidelines laid down in EB 68, annex 27 "Guidelines on the demonstration of additionality of small scale project activities"^{26/} Common Practice analysis is therefore not applicable to the proposed CDM project activity.

4.7 Application of Baseline Methodology and Calculation of Emission Factors

The proposed project activity involves generation of electricity by utilizing the hydro power resource available in abundance in the region and supplying it to regional grid of Georgia. The project has applied baseline methodology as mentioned in the methodology AMS ID version 17^{6/} for "Renewable Electricity Generation for a grid". The project comprise of 9.2 MW capacity and supplies electricity generated to the national grid system of Georgia, thus satisfying the condition for the baseline methodology.

The applied methodology AMS.ID / version 17^{6/} has been referred to for the "Tool to calculate the Emission Factor for an electricity system", version 2.2.1^{27/}. The stepwise approach for determining grid emission factor following *ex-ante* approach has been appropriately followed to arrive at the combined margin emission factor for the Georgian national grid system. The power sector data adopted for the computation of Operating Margin, Build Margin and subsequently to arrive at the Combined Margin emission factor has been adopted" from the "Baseline Emission Factor for the Electricity System of Georgia", version 01, dated April 2008 published by the Ministry of Environment Protection and Natural Resources of Georgia (DNA office of Georgia), as recommended for CDM projects and was found to be correct.

The baseline emission factor used for calculation of emission reductions has been referred from the Baseline Emission Factor for the Electricity System of Georgia", version 01, dated April 2008 published by the Ministry of Environment Protection and Natural Resources of Georgia (DNA office of Georgia). The Combined Margin emission factor for the national grid system of Georgia has been considered for emission reduction calculation. The power sector data for the same is provided by the DNA office of Georgia which can be referred at the web-link (http://moe.gov.ge/files/Klimatis%20Cvileba/Sufta%20Garvitarebis%20Mekanizmi/SMG%20Erovnuli%20Ufl ebamosili%20Organo/Baseline_EF_2004-2006.pdf)^{40/}. This is to confirm that the power sector data considered for grid emission factor computation was the most recent data available to the PP at the start of the validation process i.e. webhosting of the PDD for global stakeholder consultation process during July 2008, thus the same was accepted.

The emission factor has been fixed *ex-ante* for the project activity. The following parameters have been fixed *ex-ante* for the project:

- $EF_{grid,OM,y}$: Operating Margin for Georgian grid: Value adopted is 0.276 tCO₂e/MWh which has been checked with the "Baseline Emission Factor for the Electricity System of Georgia", version 01 and found to be consistently adopted and hence accepted.
- $EF_{grid,BM,y}$: Build Margin for Georgian grid: Value adopted is 0.523 tCO₂e/MWh which has been checked with the Baseline Emission Factor for the Electricity System of Georgia, version 01 and found to be consistently adopted and hence accepted.

- $EF_{grid,CM,y}$: Combined Margin for Georgian grid (0.3999 tCO₂e/MWh): The value has been derived from $EF_{grid,OM,y}$ & $EF_{grid,BM,y}$, with 50% weightage each on OM and BM value.

The emission factor calculation procedure has been found in line with the requirement of Tool to calculate the emission factor for an electricity system, version 02.2.1. The value of Baseline emission factor 0.3999 tCO₂e/MWh is fixed ex-ante and will remain fixed for the entire crediting period. As mentioned in the above, the values of $EF_{grid,OM,y}$ & $EF_{grid,BM,y}$ has been sourced from “Baseline Emission Factor for the Electricity System of Georgia”, version 01, dated April 2008, which is an official publication of Ministry of Environment Protection and Natural Resources of Georgia (DNA office of Georgia) for the purpose of CDM baselines. It is based on the most recent data available at the time of the PDD webhosting and hence considered correct and hence accepted.

The project activity is a hydropower generation project activity, thus no project emissions envisaged from the project. This is in line with the paragraph 20 of the SSC methodology AMS-I.D. version 17.

In the project activity there is no energy generating equipment which is transferred from another activity, hence as per paragraph 22 of the SSC methodology AMS-I.D. version 17 there is no leakage considered for the project activity.

As mentioned in paragraph 11 of the methodology, the baseline emissions are calculated as “*product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor.*”

$$BE_y = EG_{BL,y} * EF_{CO2,grid,y} - \text{Leakage} - \text{Project Emission}$$

According to the applied methodology AMS-I.D / version 17^{/6/}, the project participant has correctly applied all the necessary equations to calculate project emission, baseline emission, leakage to arrive at the emission reduction.

The project activity primarily aims to generate electricity from hydro technology by using the hydro power resource abundantly available in the region. Thus the project activity does not have project emissions and leakage emissions considering green field wind energy generation project activity, which is found as per the provision of applied methodology AMS I.D. version 17; hence the respective values have been hereby considered zero.

As per the requirement of the applied Baseline methodology, the project activity has referred the following equation to arrive at the baseline emission from the project activity:

$$BE_y = EG_{BL,y} * EF_{CO2,grid,y}$$

Where,

- BE_y : Baseline Emissions in year y (t CO₂)
- $EG_{BL,y}$: Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
- $EF_{CO2,grid,y}$: CO₂ emission factor of the grid in year y (t CO₂/MWh)

The Emission Factor was calculated in a transparent and conservative manner as discussed above in this section.

With reference to the detailed analysis, the above mentioned equation project activity meets the entire requirement as stated in the methodology and provided all the parameters in the current version of the PDD^{/2/} in terms of *ex-ante* and *ex-post* in the respective section of the PDD^{/2/} i.e. section B.6.2 and B.7.1.

The project activity describes the following parameter as *ex-ante*:

$EF_{CO2,grid,y}$: CO₂ emission factor of the grid electricity (**0.3999 t CO₂/ MWh**):

The *ex-ante* emission reduction is calculated as follows:

$$ER_y = (EG_{BL,y} * EF_{grid, CM, y}) - PE_y - LE_y$$

Where,

- ER_y = Emission reduction due to project activity in the year y (tones/year).
 $EF_{CO_2, grid, y}$ = Grid emission factor (tCO₂e/Mwh) for the NEWNE grid system of India.
 $EG_{BL, y}$ = Quantity of Net electricity supplied by the project activity to the grid for the year 'y' (Mwh).
 PE_y = Project Emissions for the year 'y'.
 LE_y = Leakage Emission for the year 'y'.

The project activity does not have project emissions and leakage emissions considering green field hydro power electricity generation project activity; hence the value is hereby considered zero.

Emission reduction due to project activity in the year y (tons/year) is arrived at by multiplying the net energy generation from the project activity multiplied by the emission factor of the national grid system of Georgia adopted as described above and found consistent.

The net power generated from the proposed hydro power plant has been calculated based on the total installed capacity 9.2 MW. The net power generation value considered as 59,900 MWh/ year and found consistently adopted in all the documents namely Emission Reduction excel sheet and final version of the PDD^{2/}. The stage wise implementation and expected net generation data from the respective stages of the proposed project activity were cross checked against the page 8 of Project Design Report, dated June 2010^{13/} prepared by Clean Energy Solutions, the technical consultants for the project and found correct. The creditability of the Clean Energy Solutions has been cross checked from the description on fields of expertise as available in the company website (<http://www.ic-ces.at/index.php?lang=en&mod=9>) and found justified as the engineering project consulting company which fulfils the requirement of EB48 Annex 11 (Para 3.b). Project Design Report dated June 2010^{13/} prepared by Clean Energy Solutions (<http://www.ic-ces.at/index.php?lang=en&mod=9>).

Assessment Quantity of Net electricity supplied by the project activity to the grid:

The *ex-ante* assumptions used in the ER calculation in this spreadsheet were validated as described below:

Parameters	Stage – I (Initial 2 years of operation)	Integrated Stage I & Stage II (From 3 rd year onwards)
Capacity	8 MW	9.2 MW
Net Power Generation	50,600 MWh/ year	59,900 MWh/ year
Emission Factor	0.3999tCO ₂ e/MWh	
Baseline emission reduction	20,235 tCO ₂ e (50,600 MWh/ year * 0.3999 tCO ₂ e/MWh)	23,954 tCO ₂ e (59,900 MWh/ year * 0.3999 tCO ₂ e/MWh)

Based on the values of baseline emissions the average *ex-ante* annual emission reductions have been calculated as 20,234 tCO₂/ year for the first and second year of crediting period and 23,945 tCO₂/ year from third year onwards. The detailed calculation of the ex-ante emission reductions has been provided in section B.6.3 of the final version of the PDD and the ER calculation sheet. All the input values and the calculation procedures in the ER calculation sheet and the PDD have been checked and found to be appropriate.

This has been carried out in compliance with para 89, 90, 91 and 92 of VVM 1.2^{5/} and found correct. .

Discussion of CARs/CLs:

Initial desk review of the web hosted version of the PDD^{/1/} revealed that the date of baseline determination under section B.8 of PDD^{/1/} was not provided. **CAR#16** was raised in this regard.

In response, the PP had included the date of determination of the baseline under section B.8 of the revised PDD^{/2/}. The same was checked and found to be a date prior to the date of the initial web hosted version of the PDD^{/1/} which is found consistent, therefore accepted. Hence, **CAR#16** was closed out satisfactory.

Electricity generation of 50,600 MWh /year had been assumed for first two years and 59,900 MWh/year had been considered for the remaining years for the emission reduction calculation. The basis for these electricity generation figures was not clear from the excel sheet calculation provided. The PP was therefore requested to clarify on the same and **CL#13** was raised in this regard.

In response, the PP clarified that the project will be implemented in two stages. The annual power production equals to 50.6 GWh for stage 1 and 9.3 GWh – for stage 2. Consequently summarized stage 1 and stage 2 power output becomes equal to 59.9 GWh after stage 2 implementation. The expected annual generation from the proposed project activity corresponding to stage wise implementation has been sourced from the feasibility study report prepared by third party consultant, CES. The PP also clarified that the Plant Load Factor (PLF) had been adopted in lieu with EB48, Annex11. The hydrological study also carried out by third party consultant, CES in January 2010.

The assumptions on total expected generation values for Stage 1, Stage 2 and the complete integrated Stage (Stage 1 & 2) respectively have been checked and found to be consistently adopted from page 8 of Project Design Report, dated June 2010 prepared by third party technical consultant Clean Energy Solutions and found correct. The context of assumptions on total expected generation values as sourced from the Project Design Report prepared by the third party engineering project consulting company; which fulfils the requirement of EB48 Annex 11 (Para 3.b) and hence accepted.

However, PP was requested to clarify the following:

1. The basis and source of the ex-ante consideration to arrive Quantity of net electricity generation value has not been demonstrated under section B.6.3. of the revised PDD.
2. The “most recent three years” against which the OM was considered as stated under section B.6.3. Of the PDD.

In response the PP further responded as follows;

1. The revised PDD, version 11 dated 03/12/2012 was checked and found to include the basis and source of the ex-ante consideration to arrive at the Quantity of net electricity generation value has now been demonstrated under section B.6.3. The same is now in line with the VVM 1.2, para 91 and hence is accepted.
2. The “most recent three years” against which the OM has been considered as stated under section B.6.3. of the PDD, version 11 dated 03/12/2012 was during the PDD webhosting. The same was checked against the date of the PDD webhosting and the information available on grid emission factors in the public domain: http://moe.gov.ge/index.php?lang_id=ENG&sec_id=123 and found correct, hence accepted.

This was checked and found consistent with the requirements stated under section 3(b) of EB48, Annex11^{/35/} and hence accepted. Thus, **CL#13** was closed out.

Opinion

Based on the above discussion and the requirements of paragraphs 89-93 of the VVM version 01.2^{/5/} (EB 55, Annex 1), the validation team confirms that:

1. All assumptions and data used by the PP are listed in the PDD^{/2/}, including their references & sources.
2. All documentation used by the PP as the basis for assumptions & source of data is correctly quoted & interpreted in the PDD^{/2/}.
3. All values used in the PDD^{/2/} are reasonable in the context of the proposed CDM project activity.

4. The baseline methodology AMS-I.D version 17^{6/} has been applied correctly to calculate project emissions, baseline emissions and emission reductions.
5. All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD^{2/}.

4.8 Application of Monitoring Methodology and Monitoring Plan

The project activity has adopted the approved small scale monitoring methodology for grid-connected renewable electricity generation, AMS-I.D, version 17. The proposed project activity is a grid connected green field hydropower project and in line with applied Methodology no Project Emission and Leakage will be involved for this project activity. The steps taken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described below:

The monitoring plan of the PDD has followed the methodology in the context of the parameters to be monitored. The monitoring plan of the PDD has followed correctly AMS I.D version 17; section "Monitoring", Para 24 in the context of the parameters to be monitored. In the proposed project activity the only applicable parameter to be monitored is "Quantity of net electricity displaced by the project activity in year y". The proposed project is a grid connected run-of the river based hydropower generation activity and does not involve any project emissions as such $PE_y = 0$ as per the para 20 of monitoring methodology AMS I.D version 17. Leakage has not been considered for the proposed project activity as the project is a Greenfield project activity and no energy generating equipment is transferred from another project activity. This is in line with para 22 of AMS I.D / Version 17^{6/} hence hereby considered accepted. Thus, monitoring methodology has been applied consistently for the choice of the option selected for monitoring both of project and baseline emissions.

The following parameter has been correctly identified to be monitored on *ex-post* basis:

- **EG_{facility,y}** (Net Electricity supplied by project activity to the grid in year y)

In line with this, the detailed monitoring procedure/ parameters are described in section B.7.1 of the PDD.

The appropriateness of the monitoring procedure has been assessed and discussed below:

Parameters to be monitored ex-post:

Net Electricity supplied by project activity to the grid in year y (EG_{facility,y}):

- The parameter will be continuously monitored through metering equipments installed at the grid interface and the measured data will be recorded daily basis, subsequently the daily recorded data will be reported on monthly frequency.
- The monitoring / recording frequency of this parameter has been correctly followed as per requirement in page 11/17 of AMS I.D version 17.
- The electricity meters with accuracy class 0.2s will be installed in the project activity.
- Calibration of the energy meter will be performed once in every three years by certified laboratory following the national standards and specifications set up by the relevant electricity authority. This has been found consistent with the PPA signed between the PP and the buyer^{9/}, namely Electricity System Commercial Operator Ltd (ESCL).
- The project being a green field project activity which is currently under initial stage of implementation and yet to be commissioned, thus the exact positioning and location of the electricity meters would required to be verified by the verifying DOE during the first periodic verification.
- As per the final version of the PDD^{2/} in Annex 4, the net electricity delivered to the grid from the Project will be measured continuously on the basis of meter readings from the main billing meter installed at the 10 kV level grid interconnection point. There will also be another electricity meter installed at the nearby location which will measure the export-import and will serve like a check meter only. This data will be cross checked against the monthly sales invoices issued from the grid

authority. As the net power displaced is being certified by a third party which forms the basis of commercial calculations it is deemed to be authentic.

- To deal with any meter failure/ uncertainty with data monitoring, PP will provide for another set of main billing meter and import meter with exact specifications and accuracy class similar to the main billing meter.
- The detailed procedure of metering has been described in the final version of the PDD^{/2/}, under section B.7.2 and Annex 4. This was checked through the interviews conducted with the authorised representative of the Energo-Aragvi Ltd. namely Mr, Mikeladze Vakhtang and Mr, Hannes Posch during site visit by the assessment team. This was found to be logical and consistent with the standard practice in the hydro power projects hence accepted.

Discussion of CARs/CLs:

As per the webhosted PDD^{/1/}, the training needs for the project activity and provisions made for the training was not mentioned transparently. **CL#08** was raised in this regard.

In response, PP had provided the signed contract between Energo-Aragvi Ltd and consultant, Werner Johannides dated 18/03/2009^{/18/} to provide training of operational staff agreement for Technical assistance for the project. As per the contract, the staffs will undergo necessary operational training during the start-up phase. The same was verified and checked against the original true copy of the agreement and found correct, thus accepted. Hence, **CL#08** was closed out.

As per PDD^{/1/} there will be two separate meters available to monitor the export and import of power. But in the monitoring plan the same was not included consistently. **CAR#14** was raised in this regard. In response, the PP justified that the two-way (bi-directional) meter installed at the grid interconnection point would measure the net electricity exported to the national grid. Hence, installation of separate meter to monitor the export and import of power would not be required. The net power supplied to the grid as measured by the installed energy meter would take care of auxiliary consumption and losses. The particulars with regard to the meter installation was cross checked against the signed PPA^{/9/} and found consistent with the monitoring plan as described in Annex 4 and under section B 7.1. of the PDD^{/2/} hence accepted.

However the PP is requested to clarify the source of the recorded data $EG_{\text{facility},y}$ as proposed to be used for the ER calculation and further clarification was sought towards the measurement/ monitoring frequency of the parameter $EG_{\text{facility},y}$ and the cross-check of the recorded data as per the requirement of applied methodology. In response the PP provided the revised PDD, version 11 dated 03/12/2012 which was checked and found to be in line with VVM 1.2, para 123 and included transparently the source of the recorded data, measurement/ monitoring frequency of the monitoring parameter $EG_{\text{facility},y}$. The same was now in line with the approved methodology and VVM 1.2, para 123 and hence accepted. Thus, **CAR#14** was satisfactorily closed out.

The PDD^{/1/} did not discuss about the project management team, responsibilities, training of monitoring personnel, reporting, internal audit and review procedure. No information on project management team, responsibilities, training of monitoring personnel, reporting, and internal audit and review procedures were available in the PDD^{/1/}. **CAR#15** was raised in this regard and the PP was requested to clarify the same.

In response, the PP had revised the updated PDD^{/2/} to include the details of the project management team, responsibilities, training of monitoring personnel, reporting, internal audit and review procedure under Annex4. The same is found consistent with the requirements of VVM version 1.2^{/5/}, para 123 (b) (ii) and found sufficient to ensure that the emission reductions achieved by/ resulting from the proposed CDM project activity can be reported ex post and verified and hence considered acceptable.

The same was found to be in line with VVM 1.2, para 123(b). Hence, **CAR#15** was closed out satisfactorily.

Opinion

Based on the above discussion and the requirements of paragraphs 122-123 of the VVM version 01.2^{/5/} (EB 55 Annex 1), the validation team confirms that:

1. The monitoring plan included in the PDD^{/2/} is based on the approved methodology AMS-I.D version 17^{/6/} which has been applied to the proposed CDM project activity.

2. The monitoring plan is in compliance with the applied methodology AMS-I.D version 17^{/6/}.
3. The monitoring arrangements described in the monitoring plan are feasible within the project design.
4. The PP has the ability to implement the monitoring plan as per the current version of the PDD^{/2/}.

4.9 Environmental Impacts

An environmental impact assessment (EIA) has been conducted according to Georgian laws and regulations. A host party regulation requires an environmental impact assessment to obtain environmental clearance in the form of "No Objection Certificate" from the Ministry of Environment Protection and Natural Resources of Georgia. The other condition is that the site of the project has to be approved from the environmental impact assessment (EIA) and that the Environmental Management Plan (EMP) is to be prepared and submitted to the pollution control board. The assessment of environmental impacts due to the project activity has been carried out to understand if there are any significant environmental impacts and a management plan has been prepared to minimise adverse environmental impact. The study indicates that the impact of the project is not significant. During the on-site validation it was discussed in detail with Mr. Hannes Posch (Technical Director, Energo-Aragvi Ltd.) and the same was cross-checked against the Order issued by Minister of Environmental Protection and Natural Resources of Georgia dated 06/01/2011 on approval of the Ecological Examination Report on the Project developed by Energo-Aragvi Ltd. for implementation of the small HPP in Gudauri^{/31/}, and found satisfactory.

Opinion

According to the requirements of the paragraphs 131-132 of the VVM version 01.2^{/5/} (EB 55 Annex 1), the Validation team is of the opinion that the project complies with environmental regulations in Georgia.

4.10 Local Stakeholder Comments

Project participant has considered the following as local stake holders to the project activity as mentioned below:

- Personnel from Energy efficiency Centre Georgia
- Personnel from Enguri Hydro Power Station
- Personnel from Caucasus environmental NGO network
- Personnel from Ministry of Energy, Georgia
- Personnel from Hotel Gudauri
- Personnel from Gudauri School
- Personnel from Ski Lifts

During validation site visit it was verified that the identified local stakeholders were informed regarding the proposed project activity being considered as a CDM project activity and requested to express their views and provide their feedback on the same. The PP had invited the local stakeholders verbally and telephonically, informing them regarding the proposed project activity and the time, date and venue of the interactive session organized for the same requesting them to join and provide their feedbacks. The stakeholder meeting was conducted on 12/03/2007 by the PP. The stakeholder's consultation documents were checked during the validation site visit along with the attendance list of participants attending the meeting held at Meeting Hall "Salkhino" Metekhi Sheraton Palace Hotel, Tbilisi, Georgia and found to have been conducted satisfactorily.

The positive comments and feedback provided by the local stake holders regarding the project activity to be set up by Energo-Aragvi Ltd had been reviewed and discussed during the validation site visit by on-site interviews, and no negative comments towards the project activity was raised. The queries raised on the proposed CDM project activity during the local stakeholders consultation by the attendees and the positive feedback received from the local stakeholders attending the meeting was also checked against the feedback forms submitted by the stakeholders and found satisfactory. Majority were of consensus that the proposed project would contribute to sustainable development. The same was checked and considered acceptable.

The project participant had clearly detailed the stakeholder consultation process and the meeting agenda in under section E, page36 of the PDD^{/2/}. The queries raised by the stakeholders and the satisfactory responses to the same have been mentioned by the project participant in a table in section E of the PDD^{/2/}.

The MoM^{/20/} and the attendance sheet have been submitted by the project participant to the assessment team. During the site visit the validation team interviewed some of the stakeholders. Based on their replies, the validation team was convinced that the process of stakeholder consultation was carried out as described in the PDD^{/2/}. The stakeholders also confirmed that they were invited for the meeting verbally and telephonically. This was found to be consistent with the invitation process mentioned in the PDD^{/2/}.

Discussion of CARs/CLs:

There was no clear description of the stakeholder consultation process under section E of the PDD^{/1/}. The PP was requested to include the details of the stakeholder meeting, the stakeholder details and how the comments were taken care of in the PDD^{/1/}. **CL#18** was raised in this regard.

In response, project participant had reported transparently in the revised and updated version of the PDD^{/2/}. The same were checked against the evidence provided and thus **CL#18** was closed out satisfactory.

Opinion

According to the requirements of the paragraphs 128-129 of the VVM version 01.2^{/5/}, the validation team is of the opinion that the local stakeholder consultation process has been satisfactorily carried out.

5. Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

5.1 Description of How and When the PDD was Made Publicly Available

The Project Design Document for this project was made available on the UNFCCC website <http://cdm.unfccc.int/Projects/Validation/DB/21RPBBC6KVMB40C0F5OO6545ZJ18WT/view.html> and was open for comments from 29/07/2008 until 27/08/2008. Comments were invited through the UNFCCC CDM homepage.

5.2 Compilation of all Comments Received

Comment Number	Date Received	Submitter	Comment
Nil	Nil	Nil	Nil

5.3 Explanation of How Comments Have Been Taken into Account

No comment was received during the Global Stakeholders Consultation period.

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
25/07/2011	Mr. Revaz Adamia	Founder member, Energo-Aragvi Ltd.	Project Implementation schedule, Project Location and Boundary, Sustainable development, Awareness towards the project activity and type and extent of socio-economic and environmental well being by the project activity.
25/07/2011	Mr. Taras Nizharadze	Director, Energo-Aragvi Ltd.	Project funding and Implementation schedule, Consents and Approvals. CDM consideration.
26/07/2011	Mr. Vakhtang Mike Ladze	Founder member, Energo-Aragvi Ltd.	Stakeholders consultation process
26/07/2011	Mr. Hannes Posch	Technical Director, Energo-Aragvi Ltd.	Project Design, Baseline and Additionality, Evidences and Benchmark, CDM consideration. Emission reductions. Monitoring methodology, QA/QC and operational and management structure.

7. 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):

/1/	PDD version 03 dated 28/07/2008 (webhosted PDD)
/2/	PDD version 04 dated 16/03/2009 PDD version 05 dated 27/08/2010 PDD version 06 dated 16/11/2010 PDD version 07 dated 31/05/2011 PDD version 08 dated 14/02/2012 PDD version 09 dated 23/04/2012 PDD version 10 dated 18/07/2012 PDD version 11 dated 03/12/2012 (final version of the PDD)
/3/	Letter of Approval to Energo-Aragvi Ltd. issued by Minister of Environment Protection and Natural Resources of Georgia dated 18/11/2009 ref no: 05-06-06/4164
/4/	Modalities of Communication dated 20/12/2012.

Discuss the key changes in the final PDD against the version published for the international stakeholder consultation

PDD Version	Date of Revision	Main changes reason for Revision
PDD version 3 (web hosted version)	28/07/2008	PDD used for webhosting
PDD version 11	03/12/2012	<p>Section A.2: Description of the project have been revised in section A.2 Details of the phase wise Implementation has been included.</p> <p>Section B.5: Discussion of the additionality as per EB68, Annex 27 under option of "Other Barriers- Financial Resources".</p> <p>Section B.6.3:</p> <ol style="list-style-type: none"> 1. Discussion on baseline emission and ex-ante grid emission factors has been updated. 2. Estimated emission reductions to be achieved by stage wise implementation. <p>Section B.7.1:</p> <ol style="list-style-type: none"> 1. Source of the data for the parameter $EG_{facility,y}$ has been revised. 2. Monitoring frequency for the parameter $EG_{facility,y}$ has been revised. 3. QA/QC procedure for the parameter $EG_{facility,y}$ has been revised. <p>Section C.1.1: The start date of the project activity has been revised.</p> <p>Section C.1.2: The operational lifetime of the project activity has been revised.</p> <p>Section E: Details of the stakeholder meeting and how it has been conducted have been revised.</p>

/5/	<u>Clean Development Mechanism Validation and Verification Manual Version 1.2</u>
/6/	Approved methodology version: Project Type: Type I – Renewable Energy Projects Sectoral Scope – 01 Energy Industries Reference: AMS-I.D – Grid connected Renewable Electricity Generation, version 17, EB61, valid from 17 th June 2011 onwards.
/7/	Guidelines on the Demonstration of Additionality of Small-Scale project activities, EB68, Annex27, version 09.0
/8/	Tool to calculate emission factor for an electricity system ,version 02.2.1 Web link: http://cdm.unfccc.int/methodologies/DB/RSCTZ8SKT4F7N1CFDXCSA7BDQ7FU1X
/9/	Power Purchase Agreement signed between Electricity System Commercial Operator Ltd and Energo Aragvi Ltd dated 14/12/2007.
/10/	Declaration by Energo Aragvi Ltd. On no Official Development Assistance (ODA) on the proposed CDM project dated 22/08/2012.
/11/	Location of the project activity: www.googlemaps.com
/12/	Emission Reduction Spreadsheet version1 dated 28/07/2008
/13/	Gudauri SHPP Project Design Report, Rev.01, dated June 2010; prepared by Clean Energy Solutions.
/14/	Loan disapproval letter issued by JSC Basisbank dated 04/10/2006.
/15/	Financing Proposal issued by VA TECH Finance to Energo-Aragvi Ltd dated 09/05/2007 , ref no: PA
/16/	LoI issued by VA TECH Finance to Energo-Aragvi Ltd dated 12/03/2008 ref no:PA
/17/	Contract For civil construction signed between Energo-Aragvi Ltd and Peri Ltd dated 01/06/2012.
/18/	Signed contract dated 18/03/2009 between Energo-Aragvi Ltd and Werner Johannides (consultant) to provide technical assistance service to the project.
/19/	Permission for Construction issued to PP by the Chairman of Kazbegi Municipality Administration to Energo Aragvi Ltd for the construction dated 17/02/2012.
/20/	Minutes of Meeting for the stakeholder consultation held for the 9.2MW hydro power project.
/21/	Fossil fuel information published by the U.S Energy Information Administration under Table 4 : http://www.eia.gov/electricity/state/georgia/pdf/georgia.pdf
/22/	Ongoing Investment project details: http://www.menr.gov.ge/en/4494
/23/	Current project details: http://www.menr.gov.ge/en/4758
/24/	Permission for land issued to PP by the Chairman of Kazbegi Municipality Administration dated 27/01/2012
/26/	Guidelines on the demonstration of additionality of small-scale project activities, version 09.0, EB68, Annex27. Web link: http://cdm.unfccc.int/Reference/Guidclarif/meth/methSSC_guid05.pdf
/27/	Tool to calculate the emission factor for an electricity system , version 2.1.1., EB63, Annex19 Web link: http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v2.2.1.pdf
/28/	Signed Contract for E&M equipments between PP and Kössler GmbH dated 01/09/2011
/29/	Glossary of CDM terms Web link: http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf
/30/	Country wise fossil fuel consumption details from World Bank website: http://data.worldbank.org/indicator/EG.USE.COMM.FO.ZS
/31/	Order No. I-04 : Approval of the Ecological Examination Report on the Project developed by Energo-Aragvi Ltd. dated 06/01/2011
/32/	Guidelines for completing the CDM-SSC-PDD, version 5, dated 14 th September 2007 Web link: http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02.pdf
/33/	Guidelines on Assessment of De-bundling for SSC Project Activities, version 3, EB-54, Annex 13. Web link: http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid17.pdf
/34/	F-CDM-PDD-Project Design Document Form Web link: http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form04_v03_2.doc

/35/	Guidelines for the reporting and validation of plant load factors, EB48, Annex11 ,version 1.0 Web link: http://cdm.unfccc.int/Reference/Guidclarif/meth/meth_guid35.pdf
/36/	Guidelines on the demonstration and assessment of the prior consideration of the CDM, EB62, Annex13, version 04 Web link: http://cdm.unfccc.int/Reference/Guidclarif/reg/reg_guid04.pdf
/37/	Validation service Agreement executed between Clean Energy Solutions as PP and SGS as DOE dated 17/07/2008.
/38/	Contract signed for steel structures and cranes dated 25/04/2012 executed between Energo-Aragvi Ltd and The Construction Ltd. Mazniashvili str 2.3700, Rustavi, Georgia for Steel structures and cranes.
/39/	Contract Agreement dated 28/06/2012 executed between Energo-Aragvi Ltd and MAMISONI Ltd for civil works
/40/	Baseline Emission Factor for the Electricity System of Georgia, version 01, dated April 2008 Traceable at: http://moe.gov.ge/files/Klimatis%20Cvlileba/Sufta%20Ganvitarebis%20Mekanizmi/SMG%20Erovnuli%20Uflebamosili%20Organo/Baseline_EF_2004-2006.pdf
/41/	Board Decision- Minutes of the Share Holder's and Founder members meeting dated 11/10/2006 considering CDM revenues for the proposed project activity.
/42/	ERPA signed with KomunalKredit Public Consulting GmbH dated 23/07/2008.
/43/	Loan application letter to JSC Basisbank dated 21/09/2006
/44/	Application letter to VA-Tech Finance GmbH dated 12/02/2007
/45/	Copy of Memorandum of understanding between the Government of Georgia and Energo-Aragvi Ltd, signed on 04/09/2007

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A.1 Annex 1: Local Assessment

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for “**Gudauri Small Hydropower Project**”.


It serves as a “**reality check**” on the project that is completed by a local assessor from SGS.


Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
Host Country Approval letter ensuring the participation requirements being met by the project activity.	<p>Letter of Approval from the DNA office of the Host Country - Georgia, towards the CDM project activity could not be provided by the PP during the document review process of the validation site visit.</p> <p>The Georgian DNA has established the procedure for the approval of CDM projects and the mentioned procedure approximately needs more than two months as was discussed with the PP during the document review process as a part of the on-site validation. The documentary proof that this question is currently under discussion and preparation was presented which was accepted towards evidence of PP initiative to obtain the Letter of Approval from the Georgian DNA office.</p> <p>Hence a CAR 01 was raised.</p> <p>CAR 01 was closed out.</p>	<p>The approval letter from the DNA office of Georgia was not provided during the initial validation site visit on 29/09/2008, hence CAR 01 was raised.</p> <p>Letter of approval from the Georgian DNA office in particular the Environment Protection and Natural Resources of Georgia towards the CDM project activity was received on 18/11/2009. The same was verified with the letter ref. no.05-06-06/4164 dated 18/11/2009 during the subsequent validation site visit on 26/07/2011, all the project related information has been found consistent and the Host Country Approval was found unconditional. Thus the same was reviewed and accepted. CAR 01 closed out.</p>	<p>CAR 01 raised.</p> <p>CAR 01 closed out.</p>

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
Letter of Approval from the Annexe 1 Party namely the Austrian DNA towards the CDM project activity for the project ensuring the participation requirements being met by the project activity needs to be provided.	Clean Energy Solutions, GmbH, under section A.3 of the PDD has been included as a Project Participant. Therefore the Letter of approval from the Austrian DNA towards the CDM project activity for the project was required. However the same could not be provided during the on-site validation. Hence CAR was raised to obtain the same to meet the participation requirement. CAR 01 raised. Clean Energy Solutions, GmbH as a Project participant was removed from the revised version of the PDD under section A.3 and annex 1 of the document. The project would now proceed as a unilateral project activity. Hence letter of approval from the Austrian DNA office was no more required. Hence CAR 01 was closed out.	The letter of approval from Austria as Annex 1 Party was not provided during the validation site visit, hence CAR 01 was raised.	CAR 01 raised. CAR 01 closed out.
The appropriate Modalities of Communication for the project activity have to be submitted by the Project participant before submitting a request for registration.	The MOC for the project activity could not be submitted by PP during the on-site validation. Hence the correctness of information as provided in the PDD under Annex 1 could not be reconciled with the MoC. Hence CAR 03 was raised. In due course of validation MoC dated 01/08/2012 has been submitted by the PP and the correctness of the contact information PP as provided in the PDD Annex 1 has been checked and found satisfactory. CAR 03 was closed out.	CAR 03 was raised due to non availability of MoC. The following document was reviewed; - Modalities of Communication letter dated 01/08/2012.	CAR 03 raised. CAR 03 closed out.
The correct location of the project as given in A.4.1 of PDD is to be verified.	Memorandum of understanding between the Government of Georgia and Energo-Aragvi Ltd has been signed in 2007, 4 th September. The article 4 "Description of the object" describes name and location of the object. The last one is-river Tetri Aragvi, north of the village Zemo Mleta; Geographic coordinates- 42.28.12.14N 44.28.8.03.E. The original version (Georgian) of Memorandum is undersigned by ex Prime Minister of Georgia Mr Zurab Noghaideli. During the audit process the mentioned location has been	Memorandum of understanding between the Government of Georgia and Energo-Aragvi Ltd The article 4 "Description of the object" Original -Georgian language (signed and stamped).	No further action required.

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
	<p>visited by us. The location is a rural area, nor settlements around. The pictures of location were taken</p> <p>The location, described in Memorandum and seen on site is the same location of the project as given in A 4.1. of PDD, hence accepted.</p>		
<p>The appropriate project ownership and requisite approval/ license required for establishment of the project activity at the mentioned geographical location needs to be checked.</p>	<p>Following legally required permissions/licenses have to be obtained in future to reach the legal clearance allowing the project implementation:</p> <ol style="list-style-type: none"> 1. Environmental impact permission. 2. Building construction permission. <p>Both these documents supposed to be obtained after completion of land ownership rights registration in accordance with national procedures.</p> <p>As per the letter from Kazbegi authorities (Kazbegi municipality administration) to the Ministry of Economy Mrs. Eka Tkeshelashvili, the process of land acquisition was started at 7.10.2008 (see attachment).</p> <p>Ministry of Economy was provided with the following attachments to the mentioned letter:</p> <p>Copy of Memorandum of understanding between the Government of Georgia and Energo-Aragvi Ltd, signed in 2007, 4th September.</p>	<p>The following documents were checked during the on-site validation and found satisfactory;</p> <ul style="list-style-type: none"> - Copy of Memorandum of understanding between the Government of Georgia and Energo-Aragvi Ltd , signed in 2007, 4th September - Letter from Kazbegi authorities (Kazbegi municipality administration) to the Ministry of Economy <p>Original -Georgian language (signed and stamped)</p> <p>Translation-English (attached)</p> <ul style="list-style-type: none"> - Power Purchase Agreement signed between PP and Electricity System Commercial Operator Ltd (ESCL) dated 14/12/2007^{9/} - Project Design Report 	<p>No further action required.</p>

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
		dated June 2010.	
<p>Actual situation or planning for the project activity needs to be cross checked.</p> <p>Project's spatial boundaries and the system boundaries needs to be cross checked.</p>	<p>The actual situation and planning was checked and verified during the validation site visit at the demarcated project site and no progress in the construction phase for the stage wise implementation of the proposed project were checked during the on-site validation. Since it is a hydro power project activity keeping in mind of the long gestation period the issue of the risk of delay in project implementation was discussed with the Project Participant and the technical consultants and it was clearly demonstrated that due to financial constraints and non availability of funds the project could not reach a financial closure and had encountered with the loan rejection from financial institution.</p> <p>During validation site visit of the project, it was discussed with the project participant in particular that due to unavailability of financial support from the financial institutions the implementation in terms construction could not be initiated and therefore had to face financial obstacles. This was cross checked against the bank rejection letter issued to the Director – Energo-Aragvi Ltd by the Basisbank dated 04/10/2006^{/14/} and found correct.</p> <p>However the phase wise implementation plan for the project in the year 2012 quarter wise has been incorporated in the revised PDD^{/2/} and is hereby apprehended to get started in January 2012 through tendering and procurement of equipments. The plan covers the project planning from procurement to start up and marked the milestone activity of project implementation as forecast in January 2012 against actual activity.</p> <p>The first phase of the implementation for 8 MW capacity of the</p>	<p>The following documents were reviewed during the on-site validation and found satisfactory;</p> <ul style="list-style-type: none"> - Letter issued by Basisbank to Energo-Aragvi Ltd for the rejection of bank loan dated 04/10/2006. - The starting of the implementation of the project activity and expected completion timeline was cross checked against information published by the Ministry of Energy and Natural Resources of Georgia traceable at http://www.menr.gov.ge/en/4758 <p>Further to the document reviewed as mentioned above it was also discussed with the PP and considered accepted.</p>	No further action required.

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
	power plant is apprehended to be completed by end 2012 followed by the second phase for implementation of 1.2 MW capacity of the project activity which is likely to get commissioned by February of 2015. The same was also discussed with Project Participants and considered accepted.		
To be checked whether the project technology is likely to be substituted by other or more efficient technologies within the project period	As per interview with project participants during validation site visit, it was conformed that no other efficient technologies will be implemented to substitute proposed technology within the project period. This is because the current project is already addressing all the technological needs of project.	<p>The green field hydro power project employing run-of-river technology is a proven and steady stable technology hence there would not be any substitution of technology as discussed with PP during the in-site validation seems logical, hence accepted.</p> <p>On-site validation photographs:</p> 	No further action required.

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
			
The requirement of extensive initial training and maintenance efforts in order to work as presumed during the project period	<p>Energio-Aragvi Ltd, Project development SHPP Gudauri scheme/ training for operation and maintenance, October 2008 was provided by Mr. Hannes Posch.</p> <p>Also the documentary proof, that the training charges are included in the budget, was provided.</p> <p>Required training activities are included into the project budget (PPs have declared the Austrian Engineers from "Clean Energy Solutions " Vienna-Austria will provide the Gudauri project stuffs with required practical knowledge during on-the-job trainings.</p> <p>During the construction of the Gudauri scheme the required team to operate the plant in the future will be selected and invited to Austria for training at an operational scheme.</p> <p>During the on the job training the staff will learn to:</p> <ul style="list-style-type: none"> -To experience dynamic behavior of plants under normal & abnormal conditions. -To decide suitable action(s) under abnormal operating conditions -To avoid damages to the plant -To optimize generation -To have sound knowledge of personal and plant safety 	<p>The following document was reviewed and found satisfactory;</p> <ul style="list-style-type: none"> - Contract Agreement with Werner Johannides dated 18/03/2009 	<p>CL-08 raised.</p> <p>CL 08 closed out.</p>

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
	<p>-To diagnosis the reasons behind abnormal system conditions (if occur).</p> <p>CL 08 was raised to obtain the relevant information on the initial extensive training and maintenance efforts taken by the PP (if any).</p> <p>The PP had entered into a contract agreement with Werner Johannides dated 18/03/2009 towards providing technical assistance for the project. This factual information was validated against the copy of the contract provided by PP which seems logical and found consistent hence accepted. CL 08 was closed out.</p>		
Check the documentary evidence for baseline emission factor of Georgian National Grid as given by DNA of Georgia	<p>The "PROJECT DESIGN DOCUMENT FORM (CDM-SSC-PDD) - Version 03" annex 3 Baseline information / Ministry of Environment Protection And Natural Resources of Georgia/ Clean Development Mechanism Designated National Authority/ Baseline emission factor for the electricity system of Georgia, was mentioned by Mr. Hannes Posch (Technical Director, Energo-Aragvi Ltd.)</p> <p>The calculation of emission factor of Georgian national grid is officially approved by Local authorities.</p>	The certified value for the OM & BM for the Georgian National Grid "Baseline Emission Factor for the Electricity System of Georgia", version 01, dated April 2008 provided by the Ministry of Environment Protection and Natural Resources of Georgia was considered accepted towards arriving at the Grid emission factor.	No further action required.
De-bundling	As per the PDD the project is an independent project and not a de-bundled component of a larger project activity. During the site visit it was confirmed that it is an independent green field project activity and meets the criteria of not being a debundled component of a larger project activity. Hence it is justified and found acceptable. However proper justification was not provided in PDD. Official site of ministry of Energy of Georgia	<p>During the validation site visit it was found that the project is an independent project activity and not a debundled component of a larger project activity.</p> <p>The following official web site of the government of Georgia was</p>	<p>CAR 10 raised.</p> <p>CAR 10 closed out.</p> <p>No further action required.</p>

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
	does not contain any information that could allow to suppose the project to be a part of any other larger scale activity. Hence CAR 10 was raised.	also cross checked and found that the project is not a debundled component of another large scale project activity. http://www.minenergy.gov.ge/	
Check the EIA report	Energo-Aragvi Ltd. Project development SHPP Gudauri SCHEME/ Environmental & Social impact assessment, October 2008./ Clean development solution. During the on-site validation it was discussed in detail with Mr. Hannes Posch (Technical Director, Energo-Aragvi Ltd.) and the same was cross-checked against the Order issued by Minister of Environmental Protection and Natural Resources of Georgia dated 06/01/2011 on Approval of the Ecological Examination Report on the Project developed by Energo-Aragvi Ltd. for placing the small HPP in Gudauri ^{/31/}	The following documents were reviewed and found satisfactory; Order issued by Minister of Environmental Protection and Natural Resources of Georgia dated 06/01/2011 on Approval of the Ecological Examination Report on the Project developed by Energo-Aragvi Limited for placing the small HPP in Gudauri.	No further action required.
Local stakeholders consultation	According to the protocol In 2008, October 6 th the stakeholder consultation meeting was held in Gudauri. The discussion theme was Gudauri project. 38 local residents took participation in mentioned meeting. They were asked to fill the questionnaire, including following questions. 1. <i>Do you think that construction of HPP on the Teteri-Aragvi river can improve the sustainable development of region? Why?</i> 2. <i>Have you any doubts or comments regarding environmental impact of the project? Do you think that EIA was addressed properly?</i>	The following documents were reviewed and found satisfactory; Protocol of stakeholders meeting (on Georgian) Copies of questionnaires filled by stakeholders. (on Georgian)	No further action required.

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
	<p>3. Are there any unforeseen environmental risks could be caused by this project?</p> <p>4. Are there any negative social impacts of the project for local population?</p> <p>5. Other comments.</p> <p>38 full-filled questionnaires were presented. Most of them are positive towards Gudauri project.</p> <p>There are no negative comments were raised during project discussion with stakeholders.</p>		

A.2 Annex 2: Validation Checklist

Table 1 Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, Letters of Approval and UNFCCC website)

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
<p>1. All Parties involved have approved the project activity</p> <p>1.1. Has the DNA of each Party involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval which confirms</p> <p>1.1.1. The country is a Party to the Kyoto Protocol</p> <p>1.1.2. Participation is Voluntary</p> <p>1.1.3. The Host Party confirming that the proposed CDM project activity contributes to sustainable development of the country Non-Annex 1 Party shall submit a letter of approval</p> <p>1.1.4. It refers to the precise proposed CDM project activity title in the PDD being submitted for registration</p>	<p>Annex 3, Clean Development Mechanism, Validation and Verification Manual, Version 01.2 (from this point forwarded referenced as VVM) – 45/49a-d /54a-b/127</p> <p>Paragraph 37 CDM Modalities and procedures</p>	<p>As per section A.3 of PDD the Party listed is Georgia. Georgia has ratified the Kyoto Protocol on 16 June 1999 and allowed to participate in CDM projects. Web link: http://maindb.unfccc.int/public/country.pl?country=GE.</p> <p>CAR 01 was raised to obtain LoA from the Parties involved.</p> <p>The National Focal Point – Ministry of Environment Protection and Natural Resources of Georgia – has issued Letter of Approval for “Gudauri Small Hydropower Project” no.05-06-06/4164 dated 18.11.2009 to Energo-Aragvi Ltd. as the authorised project participant. Inter alia the LoA confirms that participation of Georgia is voluntary in the CDM as well as the project will assist Georgia in achieving sustainable development and the issues LoA was unconditional. The title of the project presented in the PDD and the LoA is similar.</p> <p>Thus CAR 01 was closed out.</p>	<p>CAR 01 raised</p> <p>CAR 01 closed out.</p> <p>Y</p>
<p>1.2. If the project participant(s) listed in the PDD published at international stakeholder¹ consultation are not included in the PDD</p>	<p>EB 30 Para. 41.</p> <p>EB50 Annex 48 para. 8</p>	<p>Refer 1.1.</p> <p>During course of validation, the novation agreement has been signed among Clean Energy Solutions,</p>	<p>Y</p>

¹ Stakeholders mean the public, including individuals, groups or communities affected, or likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
submitted with request for registration, a letter should be obtained from the withdrawn project participant(s) confirming its voluntary withdrawal from the proposed project activity.		Energo-Aragvi Ltd. and witnessed by SGS UK Ltd. In the Novation agreement dated 15/11/2012, Clean Energy Solutions has been transferred and novated the rights, liabilities and other obligations under the CDM Validation Service Agreement to Energo-Aragvi Ltd. as the authorised Project Participant and project owner. This is found complying the requirement of Para 8 EB 50 Annex 48, thus accepted.	
1.3. The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above	VVM Para. 49/ 53,54	Refer 1.1	Y
2. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30 days, and the project design document and comments have been made publicly available	VVM Para. 128 Marrakech Accords, CDM Modalities, §40	The project was listed in the UNFCCC website from 29 July 08 to 27 Aug 08 at: http://cdm.unfccc.int/Projects/Validation/DB/21RPB/BC6KVM40C0F5006545ZJ18WT/view.html No comments were received.	Y
3. The project design document is in accordance with the applicable CDM requirements for completing PDDs.	VVM Para. 57 Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The latest version of the PDD (Version 03) has been used correctly in conformance with UNFCCC SSC PDD format. As per EB guidelines the template should not be altered but a footer "PDD_Gudauri_280708" has been added in the PDD. So CAR 02 was raised. The PPs provided necessary corrections in the footers in the revised PDD, version 4 dated 16/03/2009. Therefore CAR 02 was closed out.	CAR 02 raised CAR 02 closed out. Y
4. The project participants shall submit a completed modalities of communication (MoC) Form	F_CDM_MOC form available on UNFCCC website	The MOC needs to be submitted by PP (CAR 03). MoC dated 01/08/2012 were submitted. CAR 03 was closed out.	CAR 03 raised . CAR 03 closed out. Y

Table 2 PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	VVM Para.56 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	The title of the project activity is "Gudauri Small Hydropower Project". The title is able to identify the unique CDM activity.	Y
A.1.2. Is there an indication of a revision number and the date of the revision?	VVM Para.56 PDD section A.1	DR	In section A.1 of the webhosted PDD, under the title of location how version and date is mentioned and why revision history is included but kept blank. Hence CL 04 was raised. The PPs provided revised PDD version 11 dated 03/12/2012 where the date and revision has been mentioned transparently. Hence, CL 04 was closed out.	CL 04 raised CL 04 was closed out. Y
A.2. Description of the Project Activity				
A.2.1. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately?	VVM Para.59 PDD section A.2 see also A.4, A.4.3 and B.3	DR	The description provided towards the proposed CDM project activity as contained in the PDD does not sufficiently cover all relevant elements accurately and is found not to be transparent and clear. The information provided also is not consistent in the PDD. Objective information towards capacity and phase wise installation for the current project activity is not clear. The PP requires including proper information regarding the quantum of power expectedly to be generated by the project activity and further to be exported to the relevant grid. CAR 05 was raised. The MoU signed between PP and Government of Georgia in 2007, it was agreed to construct a hydropower project at Aragvi river a cascade with 2 hydro power plants: Stage I and stage II. Because of the financial problems, PP had started the construction for stage I (8MW) only. Likewise, it has signed the MoU and PPA for 8MW only, the construction for the remaining 1.2 MW will be taken up later and subsequently	CAR-05 raised. CAR 05 was closed out.

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			all the relevant consents will be applicable thereafter. The project being a future project is considered acceptable. The Project Design Report dated June 2010 submitted by PP has categorically included information on the capacity for the Stag-II part of the project as 1.2 MW. Hence, the cumulative capacity of the power plant is hereby accepted as 9.2MW. Hence CAR05 was closed out.	
A.2.2. Is all information provided consistent and in compliance with the actual situation or planning?	VVM Para.64 PDD section A.2 see also A.4, A.4.2 and B.3	DR	Pending CAR 05 closure. All information provided consistent and in compliance with the actual situation or planning. CAR05 was closed out.	Pending Y
A.2.3. Is all information provided consistent with details provided in further chapters of the PDD?	VVM Para.64 PDD section A.2	DR	The information provided is consistent with the details provided in the further chapters of the PDD.	Y
A.3. Project Participants				
A.3.1. Is the table required for the indication of project participants correctly applied?	VVM Para. 51 PDD section A.3	DR	Annex 1 of PDD is not complete and is not consistent with section A.3 of PDD. CAR 06 was raised. Project participant has been reported correctly under section A.3 and further annex 1 of the revised PDD version 7 dated 31/05/2011. Revised and updated version of the PDD dated 31/05/2011 was checked and found to have removed Clean Energy Solutions from the Project participant's list under section A.3 and further Annex 1 of the document. Thus the project will proceed as unilateral project which is hereby considered accepted and thus CAR 06 is closed out.	CAR 06 raised. CAR06 was closed out Y
A.3.2. Is all information provided in consistency with details provided by further chapters of the	VVM Para. 51 PDD section A.3	DR	Pending closure of CAR06. CAR06 is closed out. All information related to Project Participant provided in the subsequent chapters of the	Pending Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
PDD (in particular annex 1)?			PDD was found consistent.	
A.4. Technical Description of the Project Activity				
A.4.1. 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)	VVM Para.64 PDD section A.4	DR	The information provided on the location of the project activity is clear.	Y
A.4.2. Does the proposed CDM project activity involve the alteration of existing installations or process?	VVM Para.64 PDD section A.4	DR/SV	The project is a green field renewable hydro power project. It is confirmed in the site visit that the project does not involves the alteration of the existing installations.	Y
A.4.3. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	VVM Para.64 PDD section A.4	DR	The relevant clearances, namely permission for construction dated 17/02/2012 issued by Kazbegi Municipality Administration and permission for land issued by the Chairman of Kazbegi Municipality Administration dated 27/01/2012 issued for the project activity, Copy of Memorandum of understanding between the Government of Georgia and Energo-Aragvi Ltd, signed on 04/09/2007 and Order issued by Minister of Environmental Protection and Natural Resources of Georgia dated 06/01/2011 on approval of the Ecological Examination Report on the Project developed by Energo-Aragvi Ltd. for placing the small HPP in Gudauri has been obtained by the Project participant. These clearances and/or permissions as verified confirms that the project participant possess ownership or licenses which will allow the implementation of the project at that site.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A.4.4. Is the category(ies) of the project activity correctly identified?	VVM Para.64 PDD section A.4	DR	<p>The project is a small scale and refers to Type 1, category D - Grid connected renewable electricity generation. However the total capacity of the hydro power plant is required to be included in the PDD for both the stages of implementation. It is mentioned that Francis Turbines will be used in Stage I and Pelton Turbines used in Stage II and Stage III but in the table under technical description the turbine type is given as Pelton in both stages. In the description it is given as 8.9 MW of installed capacity. But in the table given under stage I and II the total capacity is not adding to 8.9 MW.</p> <p>CAR 07 was raised.</p> <p>Revised PDD version 10 dated 18/07/2012 has been reviewed and found that the justification regarding the project technology description are elaborated which is in line with the requirement of SSC PDD guideline.</p> <p>CAR07 was closed out.</p>	<p>CAR 07 raised CAR 07 closed out. Y</p>
A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?	VVM Para.64 PDD section A.4 EB 52 Para. 13	DR/SV	<p>Pending closure of CAR 5 and 17.</p> <p>All information provided related to technical description of the project activity is found in compliance with actual situation or planning as available by the project participant.</p> <p>CAR05 and CAR17 was closed out.</p>	<p>Pending Y</p>
A.4.6. Is the table required for the indication of projected emission reductions correctly applied?	VVM Para.64 PDD section A.4	DR	The table at section A.4.3 of the PDD indicating projected emission reductions has been correctly applied.	Y
A.5. Debundling				
A.5.1. Is the small-scale project activity a debundled component of a large scale project	VVM Para. 136c EB54 para 35 & Annex 13	DR / SV	<p>As per PDD the project is not a de bundled component of large scale project activity. But proper justification is not given in PDD. CAR 10 was raised.</p> <p>The web link _http://www.minenergy.gov.ge/_ was checked and found that the project is</p>	<p>CAR 10 raised. CAR 10 closed out.</p>

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
activity			not a part of any other project activity. Thus accepted. Hence CAR 10 was closed out. Thus, CAR 10 was closed out.	Y
A.5.2. If the project is a debundled component of a larger project, does the larger project fall within the limits for small-scale CDM project activities	VVM Para. 136c	DR / SV	The same would have to be checked during the on-site validation. Pending closure of CAR 10. The proposed project activity is not a debundled component of a larger project. CAR 10 closed out and also checked during site visit and found consistent.	LAC & Pending closure of CAR 10 Y
A.6. Public Funding				
A.6.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?	PDD section A.4.4	DR	As per PDD there is no public funding involved in the project activity. Documentary evidence needs to be provided. (CAR 9). In order to confirm the absence of public funds used for project financing PPs has submitted the declaration signed by Energo - Aragvi executives. Pursuant to this declaration no public funds have been used or will be used to project investment. PP has mentioned the same in the revised PDD, version 9 dated 23/04/2012. Therefore CAR 09 was closed out.	CAR 09 raised. CAR 09 closed out. Y
A.6.2. Is all information provided consistent with details provided by further chapters of the PDD (in particular annex 2)?	PDD section A.4.4	DR	The information is consistent with Annex 2 of PDD. However pending closure of CAR 09. The financing of the proposed project activity does not involve any public funding. CAR 09 was closed out	Pending Y
A.6.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance	PDD section A.4.4	DR	Pending closure of CAR 09. The financing of the proposed project activity does not involve any public funding. CAR 09 was closed out	Pending Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B. Baseline and Monitoring Methodology				
B.1. Choice and Applicability				
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	VVM Para.68 PDD section B.1	DR	The project has used approved methodology version 13 of AMS 1D during webhosting. The version is no longer valid. Subsequently, the PDD has been revised with the latest methodology AMS.ID, version 17.	Y
B.1.2. Has the methodology (incl. the tools) been altered from the original version as referenced in the PDD?	VVM Para.70 PDD section B (B.1-B.2)	DR	The methodology and tools applied are the latest version used in the PDD.	Y
B.1.3. Does the project activity qualify as small scale project?	VVM Para. 136a	DR	The project falls under Type I, for which the capacity of the proposed project activity should not exceed 15 MW. As per PDD the installed capacity of this hydro power project is 9.2 MW and hence it qualifies as a small scale project.	Y
B.1.4. Is the category(ies) of the project activity correctly identified in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities?		DR	The project is a small scale and refers to Type 1, category D - Grid connected renewable electricity generation that is correctly identified.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.5. Is the selected simplified methodology applicable to the project activity in the PDD?	VVM Para.75/66a/68/73 PDD section B (B.1-B.2)	DR	The selected simplified methodology is applicable to the project activity.	Y
B.1.6. Does the project activity conform to one of the approved small-scale categories?	VVM Para. 136b EB61 Annex 21	DR	The proposed project activity is the installation of 9.2 MW Greenfield hydro power project where the generated electricity is supplied to the regional grid and hence is conformed to AMS I.D, version 17.	Y
B.1.7. Is the project activity a bundle of several small scale activities and if so does it contain any sub-bundles?		DR	The proposed project activity is not a bundle of several small scale activities, this has been validated during project site validation.	Y
B.1.8. If the project activity is a bundle of several small scale activities, does the sum of the total bundle (including any subbundles) fall within the limits for small scale projects		DR	N/A	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.9. If the project activity is a bundle of several small scale activities, has the form with information related to the bundle been submitted and is it correctly used		DR	N/A	Y
B.1.10. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVM Para.75/66b/68 PDD section B (B.1-B.2)	DR	The proposed project activity is the installation of 9.2 MW Greenfield hydro power project where the generated electricity is supplied to the regional grid and hence is conformed to AMS I.D, version 17.	Y
B.2. Project Boundary				
B.2.1. Are all emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified and described in a complete and transparent manner? Is there information on GHG emissions in proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to	VVM Para.79/77 /67a PDD section B.3	DR	Yes the project boundary of the project activity has been chosen as per the guidelines of the applicable methodology.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.				
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the tool to calculate emission factor of electricity system (wherever applicable) and the underlying methodology?	VVM Para.79 PDD section B.3	DR	As per PDD the Georgian National grid has been chosen as the relevant grid. Hence, PP has selected the Georgian DNA to calculate the emission factor of electricity system.	Y
B.2.3. Does the project boundary include the physical delineation of the proposed CDM project activity?	VVM Para.78/79 PDD section B.3 also see section A.4.2	DR	Yes the project's spatial boundaries and system boundaries are clearly defined.	Y
B.2.4. Are the project's geographical boundaries and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	VVM Para.76/79 PDD section B.3 also see section A.4.2	DR	Yes, the project's geographical boundaries and the project system boundaries have been clearly defined.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.3. Identification of the Baseline Scenario				
B.3.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD 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?	VVM Para.67b.80/82/86 PDD Section B.4/B.5	DR	As per the methodology the most likely baseline is the “kWh generated by the project activity multiplied by the emission factor of the regional grid in which it displaces the electricity”.	Y
B.3.2. Are all tools/procedures in the methodology correctly applied to identify the most reasonable baseline scenario? This includes 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?	VVM Para.81-84/87a-d/ PDD Section B.4/B.5	DR	PP has correctly identified the most reasonable baseline scenario and all the relevant tools/ procedures in the methodology correctly applied	Y
B.3.3. Is the choice of the baseline compatible	VVM Para.87b-	DR	As per PDD the baseline emission factor for Georgian National Grid has been calculated by DNA of Georgia. The same has been used for emission reduction	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
with the available data?	c/95 PDD Section B.4/B.5		calculation. The local assessment confirmed that baseline emission factor is approved by the Local Authorities.	
B.3.4. Is conservativeness addressed in the way of identifying the baseline?	VVM Para.90 PDD Section B.4/B.5	DR	As the emission factor for the grid has been calculated by DNA of Georgia the same is accepted as authentic and reliable data.	Y
B.3.5. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	VVM Para.90/91 PDD Section B.4/B.5	DR	The selected baseline represents the most likely scenario and found justified.	Y
B.3.6. Is there a verifiable description of the baseline scenario? Does this include a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM Para.87e/85 PDD Section B.4/B.5	DR	The project baseline scenario has been demonstrated based on the requirement of the applied methodology AMS I.D. In absence of the proposed project activity, the equivalent amount of electricity would have been generated in carbon intensive national grid system of Georgia. The carbón intensiveness of the Georgian power sector has been checked against the information made publicly available at the U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report" (http://www.eia.gov/electricity/state/georgia/pdf/georgia.pdf) and found justified.	Y
B.4. Additionality				
B.4.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and	VVM Para 137 EB 68 report, annex 26 EB 68 Annex 27	DR	Even though it is a small scale project, "Tool for the demonstration and assessment of additionality" has been used to demonstrate additionality in the webhosted PDD. But version 04 of the tool has been used which is not the latest version. As per PDD the only alternative to the project activity is to put up a new thermal power	CAR11 was raised. CAR11 closed out.

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
by following all the required steps?	VVM Para.67d/95 PDD Section B.1/B.4/B.5		<p>plant. But proper justification is not given. Also the alternative discussed in step 1a and step 2 b is not consistent.</p> <p>As per the methodology the PPs can use simplified modalities and procedures - Attachment A to appendix D on additionality that was applied in the PDD ver.6 dated 06/11/2010.</p> <p>Financial Expert comments: PP built its argument by indirectly comparing the equity IRR of the project with the interest rate (financing rate). This present some imprecision that are necessary to address. Firstly, IRRs should be compared with a relevant benchmark rate. In this case, given the fact the PP presents equity IRRs, this should be compared with a leveraged cost of capital discount rate. Although the 18% interest rate has been validated as a correct value for financing projects in the host country, this does not represent a good estimation of the cost of capital of a leveraged project, and it is in fact a debt rate.</p> <p>Secondly, PP shows figures for 'IRR before taxes', and 'IRR after taxes and financing'. It is necessary that PP show 'IRR after taxes financing and loan repayments' in order to make them comparable with the correspondent leveraged cost of capital that is being suggested. 'IRR after taxes and financing' should be removed. Alternatively, PP could present a pure or unleveraged analysis, with 'unleveraged IRR after taxes' being compared with 'unleveraged cost of capital benchmark rates'. Ideally, the new argument of additionality should be discussed in the PDD, including IRRs and discount rates figures. All relevant assumptions for estimating the leveraged cost of capital should be explained and justified, including risk free returns, risk premiums, unleveraged or leveraged betas, and any other key assumptions made.</p> <p>Thirdly, no continuity values have been considered in the cash flows. Given the fact that project cash flows will last longer than the investment evaluation period, continuity or at least residual values should be considered at the end of the evaluation period.</p>	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			<p>Fourthly, a sensitivity analysis should be carried on. This sensitivity analysis of key assumptions and results should be included and discussed in the PDD, and also included and backed up with the relevant spread sheets, and tables.</p> <p>The proposed project activity is a small scale project and as per EB 68, annex 27 guidelines project participant carried out the Guidelines on the demonstration of additionality of small-scale project activities, version 09.0. Thus the current project activity does not require using Additionality Tool, version 5.2</p> <p>According to the EB 68, annex 27, the project participant shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers i.e. Investment barrier, Technological barrier, Barrier due to prevailing practice and other barriers. In accordance with the stated requirement project participant demonstrates additionality by discussing other barrier.</p> <p>Hence, CAR11 was closed out.</p>	
B.4.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD? Are all steps followed in a transparent manner?	PDD Section B.1/B.4/B.5	DR	<p>Pending closure of CAR 11.</p> <p>The project additionality has been further demonstrated based on EB 68, annex 27 as applicable for small scale project activity.</p> <p>CAR 11 was closed out.</p>	Pending Y
B.4.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with	VVM Para.93/91 PDD Section B	DR	<p>Pending closure of CAR 11.</p> <p>The project additionality has been further demonstrated based on EB 68, annex 27 as applicable for small scale project activity.</p> <p>CAR 11 was closed out.</p>	Pending Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
complete transparency to all available data and documentation?				
B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project? If the project activity start date is prior to the validation is it discussed how the CDM was taken into account in the decision to go ahead with the project activity	VVM Para.102b PDD Section B.5 EB62 Annex 13	DR	<p>As per section C.1.1 of webhosted PDD the start date of the project activity is 01.09.2008, the earliest of date given. The operational lifetime is given as 35 years. The documentary proof for start date and operational lifetime was required, thus CAR 17 was raised.</p> <p>In response to CAR 17, the start date of the project activity was revised as 01/09/2011 based on the date of signing contract for E&M equipments with Kössler GmbH, which is the earliest date on which PP has committed towards project expenditure. Section C.1.1 of the revised PDD has stated the project start date as 01/09/2011. The copy of the said E&M contract agreement was checked for the date and was found to have been consistently mentioned in the PDD.</p> <p>The discussion on additionality is consistent with the start date of the project.</p> <p>The expected operational lifetime of the project activity has been revised by the PP in the revised version of the PDD as 30 years with reference to the lower limit of the recommended lifetime of hydro power plants (range of 30 to 80 years) by International Renewable Energy Agency as per the report "Renewable Energy Technologies – Cost Analysis Series" dated June 2012. The consideration on the assumption of 30 years as expected project operational lifetime has been validated based on the IRENA report on hydropower "Renewable Energy Technologies – Cost Analysis Series", dated June 2012; page 7 (traceable at: http://www.irena.org/DocumentDownloads/Publications/RE_Technologies_Cost_Analysis-HYDROPOWER.pdf) and found consistent.</p> <p>Thus, CAR 17 was closed out.</p>	CAR 17 CAR 17 closed out.
B.4.5. If an investment analysis has been used, has it been demonstrated that the proposed project	VVM Para. 106, 107, 108, 109 112a-c PDD Section B.5	DR	<p>Pending CAR 11 closure</p> <p>The project additionality has been further demonstrated based on EB 68, annex 27 following approach as Other Barrier (Financial Resources) as applicable for small scale project activity.</p>	Pending CAR11 is closed out Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?			CAR 11 was closed out.	
B.4.6. If a benchmark is used, is it ensured that it is selected in accordance with the requirements of the tool /methodology and it represents standard returns in the market (not linked to the subjective profitability expectation or risk profile of a particular project developer).	VVM Para. 110 PDD Section B.5	DR	<p>As per the webhosted PDD the project faces investment barrier, technological barrier, financial barrier and Institutional barriers. As per PDD the present interest level is about 16 – 18% p.a. and the IRR is coming to around 8.4 % only. Provide reference for the basis on which the interest rate has been taken. As per PDD about 75% of total power generated is contributed by hydro power plants in Georgia. Then why not this project be considered as business as usual project needs to be justified.</p> <p>In response, the project additionality has been further demonstrated based on EB 68, annex 27 following approach as Other Barrier (Financial Resources) as applicable for small scale project activity, which was found justified based on objective documentary evidences validated.</p> <p>CAR 12 was closed out.</p>	CAR 12 CAR 12 closed out. Y
B.4.7. 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	VVM Para. 114 116a-b/117 PDD Section B.5 EB50, Annex 13	DR	<p>Pending closure of CARs 11 &12</p> <p>In response, the project additionality has been further demonstrated based on EB 68, annex 27 following approach as Other Barrier (Financial Resources) as applicable for small scale project activity, which was found justified based on objective documentary evidences validated.</p> <p>CAR 11 and CAR 12 was closed out.</p>	Pending Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
alternatives?				
B.4.8. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVM Para. 105 PDD Section B.5	DR	<p>Pending closure of CARs 11 &12</p> <p>In response, the project additionality has been further demonstrated based on EB 68, annex 27 following approach as Other Barrier (Financial Resources) as applicable for small scale project activity, which was found justified based on objective documentary evidences validated.</p> <p>CAR 11 and CAR 12 was closed out.</p>	<p>Pending</p> <p>Y</p>
B.4.9. If a barrier analysis has been used have the 'guidelines for objective demonstration and assessment of barriers' been followed? Have all applicable steps been considered and substantiated with objective evidence?	VVM Para 113 EB 50 Annex 13	DR	<p>Pending closure of CARs 11 &12</p> <p>In response, the project additionality has been further demonstrated based on EB 68, annex 27 following approach as Other Barrier (Financial Resources) as applicable for small scale project activity, which was found justified based on objective documentary evidences validated.</p> <p>CAR 11 and CAR 12 was closed out.</p>	Y
B.4.10. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity. Do they also abide by the same applicable laws and legislations?	VVM Para. 105 PDD Section A.4.2/B.5	DR	<p>The project baseline scenario has been demonstrated based on the requirement of the applied methodology AMS I.D.</p> <p>In absence of the proposed project activity, the equivalent amount of electricity would have been generated in carbon intensive national grid system of Georgia. The carbón intensiveness of the Georgian power sector has been checked against the information made publicly available at the U.S. Energy Information Administration, Form EIA-861, "Annual Electric Power Industry Report" (http://www.eia.gov/electricity/state/georgia/pdf/georgia.pdf) and found justified.</p>	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.4.11. Has it been shown that the project is not common practice?	VVM Para. 119-121 PDD Section B.5 EB 69 Annex 08	DR	Pending closure of CARs 11 &12 In response, the project additionality has been further demonstrated based on EB 68, annex 27 following approach as Other Barrier (Financial Resources) as applicable for small scale project activity, which was found justified based on objective documentary evidences validated. CAR 11 and CAR 12 was closed out.	Pending Y
B.4.12. What are they key distinctions between the project activity and any similar projects that are widely used as common practice?	VVM Para. 119-121 PDD Section B.5 EB 69 Annex 8 EB 68 Annex 28 EB69 Annex 7	DR	Pending closure of CARs 11 &12 In response, the project additionality has been further demonstrated based on EB 68, annex 27 following approach as Other Barrier (Financial Resources) as applicable for small scale project activity, which was found justified based on objective documentary evidences validated. CAR 11 and CAR 12 was closed out.	Pending Y
B.5. Application of the Simplified Methodology				
B.5.1. Has the simplified methodology been applied correctly for determining baseline emissions ?	VVM Para. 92d PDD Section B (B.6.1 -B.71)	DR	The applied methodology AMS-I.D has been correctly applied for calculating the baseline emissions. As per the methodology the baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient measured in kg CO2 equivalent/kWh. The emission coefficient of the grid has been calculated as the combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the approved methodology ACM0002.	Y
B.5.2. Has the simplified methodology been applied correctly for determining project emissions ?	VVM Para. 90-92 PDD Section B (B.6.2-B.71)	DR	As per the applied methodology there are no project emissions associated with the project activity	Y
B.5.3. Has the simplified	VVM Para.	DR	As per PDD there are no leakages associated with the project activity. The same has	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
methodology been applied correctly for determining leakage ?	92d PDD Section B (B.6.2 -B.71)		been in accordance with the applied methodology.	
B.5.4. Where applicable, has the simplified methodology been applied correctly for the direct calculation of emission reductions ?	VVM Para 90/91/92d PDD Section B (B.6.2 -B.71)	DR	N/A	N/A
B.5.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they been properly justified and are they correct?	VVM Para./90/91/92 PDD Section B (B.6.2 -B.71)	DR	N/A	N/A
B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5-C	DR	Uncertainties in GHG emission estimate and requisite QA-QC approach has been discussed in the PDD, Annex 4.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.6. Ex-ante Data and Parameters Used				
B.6.1. Are the data provided in compliance with the methodology?	VVM Para. 91/67c PDD Section B.6.3/B.6.4	DR	The data provided are found in compliance to the monitoring methodology.	Y
B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVM Para. 92a/b PDD Section B.6.3/B.6.4	DR	The OM and BM values were adopted from the Georgian certificate issued by the DNA and the relevant Ministry, hence are considered authentic.	Y
B.6.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	The vintage of all the baseline data have been correctly adopted.	Y
B.6.4. Is all the data appropriate and correctly applied to the CDM project activity?	VVM Para. 92c PDD Section B.6.3/B.6.4	DR	All the data have been correctly and appropriately applied to arrive at the estimated emission reduction.	Y
B.6.5. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed, correct, and will they result in conservative estimates?	VVM Para. 90 PDD Section B.6.3/B.6.4	DR	The parameters will be monitored for ex-post estimation.	Y
B.6.6. If the project activity uses the PLF does it follow the guidance provided in EB48	EB48 Annex 11.	DR	Electricity generation of 50600 MWh/year has been assumed for first two years and 59900 MWh/year has been considered for the remaining years for the emission reduction calculation. The basis for these electricity generation figures is not clear from the excel sheet calculation provided. Please provide more details on PLF and the basis	CL 13 raised. CL 13

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
annex 11?			of assumption for the power production. A spreadsheet is requested so as a detailed analysis can be undertaken by the assessors. The report provided is too recent and cannot be related. CL 13 was raised. CL 13 was closed out.	closed out. Y
B.7. Calculation of Emissions Reductions				
B.7.1. Has the simplified methodology been applied correctly for determining emission reductions ?	VVM Para. 92d PDD Section A.4.3/B.6	DR	The methodology has been correctly applied for determining the emission reductions..	Y
B.7.2. Are the emission reduction calculations documented in a complete and transparent manner?	VVM Para. 92e PDD Section B.6	DR	Yes the ER calculation is documented in complete and transparent manner in PDD. However pending closure of CL 13. CL 13 was closed out.	Pending Y
B.7.3. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	PDD Section B.6	DR	For projection the electricity generation has been estimated whereas during verification actual generation based on measured values will be used for emission reduction calculation.	Y
B.7.4. Is the calculation of the emission reduction correct?	VVM Para. 92e PDD Section B.6	DR	The calculation of emission reduction was found correct.	Y
B.8. Emission Reductions				
B.8.1. Is the form/table	PDD Section A.4.3/	DR	The table for projected emission reductions has been correctly applied.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
required for the indication of projected emission reductions correctly applied?	Section B.6			
B.8.2. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	PDD Section A.4.3/ Section B.6	DR	Yes the projection is in line with the time schedule of project's implementation and indicated crediting period.	Y
B.9. Monitoring Methodology				
B.9.1. Does the monitoring methodology provide a consistent approach in the context of all parameters to be monitored and further information provided by the PDD? Are all parameters and data that are available at validation consistent with the simplified methodology. Has this data been interpreted and applied correctly?	VVM Para. 67e PDD Section B.7- B.8 see also Annex 4 EB69 Annex 4 EB69 Annex 5	DR	As per the PDD there are two separate meters available to monitor the export and import of power. But in the monitoring plan the same is not included. Hence in the data parameters monitored both export and import has to be monitored and the net electricity supplied by the project activity has to be calculated from which emission reduction achieved by the project activity can be calculated. CAR14 was raised in this regard. Updated revised PDD included the monitoring of gross energy production, auxiliary demand, EG grid to project and net energy delivered to the grid. CAR14 was closed out.	CAR 14 raised. CAR 14 closed out. Y
B.9.2. Does the monitoring methodology apply	PDD Sections B and C	DR	As per the methodology there are no project emissions in this project activity. For baseline emission the combined margin approach has been consistently used.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
consistently the choice of the option selected for monitoring both of project and baseline emissions?				
B.10. Data and Parameters Monitored				
B.10.1. Does the monitoring plan in the PDD comply with the simplified methodology? 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?	VVM Para. 92a/92d/123/79 PDD Section B.7-B.7.2	DR	Pending CAR 14 closure The monitoring plan in the PDD comply with the requirements of applied methodology AMS I.D. ver. 17. CAR 14 was closed out.	Pending Y
B.10.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the simplified methodology applied?	PDD Section B.7-B.7.2/B.6.2	DR	Yes the choices of project GHG indicators reasonable and in conformance with the requirements set by the simplified methodology.	Y
B.10.3. Will it be possible to determine the specified project GHG indicators?	PDD Section B.6.2-B.8	DR	Yes the net electricity generated by the project activity can be verified.	Y
B.10.4. Is the information given for each monitoring	PDD Section B.6.2-B.7.1	DR	Yes the information provided is sufficient to ensure verification of proper implementation of monitoring plan.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	EB61 Annex 21			
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 Section B.6.2-B.7.1	DR	Yes the information given is sufficient to ensure delivery of high quality data.	Y
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 Section B.5-B.7.2	DR	Yes the monitoring approach is in line with current good practices.	Y
B.10.7. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	PDD Section B.6.2-B.7.1	DR	As per the applicable methodology there are no project emissions associated with the project activity.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
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?	VVM Para. 121 Refer to all data within the PDD Inc. B.6.2-B.7.1	DR	Yes the data monitored is measured using calibrated meters and the same is cross checked with one more meter. Hence data quality is ensured.	Y
B.11.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	Refer to all data within the PDD Inc. B.4/B.7.2/Annex 4	DR	In case of any problem in the meter the procedure that will be followed for data measurement is described in Annex 4 of PDD	Y
B.11.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	VVM Para 121	DR	Yes QA/QC procedures are sufficiently described to ensure delivery of high quality data.	Y
B.11.4. Is it ensured that data will be bound to national or internal reference standards?	VVM Para. 87d	DR	As the parameter is measured using standard calibrated meters with accuracy Class of 0.2 the data will be bound to national standards.	Y
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?	VVM Para. 19	DR	As the measured data can be cross checked with the receipt of sales to the grid there will be less chance of over estimation of emission reductions.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.12. Operational and Management Structure				
B.12.1. Is the authority and responsibility of project management clearly described?	PDD Section B.8/Annex 1	DR	The webhosted PDD did not discuss anything about the project management team, responsibilities, reporting and review procedures. CAR 15 was raised. The updated PDD version 4 dated 16/03/2009 has the updated information and can be acceptable. These will also be reviewed during later stages to see that this is in compliance. Therefore, CAR 15 was closed out.	CAR 15 raised. CAR 15 closed out. Y
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.8/Annex 1	DR	CAR 15 was raised to clarify this issue. The updated PDD has the updated information about the project management team, responsibilities, training of monitoring personnel, reporting, internal audit and review procedures and found acceptable. Therefore, CAR 15 was closed out.	CAR 15 raised. CAR 15 closed out. Y
B.12.3. Are procedures identified for training of monitoring personnel?	PDD Section B.8/Annex 1	DR	The initially desk review of the web hosted version of the PDD revealed that it did not include specific information on the training needs for the monitoring and other person involved in the project activity. CL 08 was raised to clarify this issue. The PP had entered into a contract agreement with Werner Johannides dated 18/03/2009 towards providing technical assistance for the project. This factual information was validated against the copy of the contract provided by PP which seems logical and found consistent hence accepted. CL 08 was closed out.	CL 08 raised. CL 08 closed out. Y
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?	VVM Para. 124a	DR	Yes the monitoring plan has been developed in a project specific manner.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.13.2. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?	VVM Para. 124b EB61 Annex 21	DR	The only parameter to be monitored is the net electricity generation by the project activity and the same is monitored with two meters. One main meter and the other to cross check.	Y
B.13.3. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	VVM Para. 124b	DR	The electricity generation will be monitored using meters with accuracy class of 0.2. hence the data measured will be of good accuracy levels	Y
B.13.4. Are procedures identified for calibration of monitoring equipment?	VVM Para. 123a-b EB61 Annex 21	DR	As per PDD, the meters will be calibrated in time intervals of not more than six months.	Y
B.13.5. Are procedures identified for maintenance of monitoring equipment and installations?	VVM Para. 123a-b	DR	As per the PDD, the meters will be sealed and the same will be maintained and calibrated once in six months	Y
B.13.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to	VVM Para. 123a-b EB61 Annex 21	DR	The PDD contains the procedures for data archiving, records.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
process performance documentation)				
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?	VVM Para. 124a-c	DR	Yes procedures are identified and the same is described in Annex 4 of PDD.	Y
B.13.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	VVM Para.124a-c	DR	The PDD contains the procedures related to internal audits of GHG compliance.	Y
B.13.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	VVM Para. 124a-c	DR	The PDD contains the procedures for project performance reviews before data is submitted for verification, internally or externally	Y
B.13.10. Describe the ability of the project participants to implement the monitoring plan.	VVM Para. 124c	DR	Annex 4 of the PDD ver.5 contains relevant description of ability of the PPs to implement the monitoring plan that is considered sufficient. This will be the issue for checking during the verification.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.14. Baseline Details				
B.14.1. Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	DR	Date is not indicated in PDD ver.3. Thus, CAR16 raised. The corrected version was updated in the revised PDD version 07 dated 31/05/2011 with the date that is acceptable. CAR16 was closed out.	CAR 16 raised. CAR 16 closed out. Y
B.14.2. Is this consistent with the time line of the PDD history?	Also see revision history of the PDD	DR	The provided date is prior to the PDD ver.3 development.	Y
B.14.3. Is all data required provided in a complete manner by annex 3 of the PDD?	PDD Annex 3	DR	Yes all data required for calculation of combine margin for Georgian National grid is given in Annex 3 of PDD.	Y
C. Duration of the Project / Crediting Period				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	VVM Para. 102a-b PDD Section C.1.1/C.1.2	DR	As per section C.1.1 of webhosted PDD the start date of the project activity is 01.09.2008, the earliest of date given. The operational lifetime is given as 35 years. The documentary proof for start date and operational lifetime was required, thus CAR 17 was raised. In response to CAR 17, the start date of the project activity was revised as 01/09/2011 based on the date of signing contract for E&M equipments with Kössler GmbH, which is the earliest date on which PP has committed towards project expenditure. Section C.1.1 of the revised PDD has stated the project start date as 01/09/2011. The copy of the said E&M contract agreement was checked for the date and was found to have been consistently mentioned in the PDD. The discussion on additionality is consistent with the start date of the project. The expected operational lifetime of the project activity has been revised by the PP in the revised version of the PDD as 30 years with reference to the lower limit of the recommended lifetime of hydro power plants (range of 30 to 80 years) by International	CAR17 raised. CAR17 closed out. Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			Renewable Energy Agency as per the report “Renewable Energy Technologies – Cost Analysis Series” dated June 2012. The consideration on the assumption of 30 years as expected project operational lifetime has been validated based on the IRENA report on hydropower “Renewable Energy Technologies – Cost Analysis Series”, dated June 2012; page 7 (traceable at: http://www.irena.org/DocumentDownloads/Publications/RE_Technologies_Cost_Analysis-HYDROPOWER.pdf) and found consistent. Thus, CAR 17 was closed out.	
C.1.2. 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)?	VVM Para. 102a PDD Section C.2/C.2.1/C.2.2	DR	The project has chosen renewable seven-year crediting period scheme (21 years in total).	Y
C.1.3. Does the project's operational lifetime exceed the crediting period	VVM Para. 102a PDD Section C.1.2/C.2.1.1/C.2.1.2	DR	Pending closure of CAR 17. The expected operational lifetime for the proposed project activity has been justified as 30 years and CAR 17 was closed out. Yes the operational lifetime is more than the crediting period.	Pending Y
C.1.4. Does the start date indicate whether this is a new project activity or a pre-existing project activity?	VVM Para. 102a/104/98 PDD Section C.1.1/C.2.1.1	DR	Pending closure of CAR 17. The project start date has been further justified as 01/09/2011 based on the date of the signing of E&M contract agreement with Kössler GmbH. Hence CAR 17 was closed out. Considering the project start date as 01/09/2011 which is after 02/08/2008, thus as per the guideline of EB 62 Annex 13 the proposed project activity has been considered as a new project activity.	Pending Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
D. Environmental Impacts				
D.1.1. Does the project comply with environmental legislation in the host country?	VVM Para. 133/136d PDD section D	DR	As per PDD the project does comply with the environmental regulations of the host country. EIA was developed for the project within the feasibility study. Order issued by Minister of Environmental Protection and Natural Resources of Georgia dated 06/01/2011 on approval of the Ecological Examination Report on the Project developed by Energo-Aragvi Ltd. for implementation of the small HPP in Gudauri, and found satisfactory.	Y
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVM Para. 133 PDD section D	DR	The analysis was sufficiently described in the PDD.	Y
D.1.3. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	VVM Para. 133 PDD section D	DR	The EIA study has been conducted and no major environmental impacts were found. It was confirmed that the Ministry of Environment protection and Natural Resources has no objection to construct the SHPP. Meanwhile, it is necessary to obtain an environmental permission prior to construction.	Y
D.1.4. Will the project create any adverse environmental effects?	VVM Para. 133 PDD section D	DR	The project being run-of the river hydro power project, the construction phase will have environmental effects on surrounding environment whereas appropriate mitigation measures are envisaged to be implemented.	Y
D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVM Para. 133 PDD section D	DR	No trans boundary environmental impacts are considered in the analysis.	Y
D.1.6. Have identified environmental impacts been addressed in the	VVM Para. 133	DR	Yes, the identified impacts are properly addressed in the PDD	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
project design?	PDD section D			
E. Stakeholder Comments				
E.1.1. Have relevant stakeholders been consulted?	VVM Para. 130a PDD Section E.1	DR	There is no clear description of the stakeholder consultation process in the PDD. CL 18 was raised. Stakeholder's consultations have been conducted. Relevant evidence was submitted and checked against comments received. Therefore CL 18 was closed out.	CL 18 raised. CL 18 closed out. Y
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVM Para. 130a PDD Section E.1	DR	The stakeholder's consultation was conducted within meetings. Also there were a 2-months publishing in local papers.	Y
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVM Para. 130b PDD Section E.1	DR	Yes, the process is sufficiently described.	Y
E.1.4. Is a summary of the stakeholder comments received provided?	VVM Para. 130b PDD Section E.2	DR	Information was confirmed by document submitted and verified by local assessor.	Y
E.1.5. Has due account been taken of any stakeholder comments received?	VVM Para. 130b PDD Section E.3	DR	No negative comments were received.	Y



A.3 Annex 3: Overview of Findings

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	14	04	00

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CAR	Number:	01	Reference:	Table 1
Lead Assessor Comment:					
The LOA from the DNA of Austria and also from Host country (Georgia) needs to be submitted. The PDD is not clear. In the section A.3 of PDD for PP Clean Energy Solutions it is mentioned that the Party (Austria) wishes to be considered as project participant and for Kommunalkredit Public Consulting GmbH (KPC), the Party (Austria) doesn't wishes to be considered as project participant.					
Project Participant Response:				Date: 16/03/2009	
The letter of Approval from the DNA in Georgia has not been received yet, as we had to get the approval on the Environmental Impact assessment by the Ministry of Environment first, which we expect within the next weeks. We do not understand that we need LOA from DNA in Austria? KPC is only the possible Buyer of CERs and has not to be considered as a Project Participant. CES is the Consultant for Project Preparation, Project Design and Supervision of Project Implementation and the representative of Energo Aragvi Ltd to assist in getting Project Financing.					
Documentation Provided by Project Participant:					
No document provided.					
Information Verified by Lead Assessor:					
N/A					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/04/2009	
Please note that the Parties with capital P indicate the Host Country so the above interpretation would not hold as commented in the PDD. Also a LoA from Austria would be required if there is an involvement of a non-annex party. So kindly submit the same.					
Acceptance and Close out by Lead Assessor: Open				Date: 06/04/2009	
Project Participant Response:				Date: 03/06/2009	
The letter of Approval from the DNA in Georgia has not been received yet. We expect to get the Approval within the next 2 weeks.					
Documentation Provided by Project Participant:					
No document available.					
Information Verified by Lead Assessor:					
N/A					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/06/2009	
LoA is still pending. CAR shall remain open.					
Acceptance and Close out by Lead Assessor: Open				Date: 18/06/2009	
Project Participant Response:				Date: 14/07/2009	
Please refer to the enclosed letter received from Energo-Aragvi regarding the letter of Approval coming from the Ministry of Energy of Georgia.					
Documentation Provided by Project Participant:					
LoA could not be provided.					
Information Verified by Lead Assessor:					
N/A					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 14/07/2009	
LoA is still pending. CAR shall remain open.					
Acceptance and Close out by Lead Assessor: Open				Date: 14/07/2009	

Project Participant Response:	Date: 23/04/2012
Please find enclosed the LOA from the Ministry of Environment and the revised PDD, version 9.	
Documentation Provided by Project Participant:	
"LoA.doc" Revised PDD, version 9	
Information Verified by Lead Assessor:	
Letter of approval from the Ministry of Environment Protection and Natural Resources of Georgia. No other Party is envisaged. The LoA was reviewed against participant's requirements and found appropriate. Revised PDD, version 9 dated 23/04/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 10/07/2012
Host Country Approval from Ministry of Environment Protection and Natural Resources of Georgia has been verified with the letter ref. no.05-06-06/4164 dated 18/11/2009, all the project related information has been found consistent and the Host Country Approval was found unconditional. Thus accepted. However the updated and revised PDD version 09 dated 23/04/2012 yet mentions Clean Energy Solutions, GmbH, under section A.3 as a Project Participant. Therefore the Letter of approval from the Austrian DNA towards the CDM project activity for the project is still pending. Kindly provide the same.	
Acceptance and Close out by Lead Assessor: Open	Date: 10/07/2012
Project Participant Response:	Date: 18/07/2012
Clean Energy Solutions was removed as Project Participant therefore there is no need for the Letter of Approval from the Austrian DNA	
Documentation Provided by Project Participant:	
Revised PDD version 10 dated 18/07/2012	
Information Verified by Lead Assessor:	
Revised PDD version 10 dated 18/07/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 24/07/2012
The revised and updated version of the PDD dated 18/07/2012 was checked and found to have removed Clean energy Solutions as project participant under section A.3 and further annex1 of the PDD. Hence, accepted. Therefore, no letter of approval from the Austrian DNA is required. The project will proceed as unilateral project. Thus, CAR 01 is closed out.	
Acceptance and Close out by Lead Assessor: Closed	Date: 24/07/2012

Date:	02/08/2008		Raised by:	Assessment Team		
Type:	CAR	Number:	02	Reference:	Table 1	
Lead Assessor Comment:						
As per EB guidelines the PDD template should not be altered but a footer “PDD_Gudauri_280708” has been added.						
Project Participant Response:				Date: 16/03/2009		
Footer “PDD_Gudauri_280708” will be removed on the updated PDD.						
Documentation Provided by Project Participant:						
PDD Version 04 dated 16/03/2009						
Information Verified by Lead Assessor:						
PDD Version 04 dated 16/03/2009 & (CDM-SSC-PDD) - Version 03 template						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/06/2009		
CAR02 is closed as the corrected template is used						
Acceptance and Close out by Lead Assessor: Closed				Date: 18/06/2009		

Date:	02/08/2008		Raised by:	Assessment Team		
Type:	CAR	Number:	03	Reference:	Table 1	
Lead Assessor Comment:						
The Modalities of Communication needs to be submitted.						
Project Participant Response:				Date: 16/03/2009		
Please specify your requirements that we can answer correctly.						

Documentation Provided by Project Participant:	
MoC was not provided.	
Information Verified by Lead Assessor:	
N/A	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 06/04/2009
PP is requested to refer to EB45 Annex 1 and clarify with regard to the MOC form.	
Acceptance and Close out by Lead Assessor: Open	Date: 06/04/2009
Project Participant Response:	Date: 03/06/2009
The form for MoC is attached to this document.	
Documentation Provided by Project Participant:	
090604_MoC.doc	
Information Verified by Lead Assessor:	
Modalities of communication have been submitted to SGS. Please see file 090604_MoC.doc	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/06/2009
Please provide the MOC as per the latest document template version.	
Acceptance and Close out by Lead Assessor: Open	Date: 18/06/2009
Project Participant Response:	Date: 24/07/2012
See enclosed MOC Document.	
Documentation Provided by Project Participant:	
MoC dated 20/07/2012	
Information Verified by Lead Assessor:	
MoC dated 20/07/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 24/07/2012
The MoC was checked and found to be incomplete thus the PP is hereby requested to kindly provide the MoC template appropriately filled. Thus, CAR03 remains open	
Acceptance and Close out by Lead Assessor: Open	Date: 24/07/2012
Project Participant Response:	Date: 13/08/2012
The MOC Document was updated. See enclosed	
Documentation Provided by Project Participant:	
The enclosed revised Modalities of Communication has been prepared following the procedures for Modalities of Communications between Project Participants and the Executive Board.	
Information Verified by Lead Assessor:	
Revised MoC dated 04/09/2012.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 11/09/2012
The MoC submitted by the PP is found consistent with the revised PDD and hence is acceptable. However, please clarify the PP name in the page 1, section 2 of the MoC and the inconsistency of the address between MoC and the Annex 1 of the revised PDD, version 11 dated 03/12/2012.	
Acceptance and Close out by Lead Assessor: Open	Date: 20/12/2012
Project Participant Response:	Date: 20/12/2012
The revised MOC dated 20/12/2012 have now been submitted which includes the PP name under section 2, page 1 and the contact details of the PP is now been revised in the MoC as per the revised PDD, version 11 dated 03/12/2012.	
Documentation Provided by Project Participant:	
MoC dated 20/12/2012	
Information Verified by Lead Assessor:	
The revised MoC dated 20/12/2012 was checked against the requirement to fill the MOC.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 21/12/2012
The revised MoC was checked and found to include the PP name under section 2, page 1 and the contact details of the PP in line with the requirements of the guidelines to fill MoC and hence is accepted. Thus, CAR03 was closed out.	

Acceptance and Close out by Lead Assessor: Closed	Date: 21/12/2012
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Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CL	Number:	04	Reference:	A.1.2
Lead Assessor Comment:					
In section A.1 of the webhosted PDD, under the title of location how version and date is mentioned and why revision history is included but kept blank. PP is requested to clarify the same.					
Project Participant Response:				Date: 16/03/2009	
Will be updated.					
Documentation Provided by Project Participant:					
PDD, version 4 dated 16/03/2009					
Information Verified by Lead Assessor:					
PDD, version 4 dated 16/03/2009					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/06/2009	
The revision history has now been removed and the version and date has been modified and reported consistently. However, PP is requested to clarify that how version 1 dt 28/07/2008 and Version 2 dt. 23/03/2009 is appearing in the PDD history whereas PDD version 3 was the webhosted PDD, dated 28/07/2008.					
Acceptance and Close out by Lead Assessor: Open				Date: 01/12/2012	
Project Participant Response:				Date: 03/12/2012	
PP would like to clarify that there was a typographical error in the PDD. The version and date of the PDD have now been updated accordingly. Also, the revision history has now been removed under section A.1 of the revised PDD as per the Guidelines for completing the CDM-SSC-PDD, version 5 dated 14 September, 2007.					
Documentation Provided by Project Participant:					
PDD, version 11 dated 03/12/2012					
Information Verified by Lead Assessor:					
PDD, version 11 dated 03/12/2012 was checked in line with VVM 1.2, para 56.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 03/12/2012	
The revision and date of the revised PDD, version 11 dated 03/12/2012 has been correctly filled up. The same is in line with the requirements of VVM 1.2, para 56 and as per CDM-SSC-PDD, version 5 dated 14 September, 2007 and hence accepted. Thus, CL 04 was closed out.					
Acceptance and Close out by Lead Assessor: Closed				Date: 03/12/2012	

Date:	02/08/2008		Raised by:	Assessment Team		
Type:	CAR	Number:	05		Reference:	A.2.1
Lead Assessor Comment:						
The description provided is not transparent and is not clear. The information provided is not consistent in the PDD. Even how much the capacity is going to be installed and how the generated electricity is going to be used i.e. whether it is going to be fed into the grid or otherwise is not clearly explained. The situation that was prevailing in the year 1999 / 2000 has been explained which is quite long back. What is the present situation is not clear from PDD.						
Project Participant Response:					Date: 16/03/2009	
The project layout has been changed during project preparation. In the final layout two stages will be implemented step by step. Stage 1 will be with an installed capacity 8.0 MW and estimated yearly production 50.6 GWh. Stage 2 will be with an installed capacity 1.2 MW and estimated yearly production 9.3 GWh. All energy production will be fed into the public grid.						
Documentation Provided by Project Participant:						
Evidence is not provided						
Information Verified by Lead Assessor:						
N/A						

Reasoning for not Acceptance or Acceptance and Close Out:	Date: 06/04/2009
Evidence for the same is not provided CAR cannot be closed.	
Acceptance and Close out by Lead Assessor: Open	Date: 06/04/2009
Project Participant Response:	Date: 03/06/2009
Enclosed you will find the latest Project Design Report of Gudauri SHPP which gives the latest layout of the project.	
Documentation Provided by Project Participant:	
090529_Gudauri_Project_Design_Report.doc	
Information Verified by Lead Assessor:	
090529_Gudauri_Project_Design_Report.doc	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/06/2009
<p>The presented installed capacity and power production of both project stages correspond to those reflected in Project implementation report submitted by PPs. (Please see file 090529_Gudauri_Project_Design_Report.doc attached, section 1.3.).</p> <p>The status of this document is not clear. PPs should be asked to clarify is this document officially approved and adopted by project owner and operator or is it at least publically available. The report provided is dated May2009 and also is not a certified Design report. Although the two phases can be accepted it is not clear how the power generation was envisaged especially during the time of investment decision. These values are critical and hence need further validation. CAR is open.</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 18/06/2009
Project Participant Response:	Date: 14/07/2009
Regarding the certification of the Design Report please refer to the enclosed letter from Energo-Aragvi. The power generation has been calculated based on the existing topographical working head and the flow duration curve of the river Aragvi based on existing flow data and additional measured flow data by Energo-Aragvi prior to investment decision. See feasibility report.	
Documentation Provided by Project Participant:	
Letter from Energo- Aragvi dated 29/05/2009	
Information Verified by Lead Assessor:	
The letter is a self undertaking by the PP 29/05/2009 endorsing Clean Energy Solutions as their Engineering consultants for the preparation of Project Design Report.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 14/07/2009
CAR05 is open as it is not clear that the report submitted is in 2009 and the investment decision was undertaken in 2006. PP is requested to elaborate how the evidence provided in line with the explanation above.	
Acceptance and Close out by Lead Assessor: Open	Date: 14/07/2009
Project Participant Response:	Date: 24/11/2009

<p>The development of Hydropower plant takes time in a complicate environment like Georgia and had to be adjusted several times following new regulations, political decisions, power purchase agreement procedure. All the changes during the development time from 2006 till 2009 had to be considered and the project to be adopted to invest in an economic project a precondition of the Aragvi company to proceed with the project. The final Design Report prepared in 2009 presents the final layout and all the activities to proceed with the project are based on the final and approved Design Report.</p> <p>Investment Decision Chronology</p> <p>Originally the Gudauri SHPP was planned to be part of Gudauri Ski resort and to guarantee electricity supply for the Gudauri Hotel. In 2005 Aragvi Energy was founded to study in detail the possibility of the development of the Gudauri SHPP project.</p> <p>In 2006 the Board of Aragvi decided to finance the necessary feasibility study to prepare the necessary basis for decision making.</p> <p>In October 2006 the Board of Aragvi decided to proceed with the project and to concentrate on the possible financing scheme. Due to difficult environment on international project financing the Board decided to place the project within the CDM procedure as the only realistic possibility to find international project financing. Therefore in November 2006 the PIN was submitted to the Georgian DNA and was endorsed in December 2006 by the Georgian Ministry of Energy.</p> <p>With the endorsement at hand immediately negotiations with international organisations started and in May 2007 a Letter of Interest for project financing with VA-Tech Finance from Vienna, Austria could be obtained under the consideration that the project will be registered at UNFCCC within the CDM program to get relevant certificates (See enclosed documents).</p> <p>In December 2007 PPA could be signed with the Government.</p> <p>In parallel the necessary documentations like Feasibility Studies, Business plans and the PDD was prepared. In July 2008 the contract with SGS to assist in Validation and Registration process was signed.</p> <p>Till end of 2009 the Design Report including Detailed Design Works and all required documents to obtain the relevant permits were prepared.</p> <p>Procurement procedure documents have been prepared and financed by Energo Aragvi.</p> <p>At present the project progress including financial closure depends on the registration at UNFCCC to obtain the possible CERs to continue the negotiations with VA-Tech Finance and other organisations for financial closure.</p>	
Documentation Provided by Project Participant:	
N/A	
Information Verified by Lead Assessor:	
NA	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 04/03/2010
<p>It is still not transparent if the figures used for calculations were approved. The PPs are kindly requested to provide copies of the studies with correspondent approvals.</p> <p>The project description is still not clear; it should include the information of installed capacity, what kind of technology employed, how the proposed project activity reduces GHG etc.</p> <p>According to latest SSC PDD guideline, A.4.2 section should also include a description of how environmentally safe and sound technology and knowhow is being applied by the project activity, detail information, etc. Please refer to the guideline.</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 04/03/2010
Project Participant Response :	Date: 31/05/2011

<p>Clean Energy Solutions – CES GmbH is one of the leading engineering consultants for the development and implementation of Small Hydropower Projects. The Project design is based on international standards and EU regulations inter alia http://www.esha.be/index.php?id=39 The relevant documents feasibility study, project design report have been submitted. The layout of the project has been developed as an integrated process and has been finally by Energo Aragvi as the Investor and Concession holder of the Project. See letter from Energo Aragvi submitted to SGS on 15.07.2009</p> <p>Section A.4.2 of the PDD dated 20.04.2010 was amended with general description of the project. PPs are requested to expand the description on the type of turbines, whether the equipment to be installed is up-to-date or uses old technologies, whether the equipment is new to be implemented.</p> <p>Section B.5 inter alia should include description of how GHG emissions will be reduced. Please revise the section accordingly.</p> <p>However the PPs have provided a letter on approval of the final project report kindly please make available a signed and approved copy of the project report for the validator.</p> <p>The installed capacity is defined very clearly in every document we have prepared and the technology is well proven since more than 130 years.</p> <p>As per SSC PDD guideline version 05, we have updated the section A.4.2 in the PDD. See enclosed PDD.</p>	
Documentation Provided by Project Participant:	
Revised PDD version 07, dated 31/05/2011	
Information Verified by Lead Assessor:	
Revised PDD version 07, dated 31/05/2011	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 10/07/2012
<p>Revised PDD has been reviewed and found that the justification regarding the project technology description are elaborated which is in line with the requirement of SSC PDD guideline.</p> <p>However the PP is required to provide proper information on the capacity of the Project activity and substantiate the same against objective and credible documentary evidence.</p> <p>CAR 05 remains open.</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 10/07/2012
Project Participant Response:	Date: 18/07/2012
<p>As the construction works for stage 1 is going on since February 2012 the project is announced at the official web site of the Ministry of Energy and Development www.menr.gov.ge/en/4494 confirming the installed capacity of 8 MW and 50 GW/hr yearly productions. In addition the construction permits of the Kasbegi municipality are providing the same evidence on the installed capacity of 8 MW.</p>	
Documentation Provided by Project Participant:	
<p>Ministry of Energy and Development: www.menr.gov.ge refer to Investors page: ongoing investment projects : project No 7 “Aragvi HPP”.</p> <p>Construction permit of Kasbegi Municipality for the land use and road construction as per enclosure</p>	
Information Verified by Lead Assessor:	
<p>Ministry of Energy and Development : www.menr.gov.ge refer to Investors page: ongoing investment projects : project No 7 “Aragvi HPP”</p> <p>Construction permit of Kasbegi Municipality for the land use and road construction as per enclosure.</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 24/07/2012
<p>It has been checked in the official website www.menr.gov.ge/en/4494 in the On-going investment projects, project No 7 “Aragvi HPP, the installed capacity of the project is 8MW with the annual production of 50 GWh/year of electricity. However, as stated in the PDD section A.4.2, the total capacity of the project is 9.2 MW (8 MW for the first Stage and 1.2 MW for the second stage). Please clarify that on the evidence of remaining 1.2MW capacity.</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 24/07/2012
Project Participant Response:	Date: 14/09/2012
Please see enclosed the Declaration letter of Energo Aragvi regarding the installed capacity.	
Documentation Provided by Project Participant:	
<p>PPA signed by PP with Grid utility, Electricity system Commercial Operator dated 14/12/2007</p> <p>Signed MoU between PP and Government of Georgia</p>	
Information Verified by Lead Assessor:	

PPA signed by PP with Grid utility, Electricity system Commercial Operator dated 14/12/2007 Signed MoU between PP and Government of Georgia in the year 2007. Declaration from the PP about regarding the installed capacity dated 22/08/2012.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 14/09/2012
The MoU signed between PP and Government of Georgia in 2007, it was agreed to construct a hydropower project at Aragvi river a cascade with 2 hydro power plants: Stage I and stage II. Because of the financial problems, PP had started the construction for stage I (8MW) only. Likewise, it has signed the MoU and PPA for 8MW only, the construction for the remaining 1.2 MW will be taken up later and subsequently all the relevant consents will be applicable thereafter. The project being a future project is considered acceptable. The Project Design Report dated June 2010 submitted by PP has categorically included information on the capacity for the Stag-II part of the project as 1.2 MW. Hence, the cumulative capacity of the power plant is hereby accepted as 9.2MW. Hence CAR05 was closed out.	
Acceptance and Close out by Lead Assessor: Closed	Date: 14/09/2012

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CAR	Number:	06	Reference:	A.3.2
Lead Assessor Comment:					
Annex 1 of PDD is not complete and is not consistent with section A.3 of PDD					
Project Participant Response:				Date: 16/03/2009	
Company Information on the Annex will be filled out by the Energo Aragvi Ltd and submitted in short time					
Documentation Provided by Project Participant:					
PDD Version 4 dated 16/03/2009					
Information Verified by Lead Assessor:					
The PDD Version 4 dated 16/03/2009 Annex 1 & Section A.3					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/06/2009	
The revised PDD has been verified and section A.3 and Annex 1 has been verified The PP still has some extra information where as Annex 1 is strictly for project participants. CAR06 is still open					
Acceptance and Close out by Lead Assessor: Open				Date: 18/06/2009	
Project Participant Response:				Date: 14/07/2009	
Please see the updated PDD.					
Documentation Provided by Project Participant:					
PDD version 4, dated 16/03/2009					
Information Verified by Lead Assessor:					
PDD version 4, dated 16/03/2009 (PP had not updated version and date of PDD)					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 11/08/2009	
Section A.3 and Annex 1 is not in line.					
Acceptance and Close out by Lead Assessor: Open				Date: 11/08/2009	
Project Participant Response:				Date: 27/08/2010	
At present the project participant is the Energo Aragvi (host party) being the investor and concession holder for the project. Clean Energy Solutions has been engaged by Energo Aragvi to prepare the necessary design works (Project Design) to be responsible for the financial engineering including validation and registration within UNFCCC. The project participant list was updated many times and all the relevant information is given in the PDD.					
Documentation Provided by Project Participant:					
PDD version 05 dated 27/08/2010					
Information Verified by Lead Assessor:					
PDD version 05 dated 27/08/2010					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 28/08/2010	

<p>As per Glossary of CDM terms (ver.5) available at http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf <i>"... a project participant is ... a private and/or public entity authorized by a Party involved to participate in a CDM project activity. In accordance with Appendix D of the CDM modalities and procedures, the decision on the distribution of CERs from a CDM project activity shall exclusively be taken by project participants."</i> In case of the proposed project, the Letter of Approval (LoA) and the Letter of Endorsement from the "Minister of Environment Protection and Natural Resources of Georgia" are showing the name of the project participant as "Energo -Aragvi Ltd." Thus it is clear that the project participant is "Energo -Aragvi Ltd". In connection with this "Clean Energy Solutions" (CES) is the project developer on behalf of "Energo -Aragvi Ltd", but there is no relation established with the Host Country "Georgia" and CES directly. The contract with SGS to validate the captioned project activity is only with "Clean Energy Solutions" not with "Energo -Aragvi Ltd". Therefore, no link is observed between the project participant and validating DOE - "SGS". However, DOE (SGS) should have a contractual relationship with the project participants (para 7 of Annex 48, EB 50). This is a critical discrepancy. Furthermore, in the webhosted PDD both companies' names were included as project participants (Energo - Aragvi Ltd & Clean Energy Solution) and SGS raised one finding in the form of CAR 06 on 02/08/2008, the project participant replied with the revised PDD without the name of "Clean Energy Solutions" in Section A.3 on 18/06/2009. This is in compliance with LoA dated 18/11/2009 and the webhosted PDD which both mention Energo-Aragvi Ltd, but it is not in line with the signed contract with SGS due to the requirement of EB50, Annex-48 published on 16/10/2009. CAR 06 was closed on 11/08/2009, prior to the LoA and EB50 report. So no confusion has been created from SGS side. Thus, there are two options to proceed with the validation: 1. The name of "Clean energy Solution" as a project participant in both the LoA and the list of PPs in the PDD shall be indicated to go ahead with the effective signed contract with SGS for further validation of this project activity and till that date CAR 06 is OPEN. 2. The letter of voluntary withdrawal is required from Clean Energy Solutions. In this case according to para 9 of Annex 48, EB 50 DOE (SGS) "...may recommence the validation activity through a new or revised contract with a different set of project participants (in our case it is Energo-Aragvi Ltd) by: (a) Indicating that the first validation contract has been terminated in accordance with paragraph 18(a) below; and (b) Republishing the PDD or a revised PDD for global stakeholder consultation."</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 28/08/2010
Project Participant Response:	Date: 16/11/2010
<p>From our point of view there is no other possibility to include CES-Clean Energy Solutions as a Project Participant and go ahead with the present contract. We Will take care immediately to adjust the PDD accordingly and to revise the existing LOA.</p>	
Documentation Provided by Project Participant:	
PDD version 06 dated 16/11/2010	
Information Verified by Lead Assessor:	
PDD version 06 dated 16/11/2010	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/11/2010
<p>PDD version 06 was checked and found that under section A.3, Clean Energy solution GmbH still remains included as a Project Participant and likewise consistently under Annexe 1. Thus the PP requires to provide comprehensive and unambiguous information towards the Project Participant under section A.3 of the PDD and likewise in the further section in particular Annex 1 of the PDD. CAR 06 remains open.</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 18/11/2010
Project Participant Response:	Date: 18/07/2012
The PDD was updated and CES was removed as project participant.	
Documentation Provided by Project Participant:	
Revised PDD version 7 dated 31/05/2011	
Information Verified by Lead Assessor:	
Section A.3 and further annex 1 of the revised PDD version 7 dated 31/05/2011	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 24/07/2012

Project participant has been reported correctly under section A.3 and further annex 1 of the revised PDD version 7 dated 31/05/2011. Revised and updated version of the PDD dated 31/05/2011 was checked and found to have removed Clean Energy Solutions from the Project participant's list under section A.3 and further Annex 1 of the document. Thus the project will proceed as unilateral project which is hereby considered accepted and thus CAR 06 is closed out.	
Acceptance and Close out by Lead Assessor: Closed	Date: 24/07/2012

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CAR	Number:	07	Reference:	A.4.3
Lead Assessor Comment:					
The description is not clear and consistent. In the description under section A.4 of PDD in some places it is mentioned that scheme is implemented in two stages and in some places as three stages. It is mentioned that Francis Turbines will be used in Stage I and Pelton Turbines used in Stage II and Stage III but in the table under technical description the turbine type is given as Pelton in both stages. In the description it is given as 8.9 MW of installed capacity. But in the table given under stage I and II the total capacity is not adding to 8.9 MW.					
Pursuant to presented Feasibility study cl. 10.4 there are two stage of project proposed to be financed. According to Project Summary Information presented by Clean Energy Solutions company the total installed capacity of proposed HPP is equal to <u>7.7 MW</u> . Project envisages installation of two identical Pelton turbines with maximum capacity of 4 MW. Please adjust the project description in PDD accordingly and identify the total capacity of projected HPP precisely.					
Project design report submitted to SGS reflects the following technical parameters for project: 1stage - two turbines with installed capacity of 8.0 MW and annual power production of 50.6 GW/h 2 stage – single turbine with installed capacity of 1.2 MW and annual power production of 9.3 GW/h It roughly corresponds to technical specification of project in revised PDD sec.A.4.					
Project Participant Response:				Date: 14/07/2009	
There is a mistake in the project description due to the first version where three stages would be implemented. In the final layout only 2 stages will be implemented (See above). It will be updated on the PDD.					
Documentation Provided by Project Participant:					
1/Project Design Report 090529_Gudauri_Project_Design_Report.doc 2/ revised PDD 16032009_PDD_Gudauri_Changes.doc					
Information Verified by Lead Assessor:					
1/Project Design Report 090529_Gudauri_Project_Design_Report.doc 2/ PDD version 04 dated 16/03/2009					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 14/07/2009	
Pending CAR05 closure					
Acceptance and Close out by Lead Assessor: Open				Date: 14/07/2009	
Project Participant Response:				Date: 14/09/2012	
The revised PDD has been attached.					
Documentation Provided by Project Participant:					
Revised PDD, version 10 dated 18/07/2012					
Information Verified by Lead Assessor:					
Revised PDD, version 10 dated 18/07/2012.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 14/09/2012	
Revised PDD has been reviewed and found that the justification regarding the project technology description are elaborated which is in line with the requirement of SSC PDD guideline. Hence accepted. CAR 07 was closed out.					
Acceptance and Close out by Lead Assessor: Closed				Date: 14/09/2012	

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CL	Number:	08	Reference:	B.12.3
Lead Assessor Comment:					
The PDD doesn't discuss about the training needs for the project activity and also about the provisions made for training.					
Project Participant Response:				Date: 16/03/2009	
Training was included in the Annex to the PDD					
Documentation Provided by Project Participant:					
PDD version 04 dated 16/03/2009					
Information Verified by Lead Assessor:					
PDD version 04 dated 16/03/2009					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/04/2009	
Accordingly with document "Training for Operation and Maintenance" issued by Clean Energy Solutions project owners declare that staff shall be trained by Austrian specialists in daily operation. Trainings proposed to be conducted in Austria after the operation staff will be embodied.					
Accordingly to above mentioned declaration the program of training shall include following matters:					
<ul style="list-style-type: none">• Operation of plant under normal & abnormal conditions.• Industrial safety					
There is no evidence to gain a confidence that operational staff will obtain all necessary skills to operate new equipment and to fulfil the monitoring plan. Please provide one of the following docs:					
<ul style="list-style-type: none">○ certificates of qualification (in the case when trainings has already been performed);○ signed contract for training, or○ relevant clauses of equipment supply contract					
in order to confirm obligations to perform training of operational staff.					
Acceptance and Close out by Lead Assessor: Open				Date: 06/04/2009	
Project Participant Response:				Date: 14/07/2009	
Sign Contract for training is provided. See attached documents					
Documentation Provided by Project Participant:					
Contract for Technical assistance dated 18/03/2009					
Information Verified by Lead Assessor:					
1/Contractual obligation to provide training of operational staff agreement for Technical assistance for the project concluded between Energo-Aragvi Ltd and Werner Johannides dd. 18/03/2009					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 14/07/2009	
To confirm the staff will undergo necessary operational training PPs has submitted the agreement for Technical assistance for the project concluded between Energo-Aragvi LTD and Werner Johannides (consultant). Pursuant to this contract the Consultant is obligated to provide the training of operational staff and the technical assistance during start-up phase. All the aforementioned documents were verified and cross checked. The fact that the technical assistance for the project executed between Energo-Aragvi Ltd and the consultant was checked against the original true copy of the agreement and found correct. Thus accepted. Therefore, CL 08 was closed out.					
Acceptance and Close out by Lead Assessor: Closed				Date: 14/07/2009	

Date:	02/08/2008		Raised by:	Assessment Team		
Type:	CAR	Number:	09	Reference:	A.5.1	
Lead Assessor Comment:						
As per PDD there is no public funding involved in the project activity. Documentary evidence needs to be provided.						
Project Participant Response:				Date: 16/03/2009		

Presently there is no possibility in Georgia to receive public funding for a private investment in Small Hydropower Developments.	
Documentation Provided by Project Participant:	
No document provided.	
Information Verified by Lead Assessor:	
No document provided.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 06/04/2009
Please provide relevant documentary evidences confirming that public funds is not used and will not attracted in future for project financing.	
Acceptance and Close out by Lead Assessor: Open	Date: 06/04/2009
Project Participant Response:	Date: 03/06/2009
Official declaration from the project owners is provided. See attached documents.	
Documentation Provided by Project Participant:	
Declaration of absence of public funds attracted to project financing. Declaration #1-06-09 dd.01/06/09 signed by five Energo-Aragvi executives.	
Information Verified by Lead Assessor:	
Declaration of absence of public funds attracted to project financing. Declaration #1-06-09 dd.01/06/09 signed by five Energo-Aragvi executives.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/06/2009
All the aforementioned documents were verified and cross checked. PP is however was requested to include the relevant details in the PDD.	
Acceptance and Close out by Lead Assessor: Open	Date: 26/07/2011
Project Participant Response:	Date: 23/04/2012
The PDD has been revised as per the requirement.	
Documentation Provided by Project Participant:	
PDD version 9 dated 23/04/2012	
Information Verified by Lead Assessor:	
PDD version 9 dated 23/04/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 24/07/2012
The revised PDD was checked and found to include the relevant details transparently, hence accepted. Thus, CAR 09 was closed out.	
Acceptance and Close out by Lead Assessor: Closed	Date: 24/07/2012

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CAR	Number:	10	Reference:	A.6.1
Lead Assessor Comment:					
As per PDD the project is not a de bundled component of large scale project activity. But proper justification is not given in PDD.					
Project Participant Response:				Date: 16/03/2009	
Gudauri is a small hydropower scheme and there is no large scale hydropower scheme is planned in the region. As it is a green field project and total capacity will be less than 15 MW.					
Documentation Provided by Project Participant:					
PDD version 04 dated 16/03/2009					
Information Verified by Lead Assessor:					
PDD version 04 dated 16/03/2009					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/04/2009	
Please provide actual official information on Georgian State investment programs that are realising in energy sector with references or links to open information sources if possible. Otherwise please submit the official note from Local Authorities (Ministry of Finance, Regional administration etc.) to confirm the absence of public financing of project.					

Acceptance and Close out by Lead Assessor: Open	Date: 06/04/2009
Project Participant Response:	Date: 03/06/2009
Information on Georgian State investment programs can be found on http://www.minenergy.gov.ge/	
Documentation Provided by Project Participant:	
Web link: http://www.minenergy.gov.ge/	
Information Verified by Lead Assessor:	
The description of the proposed project activity was checked from the details posted at the official web site of the Ministry of Energy and Natural Resources of Georgia (http://www.minenergy.gov.ge/).	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/06/2009
Official site of ministry of Energy of Georgia does not contain any of information that could allow to suppose the project to be a part of any other larger scale activity.	
Acceptance and Close out by Lead Assessor: Open	Date: 18/06/2009
Project Participant Response:	Date: 14/07/2009
Official website of Georgian Ministry of Energy has been provided.	
Documentation Provided by Project Participant:	
http://www.minenergy.gov.ge/	
Information Verified by Lead Assessor:	
The description of the proposed project activity was checked from the details posted at the official web site of the Ministry of Energy and Natural Resources of Georgia (http://www.minenergy.gov.ge/).	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 14/07/2009
The aforementioned web link was checked and found that the project is not a part of any other project activity. Thus accepted. Hence CAR 10 was closed out.	
Acceptance and Close out by Lead Assessor: Closed	Date: 14/07/2009

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CAR	Number:	11	Reference:	B.4.2
Lead Assessor Comment:					
Even though it is a small scale project, “Tool for the demonstration and assessment of additionality” has been used to demonstrate additionality. But version 04 of the tool has been used which is not the latest version. As per PDD the only alternative to the project activity is to put up a new thermal power plant. Justify with documentary evidence. Also the alternative discussed in step 1a and step 2 b of additionality discussion is not consistent.					
Project Participant Response:				Date: 16/03/2009	
The version regarding the Tool will be updated in the latest PDD. Regarding the additionality it is mentioned that an alternative to Project Owner would be to invest his resources in his core business. The alternative regarding Thermal Power Plants is that the Georgian Government could invest in new fossil thermal plants to meet the increasing demand for energy. As small hydropower developments investments will be carried out mostly by private businesses the alternative in this case would be to invest in the core business. The risks and barriers in small hydropower development would prevent the Project Owner from this investment.					
Documentation Provided by Project Participant:					
PDD version 04 dated 16/03/2009					
Information Verified by Lead Assessor:					
PDD version 04 dated 16/03/2009					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/04/2009	
Please provide evidence/explanation in terms of quantified values. It is requested that the participant replies the queries with objective evidence. Please provide all evidences for assumptions and also submit the spreadsheet for analysis. The investment analysis should be in line with EB 41 Annex 45.					
Acceptance and Close out by Lead Assessor: Open				Date: 06/04/2009	
Project Participant Response:				Date: 03/06/2009	

The additionality of the project is assessed using the UNFCCC's simplified modalities for small scale project activities as described in Attachment A to Appendix B. Therefore an investment analysis is not necessary. Based on average rates and data we have conducted the investment analysis only to show the importance of the CDM for the project.	
Documentation Provided by Project Participant:	
Revised PDD version 4 dated 16/03/2009	
Information Verified by Lead Assessor:	
Revised PDD version 4 dated 16/03/2009 (PP has not revised the version and date of PDD)	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/06/2009
The PP is requested to provide all relevant information as per EB41 Annex 45. The time of the investment decision is critical. Also an arbitrary statement on Financial barrier is unacceptable. PPs have not submitted necessary evidences to confirm additionality. CAR11 stands open	
Acceptance and Close out by Lead Assessor: Open	Date: 18/06/2009
Project Participant Response:	Date: 14/07/2009
Regarding the requested information as per EB 41 Annex 45 please refer to the enclosed summarised investment analysis and the updated PDD. Furthermore enclosed the MoU with Georgian government and the Lol with VA Tech Finance.	
Documentation Provided by Project Participant:	
The Lol from VA Tech Finance PDD version 04 dated 16/03/2009	
Information Verified by Lead Assessor:	
The Lol from VA Tech Finance is the year 2007 whereas the PDD states that the time of investment is in 2006 PDD version 04 dated 16/03/2009 (PP has not revised the version and date of PDD)	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 14/07/2009
The Lol from VA Tech Finance is the year 2007 whereas the PDD states that the time of investment is in 2006, the PP is requested to justify how the investment figures considered for the financial analysis are appropriate and how they follow the EB41 Annex 46 guidelines. CAR11 is open.	
Acceptance and Close out by Lead Assessor: Open	Date: 14/07/2009
Project Participant Response:	Date: 24/11/2009
The project history is as follows: In 2006 the investment decision for Gudauri Project was decided. Then the necessary study to establish the most economic layout and a detailed feasibility study, the basis for negotiation with project financiers and detailed engineering design. In 2007 negotiations with investors started and it became obvious that only if the project will be registered as CDM project, international financing could be made available. The investments cost for the civil works and the equipment are based on experience of similar project and pretender information from supplier and local companies. In parallel to project validation Aragvi Company went ahead with obtaining the necessary permits and the completion of the detailed design engineering. All the necessary tender documents for ICB have been prepared and will be issued for bidding as soon as financial closure is done. See detailed cost calculation included in the submitted feasibility study. We have followed the guideline of Annex 45 and please find enclosed our financial model based on the signed power purchase agreement the calculated yearly energy production and the estimated total investment costs.	
Documentation Provided by Project Participant:	
PDD version 04 dated 16/03/2009	
Information Verified by Lead Assessor:	
PDD version 04 dated 16/03/2009 (PP has not revised the version and date of PDD)	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 04/03/2010

In particular, PP built its argument by indirectly comparing the equity IRR of the project with the interest rate (financing rate).

This present some imprecision that are necessary to address. Firstly, IRRs should be compared with a relevant benchmark rate. In this case, given the fact the PP presents equity IRR, this should be compared with a leveraged cost of capital discount rate. Although the 18% interest rate has been validated as a correct value for financing projects in the host country, this does not represent a good estimation of the cost of capital of a leveraged project, and it is in fact a debt rate.

Secondly, PP shows figures for 'IRR before taxes', and 'IRR after taxes and financing'. It is necessary that PP show 'IRR after taxes financing and loan repayments' in order to make them comparable with the correspondent leveraged cost of capital that is being suggested.

'IRR after taxes and financing' should be removed. Alternatively, PP could present a pure or unleveraged analysis, with 'unleveraged IRR after taxes' being compared with 'unleveraged cost of capital benchmark rates'. Ideally, the new argument of additionality should be discussed in the PDD, including IRRs and discount rates figures. All relevant assumptions for estimating the leveraged cost of capital should be explained and justified, including risk free returns, risk premiums, unleveraged or leveraged betas, and any other key assumptions made.

Thirdly, no continuity values has been considered in the cash flows.

Given the fact that project cash flows will last longer than the investment evaluation period, continuity or at least residual values should be considered at the end of the evaluation period.

Fourthly, a sensitivity analysis should be carried on. This sensitivity analysis of key assumptions and results should be included and discussed in the PDD, and also included and backed up with the relevant spread sheets, and tables.

Project Design Document indicated as the evidence for sources of assumption for IRR calculation. Approved version of the project design document is kindly requested to substantiate the assumptions.

Acceptance and Close out by Lead Assessor:
Open

Date: 04/03/2010

Project Participant Response:

Date: 27/08/2010

The project design report has been developed by CES following international standards and regulations and different solutions have been discussed with Energo Aragvi which is the investor and Concession holder of the project. This study has been approved by the Client (Energo Aragvi). See letter from Energo Aragvi submitted to SGS on 15.07.2009.

The IRR given in PDD are only for Information as we wanted to present the project in a very transparent form as the Gudauri project will be a pilot project for Georgia. Therefore no comparisons with the interest rates were made. The interest rates were mentioned to describe the financial difficulties for Aragvi company facing in Georgia to close the financing. The financing closure is the main barrier which makes the project additional and it can be ensured only if the project will be registered within the UNFCCC as CDM project. From the results of the financial analyses it can be seen that the project is economic attractive and based on the sensitivity analysis is also very stable. Presently in Georgia there is no long term financing from the local banks available and therefore international financing is a must.

Regarding your comments we have conducted a sensitivity analysed which you will find enclosed and the summary was added in the PDD.

Documentation Provided by Project Participant:

PDD version 05 dated 27/08/2010

Information Verified by Lead Assessor:

PDD version 05 dated 27/08/2010

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 28/08/2010

<p>My interpretation is that the PP is abandoning the investment analysis as a justification for additionality and shifting towards a financial barrier analysis.</p> <p>If that is the case, I do not really see evidence for or against the argument of lack of domestic financing as a financial barrier. The PPs argues that in Georgia there is no access to long term financing, and discusses the conditions for project financing with VA Tech Finance.</p> <p>Firstly, I share the view that access to long term financing in Georgia its at least very costly (based on the link used as reference),</p> <p>Please provide evidence on the long-term loans availability based on independent review.</p> <p>Still assuming that the argument is shifting to a financial barrier, I am not clear if the PP should mention the IRR of the project in the PDD discussion. I am guessing they are trying to build the case with some objective figures. The problem with this, however, is that the calculations in the excel file for me are still not clear. They calculate IRRs and ROEs in the excel sheet mixing equity and project indicators, and although we already ask them to use more standard ways of calculation.</p> <p>Although the loan repayment is programmed at 25 years. The cash flows considered only 16 years of interest payments, why is this?</p>	
Acceptance and Close out by Lead Assessor:	Date: 28/08/2010
Open	
Project Participant Response:	Date: 16/11/2010
<p>Since several years Energo Aragvi Ltd tried to find project financing in Georgia. Initially the project participant approached to the Basis Bank but finally the Bank refused and could not provide the required loans which brought Energo Aragvi Ltd to a really financial crisis and to stop further activities. In such scenario project participant came to know the benefit of CDM and initiated this small scale hydro power project considering the CDM revenue.</p> <p>After considering and understanding on CDM being a very helpful programme to support renewable energy projects in Developing Countries several discussions with international Financing Institutions started again. VA-Tech Finance from Austria finally agreed to assist in financing under the conditions Gudauri Project will be registered with UNFCCC to use the certificates as cash flow for the loan repayment to reduce the risks considerably. Komunalkredit from Austria signed an agreement with Energo Aragvi Ltd to purchase the issued certificate which will be used as collateral for part of the project credit. The detailed analysis on the project activity which could not access appropriate capital without consideration of the CDM revenues has been discussed in the CDM chronology section.</p> <p>Under the consideration that Gudauri Project will be registered at the CDM programme as precondition for the financial closure Energo Aragvi has prepared all necessary documentations and obtained all permits to start with the civil works in July 2011 and with the procurement orders for the E&M equipment and penstock pipes in September, 2011.</p>	
Documentation Provided by Project Participant:	
Revised PDD version 06, dated 16/11/2010	
Information Verified by Lead Assessor:	
Revised PDD version 06, dated 16/11/2010	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/11/2010

The proposed project activity is a small scale project and as per EB 35, annex 34 guidelines project participant carried out the Non-binding best practice examples to demonstrate additionality for the current SSC project activities. Thus the current project activity does not require using Additionality Tool, version 5.2

According to the EB 35 Annex 34, the project participant shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers i.e. Investment barrier, Access-to-finance barrier, Technological barrier, Barrier due to prevailing practice and other barriers. In accordance with the stated requirement project participant demonstrates additionality by discussing Access-to-finance barrier.

IRR calculation is now removed from the previous version of PDD.

The project participant was unable to raise funds for the Phase-I, 8 MW Hydro Power project on all occasions when it has approached a bank or a financial institution (FI) with the application for loan to fund the project activity, the same had outright been rejected by the Basis Bank in the year of 2006. The reason behind the rejection of the loan is the non availability of the long term financing module in the country like Georgia. In addition to this financing from a bank in this region is possible only with the security deposit of collaterals.

After the rejection from the Basis Bank, the project participant approached to VA TECH Finance with the implementation plan of Hydro Power Project in the Gudauri Region. The bank replies to project participant that the project must be implemented as CDM project under Kyoto Protocol in the year 2007. In the same letter VA TECH Finance agrees to provide the loan of 75% of the total project value and rest 25% to be arranged by the project participant. Looking at the positive feedback project participant from the VA TECH Finance project participant went for the Power Purchase Agreement in the year of 2007 itself. Project Participant hired the DOE for the validation of the proposed project activity under scheme of CDM within the framework of the Kyoto Protocol. Project participant signed the contract with DOE in the year 2008 after the second letter from the VA TECH Finance which says the four clauses to be fulfilled to get the finance.

As a result of the above the project participant had failed to gather funds required and thus the project activity implementation was not feasible. Till date the project financial closure was not performed due to the risk of the financial assistance. However the project participant floated all the required tender documents and received the offers from the manufactures but not yet finalized due to the four clauses as mentioned in the VA TECH Finance letter dated 12th March 2008.

Under the above circumstances in which there was no access to capital required to implement the project activity, there was no way the project financing could be obtained. It was at this point of time that the project participant was approached by a CDM consultant whose feasibility study suggested that the project activity could be implemented as a CDM project with the UNFCCC and that it has potential to earn carbon credits under CDM. Thus consequent to the discussions with the CDM consultant, when the project participant approached the financial institutions with the proposal to implement the project activity as a CDM project activity, the financial institutions could finally be convinced of the viability of the project based on the added revenue from CDM.

However, PP is requested to clarify that following:

6. Source of project cost stated as 8.2 million USD as mentioned in the PDD under section B.5 against the objective evidence. Further, PP is requested to clarify why it has considered as a "very high capital investment".
7. PP is requested to clarify the details of the project implementation activity under section B.5 of the PDD and whether there was a re-initiation of implementation of the project activity based on earlier investment decision and subsequently ceased due to non-availability of the project fund. PP is requested to justify the same in line with Para 67 of EB 41.
8. PP is requested to clarify whether the financial closure for the proposed project activity has been achieved and based on which fund PP has initiated the implementation of the proposed project activity.
9. PP is requested to clarify the timeline line for the several rounds of discussions with VA-Tech Finance, as stated under section B.5 of the PDD with objective evidence.
10. PP is requested to clarify on the timeline on CDM consideration and signing of the DOE for the validation service transparently under section B.5 of the PDD.

Acceptance and Close out by Lead Assessor: Open	Date: 01/12/2012
Project Participant Response:	Date: 03/12/2012

1. The objective evidence of the total project cost is now been revised as 11 million USD as available in the government level information <http://www.menr.gov.ge/en/4758> has now been included under section B.5 of the PDD.
2. There has been no re-initiation in the implementation of the project activity. Hence, EB41, para 67 is not applicable in this regard. Energo-Aragvi decided to invest in the Gudauri hydropower project and in this regard a loan application letter was submitted in 21/09/2006 to JSC Basisbank. However after several rounds of discussion with JSC Basisbank, bank had issued loan request disapproval letter on 04/10/2006 which brought Energo-Aragvi to a real time financial crisis. The board finally decided to undertake the project considering CDM benefits and likewise the board meeting in this regard took place on 11/10/2006. Energo Aragvi Ltd has approached VA-Tech Finance GmbH, the Financial Institution, with the implementation plan of the proposed power project activity. A formal loan application letter in this regard was sent to VA-Tech Finance GmbH dated 12/02/ 2007. VA-Tech Finance has expressed an interest to finance 6.75 million USD (approximately 75% of the total project cost) subjected to the registration of the proposed project activity under CDM registry. VA-Tech Finance from Austria finally agreed to assist in financing under the conditions that the proposed project will be registered with UNFCCC to use the CER certificates as cash flow for the loan repayment to reduce the risks considerably. Due to the lack of capital, PP is unable to initiate the project on 100% equity as it is a high capital investment considering PP's exposure on the project. However, the same has been rephrased under section B.5 for more clarity with relevant supportive.
3. PP would requested to clarify that the till date the project has not achieved the financial closure. Based on the 25% equity of the total project cost, Energo-Aragvi had initiated the implementation of the project activity as PP needs to achieve the financial closure which will only happen with the registration of the project activity under CDM and thereafter issuance of the CERs. As per the pre-conditional clauses of VA-Tech finance, the registration and thereafter sale of CERs to a reputable CER off-taker is a mandatory requirement for the financial institution to avail the 75% of the project cost. The same has been mentioned in the revised PDD.
4. The revised PDD has been updated with relevant supportive under section B.5 regarding the timeline of the discussions with VA-Tech finance.
5. The same has now been revised in the revised PDD, version11.

Documentation Provided by Project Participant:

1. Revised PDD, version 11 dated 03/12/2012
2. LoI issued by VA-Tech Finance GmbH ref no: PA dated 12/03/2008
3. Minutes of the meeting of the Energo-Aragvi Ltd's shareholder dated 11/10/2006

Information Verified by Lead Assessor:

Revised PDD, version 11 dated 03/12/2012, LoI issued by VA-Tech Finance GmbH and Minutes of the meeting of the Energo-Aragvi Ltd's shareholder dated 11/10/2006 was checked against the requirements of VVM 1.2, para 82.

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 03/12/2012

The revised PDD, version 11 dated 03/12/2012 was checked and found to contain the information.	
5.	The project cost of 11 million USD as stated in the revised PDD, version 11 dated 03/12/2012 now included based on the objective evidence as available in the website of Ministry of Energy and Natural Resources of Georgia (http://www.menr.gov.ge/en/4758) under heading of Aragvi HPP. The same was checked and found correct and hence is accepted.
6.	The revised PDD, version 11 dated 03/12/2012 now transparently includes the implementation plan under section B.5 of the PDD. The PDD transparently states that there was no re-initiation in the implementation of the project activity. PP had proceed with the 25% of the project cost which is the equity component of the total project cost to start with the implementation plan. As the project finance is dependent on the registration of the project under CDM and sale of CERs through signing of ERPA to KPC, it was necessary for PP to move ahead with the implementation plan with the equity component of the total capital. The same was checked against the VA-Tech finance GmbH letter issued to PP ref no: PA dated 12/03/2012, where it has been clearly stated under preconditional clauses that the project will be financed subjected to the CDM registration and sale of CERs and found correct. Hence, accepted.
7.	The revised PDD has been checked and found to include the information transparently that the project financial closure is not yet achieved. PP has started the implementation of the project with the part of the project cost (25% of the total project cost) in order to implement the project and achieve the financial closure as stated in Lol letter issued from VA-Tech Finance GmbH which was checked and found correct, hence accepted.
8.	The detail timeline on the consideration of CDM and DOE signing has now been included transparently in the revised PDD, version 11 dated 03/12/2012 against the objective evidence of the original copy of board approval letter dated 11/10/2006 and signed DOE contract copy and hence accepted.
Acceptance and Close out by Lead Assessor: Closed	
Date: 03/12/2012	

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CAR	Number:	12	Reference:	B.4.6
Lead Assessor Comment:					
As per PDD the project faces investment barrier, technological barrier, financial barrier and Institutional barriers. As per PDD the present interest level is about 16 – 18% p.a. and the IRR is coming to around 8.4 % only. Provide reference for the basis on which the interest rate has been taken and also for the assumptions and data used in IRR calculation.					
As per PDD about 75% of total power generated in Georgia is contributed by hydro power plants. Then why not this project be considered as business as usual project needs to be justified with documentary evidence.					
Project Participant Response:				Date: 16/03/2009	
The interest rate indicated in PDD, are the interest rates to be paid in Georgia and they change rapidly especially in the situation now. These values are based on the project developer's experience and discussions with project stakeholders in Georgia. Due to high interest rates in Georgia we have to get international project financing to make the project economic viable.					
Documentation Provided by Project Participant:					
PDD version 04 dated 16/03/2009					
Information Verified by Lead Assessor:					
PDD version 04 dated 16/03/2009					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/04/2009	
It is requested that the participant replies the queries with objective evidence. CAR 12 remains open.					
Acceptance and Close out by Lead Assessor: Open				Date: 06/04/2009	
Project Participant Response:				Date: 03/06/2009	
There is special website http://www.nbg.gov.ge/index.php?m=306&lng=eng of the National Bank of Georgia. There is special graph "loans" which shows the current interest rates in Georgia.					
Documentation Provided by Project Participant:					
http://www.nbg.gov.ge/index.php?m=306&lng=eng					
PDD version 04 dated 16/03/2009					
Information Verified by Lead Assessor:					

<p>The prevailing commercial term loan interest rate for Georgia was checked with reference to the details mentioned in the official website of the National Bank of Georgia. (http://www.nbg.gov.ge/index.php?m=306&lng=eng). PDD version 04 dated 16/03/2009 (PP had not revised the version and date)</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	Date : 18/06/2009
<p>The benchmarking is not clear. Information source is not acceptable as it does not reflect interest rate that was actual at the time when investment decision was made and thus cannot be applied for additionality justification.</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 18/06/2009
Project Participant Response:	Date: 14/07/2009
<p>Please refer to the letter of Energo-Aragvi concerning the interest rates during the time of investment decision (end of 2006). Because of the financial situation in Georgia, Energo-Aragvi always considered CDM as the main factor to implement the SHPP Gudauri project. Following EB 41 Annex 46 item B see enclosed the letter from Energo-Aragvi. Furthermore for the financial closure on the international market it is a condition that the project will be registered as a CDM project. See enclosed LOI from VA Tech Finance. Due to the financial crisis and the very difficult conditions in Georgia by not getting local financing for the overall project, the board of PP Energo Aragvi has decided that the contracts for the procurement of all Electro mechanical equipments and penstock pipes can be done when overall financial closure for the project is available which is related with the registration of the project as CDM project. The critical pass for the project implementation is determined by the production, delivery and installation of electromechanical equipment which has to be imported. Therefore the final implementation plan has to be adjusted accordingly.</p>	
Documentation Provided by Project Participant:	
<p>(For reference see: http://www.nbg.gov.ge/uploads/loansinglisurad/annual_weighted_loans_interest_rates_lwreng.xls)</p>	
PDD version 04 dated 16/03/2009	
Information Verified by Lead Assessor:	
<p>The link was verified and it was verified that the information provided is OK PDD version 04 dated 16/03/2009 (PP has not updated PDD version and date)</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 14/07/2009
<p>The project activity involves the installation of a small scale hydro power project in the country Georgia. It is noteworthy that the activities under the project activity involve a very high capital investment. Without the aid of CDM revenue, the project participant is not in a position to make such a high investment for implementing the project activity. This is elaborated hereunder.</p> <p>Access-to-finance barrier: Since several years Energo Aragvi Ltd tried to find project financing in Georgia. Initially the project participant approached to the Basis Bank but finally the Bank refused and could not provide the required loans which brought Energo Aragvi Ltd to a really financial crisis and to stop further activities. In such scenario project participant came to know the benefit of CDM and initiated this small scale hydro power project considering the CDM revenue.</p> <p>After considering and understanding on CDM being a very helpful programme to support renewable energy projects in Developing Countries several discussions with international Financing Institutions started again. VA-Tech Finance from Austria finally agreed to assist in financing under the conditions Gudauri Project will be registered with UNFCCC to use the certificates as cash flow for the loan repayment to reduce the risks considerably. Komunal Kredit from Austria signed an agreement with Energo Aragvi Ltd to purchase the issued certificate which will be used as collateral for part of the project credit. The detailed analysis on the project activity which could not access appropriate capital without consideration of the CDM revenues has been discussed in the CDM chronology section.</p> <p>Under the consideration that Gudauri Project will be registered at the CDM programme as precondition for the financial closure Energo Aragvi has prepared all necessary documentations and obtained all permits to start with the civil works in July 2011 and with the procurement orders for the E&M equipment and penstock pipes in August 2011.</p>	
Acceptance and Close out by Lead Assessor: Open	Date: 14/07/2009
Project Participant Response:	Date: 18/07/2012

The revised PDD version 8 dated 14/02/2012 has been provided.	
Documentation Provided by Project Participant:	
Revised PDD version 08, dated 14/02/2012	
Information Verified by Lead Assessor:	
Revised PDD version 08, dated 14/02/2012 (PDD version and date not corrected)	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 24/07/2012
<p>The proposed project activity is a small scale project and as per EB 35, annex 34 guidelines project participant carried out the Non-binding best practice examples to demonstrate additionality for the current SSC project activities. Thus the current project activity does not require using Additionality Tool, version 5.2</p> <p>According to the EB 35 Annex 34, the project participant shall provide an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers i.e. Investment barrier, Access-to-finance barrier, Technological barrier, Barrier due to prevailing practice and other barriers. In accordance with the stated requirement project participant demonstrates additionality by discussing Access-to-finance barrier.</p> <p>IRR calculation is now removed from the previous version of PDD.</p> <p>The project participant was unable to raise funds for the Phase-I, 8 MW Hydro Power project on all occasions when it has approached a bank or a financial institution (FI) with the application for loan to fund the project activity, the same had outright been rejected by the Basis Bank in the year of 2006. The reason behind the rejection of the loan is the non availability of the long term financing module in the country like Georgia. In addition to this financing from a bank in this region is possible only with the security deposit of collaterals. After the rejection from the Basis Bank, the project participant approached to VA TECH Finance with the implementation plan of Hydro Power Project in the Gudauri Region. The bank replies to project participant that the project must be implemented as CDM project under Kyoto Protocol in the year 2007. In the same letter VA TECH Finance agrees to provide the loan of 75% of the total project value and rest 25% to be arranged by the project participant. Looking at the positive feedback project participant from the VA TECH Finance project participant went for the Power Purchase Agreement in the year of 2007 itself. Project participant hired the DOE for the validation of the proposed project activity under scheme of CDM within the framework of the Kyoto Protocol. Project participant signed the contract with DOE in the year 2008 after the second letter from the VA TECH Finance which says the four clauses to be fulfilled to get the finance. As a result of the above the project participant had failed to gather funds required and thus the project activity implementation was not feasible. Till date the project financial closure was not performed due to the risk of the financial assistance. However the project participant floated all the required tender documents and received the offers from the manufactures but not yet finalized due to the four clauses as mentioned in the VA TECH Finance letter dated 12th March 2008.</p> <p>Under the above circumstances in which there was no access to capital required to implement the project activity, there was no way the project financing could be obtained. It was at this point of time that the project participant was approached by a CDM consultant whose feasibility study suggested that the project activity could be implemented as a CDM project with the UNFCCC and that it has potential to earn carbon credits under CDM. Thus consequent to the discussions with the CDM consultant, when the project participant approached the financial institutions with the proposal to implement the project activity as a CDM project activity, the financial institutions could finally be convinced of the viability of the project based on the added revenue from CDM. Hence accepted.</p>	
Acceptance and Close out by Lead Assessor: Closed	Date: 24/07/2012

Date:	02/08/2008		Raised by:	Assessment Team		
Type:	CL	Number:	13	Reference:	B.7.3	
Lead Assessor Comment:						
Electricity generation of 50600 MWh/year has been assumed for first two years and 59900 MWh/year has been considered for the remaining years for the emission reduction calculation. The basis for these electricity generation figures is not clear from the excel sheet calculation provided.						
Project Participant Response:				Date: 16/03/2009		
There will be two stages implemented and at the third year the energy generation will increase as the second stage will get into operation.						
Documentation Provided by Project Participant:						

N/A	
Information Verified by Lead Assessor:	
Please provide evidence/explanation in terms of quantified values. It is difficult to interpret explanations vague	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 16/03/2009
It is requested that the participant replies the queries with objective evidence. CL 13 remains open	
Acceptance and Close out by Lead Assessor: Open	Date: 16/03/2009
Project Participant Response:	Date: 03/06/2009
Please see the Project Design Report	
Documentation Provided by Project Participant:	
Project Design Report	
Information Verified by Lead Assessor:	
Project Design Report dated June 2010 was checked.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/06/2009
As per Project design report the annual power production assumed to be equal to 50.6 GWh for stage 1 and 9.3 GWh - for stage 2. Consequently summarized stage 1 and stage 2 power output becomes equal to 59.9 GWh after stage 2 implementation. Please provide more details on PLF and the basis of assumption for the power production. A spreadsheet is requested so as a detailed analysis can be undertaken by the assessors. The report provided is too recent and cannot be related.	
Acceptance and Close out by Lead Assessor: Open	Date: 18/06/2009
Project Participant Response:	Date: 14/07/2009
At the SHPP Gudauri stage 1 two similar turbines will be installed and therefore the plant will operate for the full year. As for maintenance only one turbine will be stopped. For more details refer to the enclosed calculations on the energy production based on the flow duration curve of the river Aragvi.	
Documentation Provided by Project Participant:	
NA	
Information Verified by Lead Assessor:	
No document has been provided	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 14/07/2009
CAR13 is open. The participant is requested to provide clear documentation. Please provide a spreadsheet / source reference to where the word document implies to ensure clear understanding	
Acceptance and Close out by Lead Assessor: Open	Date: 14/07/2009
Project Participant Response:	Date: 24/11/2009
Please find enclosed our spreadsheet on energy production.	
Documentation Provided by Project Participant:	
spreadsheet on energy production	
Information Verified by Lead Assessor:	
spreadsheet on energy production	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 04/03/2010

PLF has been identified according PPs calculation:

For Gudauri SHPP two generating units will be installed. In this case any stoppage in the electricity production during the whole year is not planned except in case of force majeure (more than 100 years flood for instance). The relevant degrees of river development, river utilisation and plant utilisation are calculated in the enclosed hydrological study and are summarised below:

Degree of river development:

$$(Q_{\text{design}} * T) / \left(\int_0^{365} Q_{\text{River}}(d) dt \right) = (3.6 \text{ m}^3/\text{s} * 365 \text{ d} * 24 \text{ h} * 3600 \text{ s}) / (118.5 \text{ hm}^3) = 96\%$$

Degree of river utilisation:

$$\left(\int_0^{365} Q_{\text{Turbine}}(d) dt \right) / \left(\int_0^{365} Q_{\text{River}}(d) dt \right) = 98.55 \text{ hm}^3 / 118.5 \text{ hm}^3 = 83\%$$

Degree of plant utilisation / plant factor:

$$\left(\int_0^{365} Q_{\text{Turbine}}(d) dt \right) / (Q_{\text{design}} * T) = 98.55 \text{ hm}^3 / (4.0 \text{ m}^3/\text{s} * 365 \text{ d} * 24 \text{ h} * 3600 \text{ s}) = 78\% \text{ with the inverse}$$

value corresponding to a factor of 1.28.

The design discharge usually is the flow value which corresponds to the river discharge which is exceeded during 90 to 120 days per year. The design discharge of 3.6 m³/s corresponds to a river discharge exceeded during 120 days per year which is in the normal range.

The degree of river utilisation for the proposed plant is 83% which is in the normal range of 75 to 90%, the degree of plant utilisation at 78% is also in the internationally accepted range of 70 to 80%.

The PPs are requested to include this information into the PDD. The project participant is requested to provide the all sources of information/assumption to arrive at the aforementioned calculation. The assumption of plant load factor is not clear and requested to justify the plant load factor in terms of the EB Guidelines (EB 48, Annex 11)

Acceptance and Close out by Lead Assessor: Open	Date: 04/03/2010
Project Participant Response:	Date: 27/08/2010
Following the EB 48 Annex 11, the plant load factor has been determined by Clean Energy Solutions (engineering company) as a third party to the project participant Energo Aragvi Ltd. The plant load factor is based on the water discharge of the river. See hydrological studies and the conclusions specified in the feasibility study and project design report.	
Documentation Provided by Project Participant:	
Feasibility study and Project design report.	
Information Verified by Lead Assessor:	
Feasibility study and Project design report dated January 2010 was checked	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 28/08/2010
The feasibility study has been assessed in terms of plant load factor and found that the hydrological study was prepared by a third party consultant, which is in line with the EB48, Annex 11 and hence accepted. However, PP is requested to clarify the following:	
3. The basis and source of the ex-ante consideration to arrive Quantity of net electricity generation value has not been demonstrated under section B.6.3. of the revised PDD.	
4. PP is requested to clarify the " <u>most recent three years</u> " against which the OM has been considered as stated under section B.6.3. of the PDD.	
Acceptance and Close out by Lead Assessor: Open	Date: 01/12/2012
Project Participant Response:	Date: 03/12/2012

<p>1. The basis and source of the ex-ante consideration to arrive Quantity of net electricity generation value has now been demonstrated under section B.6.3. of the revised PDD, version 11.</p> <p>2. The “<i>most recent three years</i>” against which the OM has been considered as stated under section B.6.3. of the PDD is during the PDD webhosting. The same has now been updated in the revised PDD, version 11.</p>	
Documentation Provided by Project Participant:	
1. Revised PDD, version 11 dated 03/12/2012	
Information Verified by Lead Assessor:	
Revised PDD, version 11 dated 03/12/2012 was checked in line with VVM 1.2, para 91.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 03/12/2012
<p>3. The revised PDD, version 11 dated 03/12/2012 was checked and found to include the basis and source of the ex-ante consideration to arrive at the Quantity of net electricity generation value has now been demonstrated under section B.6.3. the same is now in line with the VVM 1.2, para 91 and hence is accepted.</p> <p>4. The “<i>most recent three years</i>” against which the OM has been considered as stated under section B.6.3. of the PDD, version 11 dated 03/12/2012 was during the PDD webhosting. The same was checked against the date of the PDD webhosting and the information available on grid emission factors in the public domain: http://moe.gov.ge/index.php?lang_id=ENG&sec_id=123 and found correct, hence accepted.</p>	
Acceptance and Close out by Lead Assessor: Closed	Date: 03/12/2012

Date:	02/08/2008		Raised by:	Assessment Team		
Type:	CAR	Number:	14	Reference:	B.9.1	
Lead Assessor Comment:						
As per PDD there are two separate meters available to monitor the export and import of power. But in the monitoring plan the same is not included. Hence in the data parameters monitored both export and import has to monitored and needs to be included in the monitoring plan and the net electricity supplied by the project activity can be calculated from which emission reduction achieved by the project activity can be calculated.						
Project Participant Response:				Date: 16/03/2009		
According to international regulations there have to be two independent meterings. Normally the electricity supply will be measured by the meter owned by the public grid owner.						
Documentation Provided by Project Participant:						
PDD version 4 dated 16/03/2009						
Information Verified by Lead Assessor:						
PDD version 4 dated 16/03/2009						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/04/2009		
It should be noted that the meth requirements reign supreme over any international regulations. Refer para 13 of the AMS ID, Version 13: “Monitoring shall consist of metering the electricity generated by the renewable technology.” CAR14 remains open.						
Acceptance and Close out by Lead Assessor: Open				Date: 06/04/2009		
Project Participant Response:				Date: 03/06/2009		
The parameters to be measured were updated in the PDD.						
The metering of the power supply are clearly regulated in the signed power purchase agreement. (See enclosed). In case of the power need for extraordinary cases SHPP Gudauri will get power from the grid like every customer.						
Documentation Provided by Project Participant:						
PDD version 4 dated 16/03/2009						
Information Verified by Lead Assessor:						
PDD version 4 dated 16/03/2009 (PP has not updated the PDD date and version)						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 14/07/2009		

CAR14 is open. The participant is required to justify why the gross generation is not monitored as per AMS ID, version 13.	
Acceptance and Close out by Lead Assessor: Open	Date: 14/07/2009
Project Participant Response:	Date: 24/11/2009
A part of the Gross Production will be used for the operation of the powerhouse and therefore it will be measured internally. Only the energy delivered to the grid will be measured. In our explanation we call it net production. The gross production of generating units will be monitored and measured within the new powerhouse. The energy demand for auxiliary equipment comes to calculated over the whole year to 1% of the total production whereby in winter in average 1.5 % and in summer 0.6 % of the total production is needed. The monitoring plan was updated in the enclosed revised PDD.	
Documentation Provided by Project Participant:	
PDD version 04 dated. 16/03/2009	
Information Verified by Lead Assessor:	
PDD version 04 dated. 16/03/2009 (PP has not updated the PDD date and version)	
Reasoning for not Acceptance or Acceptance and Close Out:	Date : 04/03/2010
According AMS.I.D v13, para 16, If fossil fuel is used the electricity generation metered should be adjusted to deduct electricity generation from fossil fuels using the specific fuel consumption and the quantity of fossil fuel consumed. Relevant monitoring information shall be described. PP is requested to clarify that how the updated PDD version 04 dd. 26/01/2010 includes monitoring of gross energy production, auxiliary demand, EG grid to project and net energy delivered to the grid.	
Acceptance and Close out by Lead Assessor: Open	Date: 04/03/2010
Project Participant Response:	Date: 27/08/2010
The PDD was updated following the AMS-I.D, version 15, which is valid since October 2009. Regarding the technical expert comment we want to emphasize that no fossil fuel will be used for electricity generation. All the other parameters will be monitored as per monitoring plan based on the AMS-I.D.	
Documentation Provided by Project Participant:	
Revised PDD, version 5 dated 27/08/2010	
Information Verified by Lead Assessor:	
Revised PDD, version 5 dated 27/08/2010	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 28/08/2010
"Monitoring shall consist of metering the net electricity supplied by the project activity to the grid. Measurement results shall be cross-checked with records for sold electricity. Hourly measurement and monthly recording are required." This is the requirement and hourly measurement and monthly recording is mandatory as per applied methodology. Please mention it for the monitoring of the electricity.	
Acceptance and Close out by Lead Assessor: Open	Date: 28/08/2010
Project Participant Response:	Date: 16/11/2010
The PDD has been revised in accordance with the guideline of the applied methodology.	
Documentation Provided by Project Participant:	
PDD version 06 dated 16/11/2010.	
Information Verified by Lead Assessor:	
PDD version 06 dated 16/11/2010.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 18/11/2010
Revised PDD has been checked and found in line with the applied methodology. However, PP is requested to clarify the source of the recorded data $EG_{facility,y}$ will be used for ER calculation. Further, PP is requested to clarify the measurement/ monitoring frequency of the parameter $EG_{facility,y}$ and the cross-check of the recorded data as per the requirement of applied methodology.	
Acceptance and Close out by Lead Assessor: Open	Date: 01/12/2012
Project Participant Response:	Date: 03/12/2012
The source of data used for the parameter $EG_{facility,y}$ will be plant log book recorded from the energy meter. The monitoring frequency of the parameter will be Continuously with monthly recording frequency.	
Documentation Provided by Project Participant:	

Revised PDD, version 11 dated 03/12/2012	
Information Verified by Lead Assessor:	
Revised PDD, version 11 dated 03/12/2012 was checked against VVM 1.2, para 123.	
Reasoning for not Acceptance or Acceptance and Close Out:	Date: 03/12/2012
The revised PDD, version 11 dated 03/12/2012 was checked in line with VVM 1.2, para 123 and found to include transparently the the source of the recorded data, measurement/ monitoring frequency of the monitoring parameter EG _{facility.y} . The same was now in line with the approved methodology and VVM 1.2, para 123 and hence is accepted. Thus CAR 14 was closed out.	
Acceptance and Close out by Lead Assessor: Closed	Date: 03/12/2012

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CAR	Number:	15	Reference:	B.12
Lead Assessor Comment:					
The PDD hasn't discussed anything about the project management team, responsibilities, training of monitoring personnel, reporting, internal audit and review procedures.					
Project Participant Response:				Date: 16/03/2009	
Please indicate if we should prepare an extra document as an Annex to the PDD.					
Documentation Provided by Project Participant:					
PDD version 04 dated 16/03/2009					
Information Verified by Lead Assessor:					
PDD version 04 dated 16/03/2009 (PP has not updated the PDD date and version)					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/04/2009	
Please read the guidelines and the VVM for further clarity. Typically Annex 4 is on issues related MP. CAR15 is open.					
Acceptance and Close out by Lead Assessor: Open				Date: 06/04/2009	
Project Participant Response:				Date: 03/06/2009	
It was updated in the PDD.					
Documentation Provided by Project Participant:					
Revised PDD, version 4 dated 16/03/2009.					
Information Verified by Lead Assessor:					
Revised PDD, version 4 dated 16/03/2009 (PDD date and version was not revised by the PP)					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/06/2009	
The PDD has the updated information and can be acceptable. These will also be reviewed during later stages to see that this is in compliance. Hence CAR 15 was closed out.					
Acceptance and Close out by Lead Assessor: Closed				Date: 18/06/2009	

Date:	02/08/2008 /		Raised by:	Assessment Team		
Type:	CAR	Number:	16		Reference:	B.14.1
Lead Assessor Comment:						
The date of baseline determination in section B.8 of PDD is not given.						
Project Participant Response:				Date: 31/05/2011		
It will be updated in the latest version of PDD.						
Documentation Provided by Project Participant:						
PDD version 7 dated 31/05/2011						
Information Verified by Lead Assessor:						
The date is now mentioned in the revised PDD version 7 dated 31/05/2011						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 10/07/2012		
The revised and updated version of the PDD has included the date of baseline determination under section B.8 which was checked and found to be a date prior to the date of the initial web hosted version of the PDD consistently, therefore considered acceptable leading to the satisfactory closure of CAR 16.						
Acceptance and Close out by Lead Assessor: Closed				Date: 10/07/2012		

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CAR	Number:	17	Reference:	C.1.1
Lead Assessor Comment:					
As per section C.1.1 of PDD the start date of the project activity is 01.09.2008, the earliest of date given. The operational lifetime is given as 35 years. Provide documentary proof for start date and operational lifetime.					
Project Participant Response:				Date: 16/03/2009	
Out of international experience Hydropower Schemes have a lifetime of 50-100 years if properly installed to international standards. For economic calculation it is international standard to calculated with 35 years in consideration that the concession is limited to 35 years.					
Documentation Provided by Project Participant:					
N/A					
Information Verified by Lead Assessor:					
N/A					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/04/2009	
Please refer to EB 41 Annex 46 regarding serious CDM consideration and the CDM Glossary of terms for explanation. Please submit the required documents and also elaborate the same in the PDD as per requirement.					
Acceptance and Close out by Lead Assessor: Open				Date: 06/04/2009	
Project Participant Response:				Date: 03/06/2009	
Attached you will find the signed contract between KPC (The Buyer of CERs) and CES (Representative for the project Owner) which evidences that CDM was considered seriously.					
Documentation Provided by Project Participant:					
ERPA					
Information Verified by Lead Assessor:					
ERPA signed between KomunalKredit Public Consulting GmbH and Energo-Aragvi Ltd. dated 23/07/2008 was checked as per EB41 Annex 46.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 18/06/2009	
The ERPA cannot be a sole explanation as per EB41 Annex 46. Contract that has been submitted to SGS does not contain any evidence to confirm starting date of project and lifetime duration as of 35 years. Documentary evidences are still pending. Contract was signed 28/09/2008 (after the project start) thus it cannot be treated as an evidence for preliminary CDM consideration. CAR is open Please elaborate with the help of chronology to establish the following and refer to EB41 Annex 46 for more guidance. The PDD also needs to be updated accordingly.					
Acceptance and Close out by Lead Assessor: Open				Date: 18/06/2009	
Project Participant Response:				Date: 18/07/2012	
The start date of the project activity was revised as 01/09/2011 based on the date of signing contract for E&M equipments with Kössler GmbH on 01/09/2011.					
The lifetime of the project is now considered as 30 years. The expected lifetime of the project is 30 years as sourced from the International Renewable Energy Agency (IRENA), page13/44: http://www.irena.org/DocumentDownloads/Publications/RE_Technologies_Cost_Analysis-HYDROPOWER.pdf					
Documentation Provided by Project Participant:					
Signed E&M contract agreement with Kössler GmbH on 01/09/2011					
International Renewable Energy Agency (IRENA), page13/44: http://www.irena.org/DocumentDownloads/Publications/RE_Technologies_Cost_Analysis-HYDROPOWER.pdf					
Revised PDD version 10					
Information Verified by Lead Assessor:					

E&M contract agreement signed between Energo-Aragvi Ltd. and Kössler GmbH dated 01/09/2011					
The lifetime of the project activity and start date of the project activity was checked. The link was also checked: http://www.irena.org/DocumentDownloads/Publications/RE Technologies Cost Analysis-HYDROPOWER.pdf					
Consistency of the project start date and operational lifetime for the project activity was checked against revised PDD version 10 dated 18/07/2012.					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 24/07/2012	
The project start date mentioned under section C.1.1 of the revised version of the PDD has been stated as 01/09/2011 as the date of signing of E&M contract between PP and Kössler GmbH for the proposed project activity. The copy of the said E&M contract agreement was checked for the date and was found to have been consistently mentioned in the PDD ^{2/} .					
The expected operational lifetime of the project activity has been revised by the PP in the revised version of the PDD as 30 years with reference to the lower limit of the recommended lifetime of hydro power plants (range of 30 to 80 years) by International Renewable Energy Agency as per the report “Renewable Energy Technologies – Cost Analysis Series” dated June 2012. The consideration on the assumption of 30 years as expected project operational lifetime has been validated based on the IRENA report on hydropower “Renewable Energy Technologies – Cost Analysis Series”, dated June 2012; page 7 (traceable at: http://www.irena.org/DocumentDownloads/Publications/RE Technologies Cost Analysis-HYDROPOWER.pdf) and found consistent. Thus, CAR 17 is closed out.					
Acceptance and Close out by Lead Assessor: Closed.				Date: 24/07/2012	

Date:	02/08/2008	Raised by:	Assessment Team		
Type:	CL	Number:	18	Reference:	E.1.1
Lead Assessor Comment:					
There is no clear description of the stakeholder consultation process in the PDD. Who were the stakeholders identified and consulted, media used to invite stake holders, comments received, how due account of comments received was taken into consideration, etc.					
Project Participant Response:				Date: 27/08/2010	
Stakeholder meeting started with the first field mission together with your representative. The last stakeholder meeting took place on 18.03.2009.					
Documentation Provided by Project Participant:					
Stakeholders consultations have been conducted and no negative comments were raised by stakeholders. Protocol of Public hearing, dated.06/10/2008					
Information Verified by Lead Assessor:					
Information was confirmed by document submitted and verified by local assessor. Protocol of Public hearing, dated.06/10/2008					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 28/08/2010	
According to the procedure the project participant has organised the Stakeholder’s consultation procedure and the same was verified with the aforementioned document, which was also confirmed by the local assessor, and reported transparently in the revised and updated version of the PDD. Thus CAR 18 was closed out.					
Acceptance and Close out by Lead Assessor: Closed				Date: 28/08/2010	

A.4 Annex 4: Team Members Statements of Competency

Statement of Competence

Name: Sanjay Banerjee

Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	India	- Technical Reviewer	x

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
Technical Area(s): TA 1.2 Energy generation from renewable energy sources	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	
Approved Member of Staff by: Siddharth Yadav	Date: 07/03/2012

Statement of Competence

Name: Yulia
Marškova

Status

- Lead Assessor		- Expert	
- Assessor		- Financial Expert	
- Local Assessor	CIS region including, Tajikistan, Georgia, Russia etc	- Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	
Technical Area(s):	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by: Siddharth Yadav Date: 07/11/2012

Statement of Competence

Name: **Sauvik
Banerjee**

Status

- Lead Assessor	<input type="checkbox"/>	- Expert	<input type="checkbox"/>
- Assessor	<input checked="" type="checkbox"/>	- Financial Expert	<input type="checkbox"/>
- Local Assessor	India	- Technical Reviewer	<input type="checkbox"/>

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
Technical Area(s): TA 1.1 Thermal energy generation from fossil fuels and biomass including thermal electricity from solar	
2. Energy Distribution	<input type="checkbox"/>
Technical Area(s):	
3. Energy Demand	<input type="checkbox"/>
Technical Area(s):	
4. Manufacturing	<input type="checkbox"/>
Technical Area(s):	
5. Chemical Industry	<input type="checkbox"/>
Technical Area(s):	
6. Construction	<input type="checkbox"/>
Technical Area(s):	
7. Transport	<input type="checkbox"/>
Technical Area(s):	
8. Mining/Mineral Production	<input type="checkbox"/>
Technical Area(s):	
9. Metal Production	<input type="checkbox"/>
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
Technical Area(s):	
12. Solvent Use	<input type="checkbox"/>
Technical Area(s):	
13. Waste Handling and Disposal	<input type="checkbox"/>
Technical Area(s):	
14. Afforestation and Reforestation	<input type="checkbox"/>
Technical Area(s):	
15. Agriculture	<input type="checkbox"/>
Technical Area(s):	

Approved Member of Staff by: **Siddharth
Yadav** Date: **08/11/2012**

Statement of Competence

Name: Ajoy Gupta

Status

- Lead Assessor	x	- Expert	
- Assessor	x	- Financial Expert	
- Local Assessor	India	- Technical Reviewer	x

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	
Technical Area(s):	
2. Energy Distribution	
Technical Area(s):	
3. Energy Demand	
Technical Area(s):	
4. Manufacturing	
Technical Area(s):	
5. Chemical Industry	
Technical Area(s):	
6. Construction	
Technical Area(s):	
7. Transport	
Technical Area(s):	
8. Mining/Mineral Production	
Technical Area(s):	
9. Metal Production	
Technical Area(s):	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
Technical Area(s):	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
Technical Area(s):	
12. Solvent Use	
Technical Area(s):	
13. Waste Handling and Disposal	
Technical Area(s):	
14. Afforestation and Reforestation	
Technical Area(s):	
15. Agriculture	
Technical Area(s):	

Approved Member of Staff by:

Siddharth
Yadav

Date:

22/02/2012

Statement of Competence

Name: Shivaji
Chakraborty

Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	India	- Technical Reviewer	x

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)

x

Technical Area(s):

TA 1.1 Thermal energy generation from fossil fuels and biomass
including thermal electricity from solar

TA 1.2 Energy generation from renewable energy sources

2. Energy Distribution

x

Technical Area(s): TA 2.1 Electricity distribution

TA 2.2 Heat distribution

3. Energy Demand

x

Technical Area(s): TA 3.1 Energy Demand

4. Manufacturing

Technical Area(s):

5. Chemical Industry

Technical Area(s):

6. Construction

Technical Area(s):

7. Transport

Technical Area(s):

8. Mining/Mineral Production

Technical Area(s):

9. Metal Production

Technical Area(s):

10. Fugitive Emissions from Fuels (solid, oil and gas)

Technical Area(s):

11. Fugitive Emissions from Production and

Consumption of Halocarbons and Sulphur Hexafluoride

Technical Area(s):

12. Solvent Use

Technical Area(s):

13. Waste Handling and Disposal

Technical Area(s):

14. Afforestation and Reforestation

Technical Area(s):

15. Agriculture

Technical Area(s):

Approved Member of Staff by:

Siddharth
Yadav

Date:

19/09/2012