



# VALIDATION REPORT

## **ALTERNATE POWER SYSTEMS (PVT.) LTD. “ADAVIKANDA, KURUWITA DIVISION MINI HYDRO POWER PROJECT”**

**Report No: 53604009 - 09/262**

**Date: 2010/03/30**

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Date of first issue: <b>2010-03-30</b>	Project No.: <b>53604009 – 09/262</b>
Final Approval by:  <b>Mr. Rainer Winter</b>	Organisational unit:  <b>TÜV NORD JI/CDM Certification Program</b>
Client:  <b>Alternate Power Systems (Pvt.) Ltd</b>	Client ref.:  <b>Mr. Leel Wickremarachchi</b>
Summary:	<input checked="" type="checkbox"/> positive validation opinion <input type="checkbox"/> negative validation opinion
<p>Alternate Power Systems (Pvt.) Ltd has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "Adavikanda, Kuruwita Division Mini Hydro Power Project" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords) and the relevant decisions by COP/MOP and CDM Executive Board.</p> <p>In the course of the pre-validation <b>26</b> Corrective Action Requests (CARs) and <b>14</b> Clarification Requests (CLs) were raised and successfully closed.</p> <p>The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.</p> <p>In detail the conclusions can be summarised as follows:</p> <ul style="list-style-type: none"> <li>- The project is in line with all relevant host country criteria (Sri Lanka) and all relevant UNFCCC requirements for CDM. Project activity approval have been obtained from DNA of Sri Lanka vide the Letter of Approval (HCA) dated 08.07.2009 from DNA of Japan dated 04.08.2009.</li> <li>- The project additionality is sufficiently justified in the PDD.</li> <li>- The monitoring plan is transparent and adequate.</li> <li>- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 94,381 tCO<sub>2</sub>e are most likely to be achieved within the (1<sup>st</sup> renewable) crediting period.</li> </ul> <p>The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.</p>	

Report No.: <b>53604009 - 09/262</b>	Subject Group: <b>Climate Protection</b>
Report title:  <b>Adavikanda, Kuruwita Division Mini Hydro Power Project</b>	
Work carried out by:  <b>B.J.M .Amarnath N.Premjit Singh G. Ezhilarasu</b>	
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#### Indexing terms

Climate protection  
Kyoto Protocol  
CDM  
Validation

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## Abbreviations

<b>BAU</b>	Business as usual
<b>CA</b>	Corrective Action / Clarification Action
<b>CAGR</b>	Compound Annual Growth Rate
<b>CAR</b>	Corrective Action Request
<b>CDM</b>	Clean Development Mechanism
<b>CEA</b>	Central Environmental Authority
<b>CEB</b>	Ceylon Electricity Board
<b>CER</b>	Certified Emission Reduction
<b>CL</b>	Clarification Request
<b>CO<sub>2</sub></b>	Carbon dioxide
<b>CO<sub>2e</sub></b>	Carbon dioxide equivalent
<b>CP</b>	Certification Program
<b>DG</b>	Diesel Generator
<b>DNA</b>	Designated National Authority
<b>EB</b>	CDM Executive Board
<b>EER</b>	Environmental Examination Report
<b>FAR</b>	Forward Action Request
<b>GHG</b>	Greenhouse gas(es)
<b>GPS</b>	Global Positioning System
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>LKR</b>	Sri Lankan Rupee
<b>NCV</b>	Net Calorific Value
<b>PDD</b>	Project Design Document
<b>PLF</b>	Plant Load Factor
<b>QC/QA</b>	Quality control/Quality assurance
<b>SHP</b>	Small Hydro Project
<b>SPPA</b>	Standard Power Purchase Agreement
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVM</b>	Validation and Verification Manual

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## **1 OBJECTIVE / SCOPE**

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

- the requirements of Article 12 of the Kyoto Protocol;
- the CDM modalities and procedures as agreed in the Marrakech Accords under decision 3/CMP.1
- the annex to the decision;
- subsequent decisions made by COP/MOP & CDM Executive Board and
- other relevant rules, including the host country legislation and sustainability 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 on the quality of the project and its intended generation of certified emission reductions (CERs).

The validation scope is given as a thorough independent and objective assessment of the project design including especially: the correct application of the methodology, the project's baseline study, additionality justification, local stakeholder commenting process, environmental impacts and monitoring plan, which are included in the PDD and other relevant supporting documents, to ensure that the proposed CDM project activity meets all relevant and applicable CDM criteria.

The information included in the PDD and the supporting documents were reviewed against the requirements as set out by the UNFCCC. The validation team has, based on the requirements in the Validation and Verification Manual<sup>VVM</sup>, carried out a full assessment of all evidences to assess the compliance of the project with the key areas as outlined in section V.E. and V.F. of the VVM (version 1.1, EB 51).

The validation is based on the information made available to TÜV NORD JI/CDM CP and on the contract conditions. TÜV NORD JI/CDM CP can not be held liable by any entity for making its validation opinion based on any false or misleading information supplied to it during the course of validation.

The validation is not meant to provide any consulting to the project participants. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

## 2 GHG PROJECT DESCRIPTION

### 2.1 Project Characteristics

Essential data of the project is presented in the following Table 2-1.

**Table 2-1:** Project Characteristics

Item	Data		
Project title	Adavikanda, Kuruwita Division Mini Hydro Power Project		
Project size	<input type="checkbox"/> Large Scale	<input checked="" type="checkbox"/> Small Scale	
Project Scope (according to UNFCCC sectoral scope numbers for CDM)	<input checked="" type="checkbox"/>	1	Energy Industries (renewable- /non-renewable sources)
	<input type="checkbox"/>	2	Energy distribution
	<input type="checkbox"/>	3	Energy demand
	<input type="checkbox"/>	4	Manufacturing industries
	<input type="checkbox"/>	5	Chemical industry
	<input type="checkbox"/>	6	Construction
	<input type="checkbox"/>	7	Transport
	<input type="checkbox"/>	8	Mining/Mineral production
	<input type="checkbox"/>	9	Metal production
	<input type="checkbox"/>	10	Fugitive emissions from fuels (solid, oil and gas)
	<input type="checkbox"/>	11	Fugitive emissions from production and consumption of halocarbons and hexafluoride
	<input type="checkbox"/>	12	Solvents use
	<input type="checkbox"/>	13	Waste handling and disposal
	<input type="checkbox"/>	14	Afforestation and Reforestation
	<input type="checkbox"/>	15	Agriculture
Applied Methodology	AMS I.D Version 13"Grid connected Renewable Energy Generation"		
Crediting period	<input checked="" type="checkbox"/> Renewable Crediting Period (7 y)	<input type="checkbox"/> Fixed Crediting Period (10 y)	
Start of crediting period <sup>1</sup>	01.06.2010 or from the date of registration		

### 2.2 Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-2).

**Table 2-2:** Project Parties and project participants

Characteristic	Party	Project Participant
Host party	Sri Lanka	Alternate Power Systems (Pvt.) Ltd. ( Private Entity)
Other involved party/ies	Japan	Mitsubishi UFJ Securities Co., Ltd. ( Private Entity)

<sup>1</sup> As per the revised PDD (version 3)

## 2.3 Project Location

The details of the project location are given in table 2-3:

**Table 2-3:** Project Location

No.	Project Location
Host Country	Sri Lanka
Region:	Ratnapura District
Project location address:	Adavikanda, Kuruwita Division
Latitude:	6° 49' 56" N
Longitude:	80°25' 27"E

## 2.4 Technical Project Description

The technical key data are provided in table 2-4 below

**Table 2-4.1: Gilkes Horizontal Francis Turbine Description**

Parameter	Specification
<b>TECHNICAL DATA</b>	
Manufacturer	Gilbert Gilkes & Gordan Ltd.
Country of Origin	United Kingdom
Model	550 G150
No. of Units	Three
Mean diameter of Runner	550 mm
Rated Speed	1000 rpm
Over Speed	1960 rpm
Inlet Pipe Nominal Dia	800 mm
Shaft Attitude	Horizontal
Altitude	302 m.a.s.l
<b>Operating Conditions</b>	
<b>3 Units Running</b>	
Static head	155.6 m
Net Head	135 m
Flow rate	Total : 6 m <sup>3</sup> /s
Turbine power output	Per Unit : 2418 kW
Max Allowable setting height	3.068 m
<b>2 Units running</b>	
Static head	155.6 m
Net Head	151.3 m
Flow rate	3.66 m <sup>3</sup> /s
Turbine power output	2418 kW
Max Allowable setting height	3.763 m
<b>1 Unit running</b>	
Static head	155.6 m

Parameter	Specification
Net Head	153.8 m
Flow rate	Per unit: 1.81 m <sup>3</sup> /s
	Per Unit 1.81 m <sup>3</sup> /s
Turbine power output	2418 kW
Max Allowable setting height	3.681 m

**Table 2-4.2: Generator Technical Description**

<b>Manufacturer</b>	<b>Gilbert Gilkes &amp; Gordan Ltd.( Self excited, synchronous generator)</b>
Item	1
Quantity	3
Input Power	2418 kW
Apparent Power Output	2920 KVA
Power Output	2336 kW
Power Factor	0.8
Frequency	50 Hz
Speed	1000 rpm
Runaway speed	1960 rpm
Insulation	Class F
Ambient T°	40°C



### 3 METHODOLOGY AND VALIDATION SEQUENCE

#### 3.1 Validation Steps

The validation of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the project design document (PDD)
- A desk review of the PDD<sup>/PDD/</sup> submitted by the client and additional supporting documents with the use of customised validation protocol <sup>/CPM/</sup> according to the Validation and Verification Manual <sup>/VVM/</sup>,
- Validation planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft validation reporting
- Resolution of corrective actions (if any)
- Final validation reporting
- Technical review
- Final approval of the validation.

The sequence of the validation is given in the table 3.1 below:

**Table 3.1:** Validation sequence

Topic	Time
Assignment of validation	2009-05-29
Submission of PDD for global stakeholder commenting process	2009-03-07-2009-01-08
On-site visit	2009-08-10 - 2009-08-11
Draft reporting finalised	2009-10-09
Technical review on draft reporting finalised	2009-10-10
Final reporting finalised	2010-03-01
Technical review on final reporting finalised	2010-03-29

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## **3.2 Contract review**

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

## **3.3 Appointment of team members and technical reviewers**

On the basis of a competence analysis and individual availabilities a verification team, consistent of one team leader and 3 additional team members, were appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.

**Table 3-2:** Involved Personnel

	Name	Company	Function <sup>1)</sup>	Qualification Status <sup>2)</sup>	Scheme competence	Technical competence <sup>4)</sup>	Host country Competence	Team Leading competence
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	MP Kanal	TUV India Private Ltd.	TL	A	<input checked="" type="checkbox"/>	S	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	BJM Amarnath	TUV India Private Ltd.	TM	E	<input checked="" type="checkbox"/>	S	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	N Premjit Singh	TUV India Private Ltd.	TM	E	<input checked="" type="checkbox"/>	S	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	G Ezhilarasu	TUV India Private Ltd.	T	T	<input type="checkbox"/>	-	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Alexandra Nebel	TÜV-Nord	TR <sup>3)</sup>	A	<input checked="" type="checkbox"/>	-	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ingo Klein	TÜV-Nord	TR <sup>3)</sup>	E	<input checked="" type="checkbox"/>	S	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Rainer Winter	TÜV-Nord	FA	SA	<input checked="" type="checkbox"/>	S	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<sup>1)</sup> TL: Team Leader; TM: Team Member, TR: Technical review; FA: Final approval

<sup>2)</sup> GHG Auditor Status: A: Assessor; E: Expert; SA: Senior Assessor; T: Trainee; TE: Technical Expert

<sup>3)</sup> No team member

<sup>4)</sup> As per S01-MU03 or S01-VA070 A2 (such as A, B, C.....)

Certificates of appointment for the above mentioned team members are enclosed in annex 6 of this report.

### 3.4 Consideration of Public Stakeholder Comments

Acc. to the modalities and procedures the draft PDD, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the validation activity commenced. Stakeholders have been invited to comment on the PDD within the 30 days public commenting period.

In case comments were received, they are taken into account during the validation process. The comments and the discussion of the same are documented in annex 5 of this report.

### 3.5 Validation Protocol

In order to ensure consideration of all relevant assessment criteria, a validation protocol is used. The protocol shows, in a transparent manner, criteria and requirements, means of validation and the results from pre-validating the identified criteria. The validation protocol reflects the generic CDM requirements each CDM project has to meet as well as project specific issues as applicable. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements that a CDM project is expected to meet;
- It ensures a transparent validation process where the validating entity will document how a particular requirement has been validated and the result of the determination.

The validation protocol as described in Figure 1.

<b>Validation Protocol Table A-1: Requirement checklist</b>				
<b>Checklist Item</b>	<b>Validation Team Comment</b>	<b>Reference</b>	<b>Draft Conclusion</b>	<b>Final Conclusion</b>
<i>The checklist items in Table A-1 are linked to the various requirements the project should meet. The checklist is organised in various sections. Each section is then further subdivided as per the requirements of the topic and the individual project activity.</i>	<i>The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the validation team and how the assessment was carried out. The reporting requirements of the VVM shall be covered in this section.</i>	<i>Gives reference to the information source on which the assessment is based on</i>	<i>Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft validation stage.</i>	<i>In case a corrective action or a clarification the final assessment at the final validation stage is given.</i>

**Figure 1:** Validation protocol tables

The completed validation protocol is enclosed in Annex 1 to this report.

### 3.6 Review of Documents

The published PDD (version 1) and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

### 3.7 Follow-up Interviews

The validation team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for CDM.

During validation the validation team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in table 3-3.

**Table 3-3:** Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives Project consultant Ceylon Electricity Board official Some Local stakeholders	<ul style="list-style-type: none"><li>- Chronological description of the project activity with documents of key steps of the implementation.</li><li>- Current status of plant design</li><li>- Technical details of the project realization, project feasibility, designing, operational life time, monitoring of the project</li><li>- Host Government Approval</li><li>- Approval procedures and status</li><li>- Monitoring and measurement equipment and system.</li><li>- Financial aspects</li><li>- Crediting period</li><li>- Project activity starting date</li><li>- CER allocation / ownership</li><li>- Baseline study assumptions</li><li>- Additionality</li><li>- Sustainable development issues</li><li>- Monitoring</li><li>- Analysis of local stakeholder consultation</li><li>- Roles &amp; responsibilities of the project participants w.r.t. project management, monitoring and reporting</li><li>- National Legislation</li><li>- Editorial issues of the PDD</li></ul>

A comprehensive list of all interviewed persons is part of section 7 'References'.

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### 3.8 Project comparison

The validation team has compared the proposed CDM project activity with similar projects or technology that have similar or comparable characteristics and with similar projects in the host country in order to achieve additional information esp. regarding:

- Project technology
- Additionality issues
- Reasons for reviews, requests for reviews and rejections within the CDM registration process.

### 3.9 Resolution of Clarification and Corrective Action Requests

#### 3.9.1 Definition

A **Corrective Action Request (CAR)** will be established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,
- the requirements deemed relevant for validation of the project with certain characteristics have not been met or
- there is a risk that the project would not be registered by the UNFCCC or that emission reductions would not be able to be verified and certified.

A **Clarification Request (CL)** will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A **Forward Action Request (FAR)** will be issued when certain issues related to project implementation should be reviewed during the first verification.

#### 3.9.2 Draft Validation

After reviewing all relevant documents and taken all other relevant information into account, the validation team issues all findings in the course of a draft validation report and hands this report over to the project proponent in order to respond on the issues raised and to revise the project documentation accordingly.

#### 3.9.3 Final Validation

The final validation starts after issuance of the proposed corrective action (CA) of the CARs CLs and FARs by the project proponent. The project proponent has to reply on

those and the requests are “closed out” by the validation team in case the response is assessed as sufficient. In case of raised FARs the project proponent has to respond on this, identifying the necessary actions to ensure that the topics raised in this finding are likely to be resolved at the latest during the first verification. The validation team has to assess whether the proposed action is adequate or not.

In case the findings from CARs and CLs cannot be resolved by the project proponent or the proposed action related to the FARs raised cannot be assessed as adequate, no positive validation opinion can be issued by the validation team.

The CAR(s) / CL(s) / FAR(s) are documented in chapter 4.

### **3.10 Technical review**

Before submission of the final validation report a technical review of the whole validation procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the validation opinion and the topic specific assessments as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

### **3.11 Final approval**

After successful technical review of the final report an overall (esp. procedural) assessment of the complete validation will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

Only after this step the request for registration can be started (in case of a positive validation opinion).

## 4 VALIDATION FINDINGS

In the following table the findings from the desk review of the published PDD, visits, interviews and supporting documents are summarised:

**Table 4-1:** Summary of CARs, CLs and FARs issued

Validation topic <sup>1)</sup>	No. of CAR	No. of CL	No. of FAR
General description of project activity (A) <ul style="list-style-type: none"> <li>- Project specification</li> <li>- Technical project description</li> <li>- Participation</li> <li>- Contribution to sustainable development</li> <li>- PDD editorial aspects</li> <li>- Technology to be employed</li> </ul>	5	1	-
Project Baseline, Additionality and Monitoring Plan (B) <ul style="list-style-type: none"> <li>- Application of the Methodology</li> <li>- Project Boundary</li> <li>- Baseline identification</li> <li>- Calculation of GHG emission reductions <ul style="list-style-type: none"> <li>Project emissions</li> <li>Baseline emissions</li> <li>Leakage</li> </ul> </li> <li>- Additionality determination</li> <li>- Monitoring Methodology</li> <li>- Monitoring Plan</li> <li>- Project management planning</li> </ul>	21	10	-
Duration of the Project / Crediting Period (C)	-	2	-
Environmental impacts (D)	-	-	-
Stakeholder Comments (E)	-	1	-
<b>SUM</b>	<b>26</b>	<b>14</b>	<b>-</b>

<sup>1)</sup> The letters in brackets refer to the validation protocol

The following tables include all raised CARs, CLs. For an in depth evaluation of all validation items it should be referred to the validation protocols (see Annex 1).



The findings of validation process are summarized in the tables below:

General	CAR A1		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Letter of approval from the Designated National Authority, Government of Sri Lanka, is to be submitted for verification. Also letter of approval from the Designated National Authority, Government of Japan, is to be submitted for verification.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	A copy of Letter of Approval issued from DNA, Ministry of Environmental and Natural Resources, Govt. of Sri Lanka as well as from DNA, Govt. of Japan is already submitted to the DOE for reference.		
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The Host Country approval from DNA, Ministry of Environmental and Natural Resources, Govt. of Sri Lanka was received on 08.07.2009 and from the Minister of Economy, Trade and Industry of Japan, Govt. of Japan was received on dated 04.08.2009. The same have been cross verified and found to be ok. CAR A1 is closed		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

General	CAR A2		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section A.2 of PDD, PLF along with the source needs to be provided as per EB 48 annex 11. Source for the statement "50.6% of the country's power requirement came from Thermal Energy in 2006" also needs to be provided.		

General	CAR A2
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>1. PLF is based on a detailed hydrology study done by an independent hydrologist, which is mentioned in detail in the Feasibility Report prepared by an engineering consultant in April 2005. The same Feasibility Study was submitted to the Ceylon Electricity Board (CEB) which is a government body, as part of implementation of the project in order to execute a Standardized Power Purchase Agreement. The same Feasibility Study was considered during the Board Meeting for equity investment decision as well as by the Bank authorities at the time of approval for the Debt Financing of the project. The following additional documents are being submitted to the DOE for reference.</p> <ul style="list-style-type: none"> <li>• A Copy of the CEB letter dated 23.06.2005 confirming acknowledgement of the Feasibility Study.</li> <li>• As requested by the Company the Bank has issued a Certificate that it had considered the assumptions made in the Feasibility Study including the Plant Load Factor.</li> </ul> <p>2. Source of the statement is the CEB letter dated 08.04.2009 having generation data for all the Power plants connected to CEB grid. A copy of this letter is being submitted to the DOE for reference.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>1. All the submitted documents have been cross verified and found that the PLF value of 35 % of the project activity considered is appropriate and inline with EB 48 Annex 11.</p> <p>2. The submitted CEB letter dated 08.04.2009 has been cross verified and it is found that the "50.6% of the country's power requirement came from Thermal Energy in 2006" in Sri Lanka.</p> <p>CAR A2 is closed</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>

General	CAR A3
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Section A.4.14, the latitude and longitude of the project activity doesn't appear to be in the exact location. Correction requested.</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>A detailed survey map of the location issued by Government authority is being attached as Appendix 1 of the PDD. A confirmation of the coordinates from the GPS survey conducted by Geological Survey &amp; Mines Bureau is being submitted to the DOE for reference purpose.</p>

General	CAR A3
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The submitted document GPS Survey report of Geological Survey &amp; Mines Bureau has been cross verified with the attached Appendix I of the PDD and also the same also been cross checked with the given web link and found to be ok.  <a href="http://itouchmap.com/latlong.html">http://itouchmap.com/latlong.html</a>  CAR A3 is closed</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR A4
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Section A.4.2, Information for the auxiliary consumption (%) out of the expected electricity generation is not provided.  Moreover, description of how environmentally safe and sound technology and know how is being applied by the project activity interalia technology transfer to the Host Party(ies) for application in the project activity as per CDM SSC PDD guidelines need to be provided.</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>A detailed description is added in the PDD under Section A.4.2. for the clarity on the auxiliary consumption as well as on adoption of environmentally safe and sound technology for the project activity.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>For the auxiliary consumption as well as for the lighting purpose in the power house there is an energy meter installed by CEB which recorded the energy imported on monthly basis accordingly the CEB raises separate invoice every month to PP. The energy meter has been observed during the on-site visit by the validation team.  Description of how environmentally safe and sound technology and know how is being applied by the project activity interalia technology transfer to the Host Party(ies) for application in the project activity as per CDM SSC PDD guidelines has been provided in the revised PDD.  CAR A4 is closed.</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR A5		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Section A.4.3, the chosen crediting period not mentioned either fixed or renewable. Explanation of the starting date of the crediting period (either as per the expected commissioning date or the registration date) should be provided.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The crediting period chosen is renewable crediting period. The starting date of the crediting period is also mention in Section A.4.3 of the PDD.		
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The chosen crediting period has been given as renewable crediting period the same has been mentioned in the revised PDD.  The explanation of the start date is now post pond to 01.06.2010 or the date of registration in view of the validation progress. The same has been updated in the revised PDD and found to be ok. CAR A5 is closed.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

General	CAR B1		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section B.3, the project boundary provided is not correct. Diagram of the project site/boundary including all important features of diversion structure, penstock, powerhouse, DG Set, tail race channel and the transmission system till switch yard(evacuation point) need to be provided.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The diagram is being updated in Section B.3. The updated diagram is showing the project site including all the important features of the project activity as well as metering point of the exported electricity to the Grid.		
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The project boundary has now defined with all important features of the project activity as per the requirement in the revised PDD. The project boundary was also checked during the on-site visit by the validation team. CAR B1 is closed.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

General	CAR B2( related to additionality)		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section B.5, the investment barrier argument is not inline with Attachment A to Appendix B of the simplified modalities and procedures for small- scale CDM project activities.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The Section B.5 of the PDD is being updated and is now in line with the Attachment A to Appendix B of the simplified modalities and procedures for small- scale CDM project activities.		
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The revised submitted PDD by the PP has been cross checked and section B.5 is found to be inline with Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities. CAR B2 is closed.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

General	CAR B3(related to additionality)		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.5, cost of construction of bridge cannot be construed as barrier as the cost is quantifiable and has already been factored in the investment and sensitivity analysis.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The necessity to construct the bridge and the internal road arose during discussions with the villagers and the local government body. This additional construction had increased the project cost significantly and in the Feasibility Study prepared in April 2005 such cost had not been contemplated. However, the Revised Financial Feasibility Study adequately described the cost of these construction activities that were outside the scope of the power project but they necessarily satisfied one of the immense requirements of the local stakeholders. This activity has resulted in cost escalation due to unforeseeable factors, such as new demands from local community. This is the real reason for mentioning this as a barrier to the project activity because similar type of demand can also be expected in future.</p> <p>However, as DOE is not agreeable, the barrier has been removed from the additionality section. The revised PDD is being submitted to the DOE.</p>		

General	CAR B3(related to additionality)
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>'Apprehension' cannot constitute barrier in CDM projects. Hence, 'similar type of demand can also be expected in future' is not an acceptable barrier. Since the cost is quantifiable and has already been accounted for in financial and sensitivity analysis (where a 10% variation on either side has been taken into consideration), this does not constitute a barrier for the project activity. Please refer paragraph 114 and 115 of VVM.</p> <p>However, as the barrier has been removed, CAR B3 is closed</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CAR B4(related to additionality)
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In section B.5, the expected operational life time of 15 years for the project is not acceptable as small hydro power plants are known to exist for more than 30 to 40 years, unless there are other reasons for choosing this life time. Projections should be prepared at least for 20 years, if not more.</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The rationale for limiting the assessment period is stated in page 9 para 5.1.(c) of the Revised Financial Feasibility Study (RFFS) of November 2007. However, the Sustainable Energy Authority (SEA) has determined the new tariff policy in 2008 for projects getting approvals from 2008 onwards providing a 20 year power purchase agreements. Furthermore, the SEA has now officially informed in their website that the projects approved previously could operate the initial 15 year period under the Avoided Cost basis and could operate further under a new power purchase agreement on the basis of the third tier tariff. However, we have now, prepared the financial evaluation for a period of 21 years.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Projections have been modified and provided for 21 years, which conforms to guidance 3 of Annex 58, EB 51. CAR B4 is closed.</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements



General	CAR B5(related to additionality)		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section B.5, since Sri Lanka's financial year is April to March, the projections should conform to Financial Year and not calendar year.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The projections have been revised and now projections are prepared on Financial Year basis.		
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Projections have been prepared on financial year basis (April to March). CAR B5 is closed.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements		

General	CAR B6(related to additionality)		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In B.5, since financial year in Sri Lanka is April to March, projections should be for the financial year. First year of operation should therefore be 2009-10 as the project is expected to commence generation in July 2009.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The projections have been revised and now projections are prepared on Financial Year basis as per the given CAR.		
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Projections have been revised. CAR B6 is closed.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements		

General	CAR B7(related to additionality)
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section B.5, First year generation may be taken as 75% of expected generation as the project is expected to be operational on July 1, 2009.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The projections have been revised and now the first year generation is 75% of the expected generation per annum (7 months wet period and 2 months dry period). The dry period is defined in the Standardized Power Purchase Agreement)
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Revised projections are accepted. CAR B7 is closed
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CAR B8(related to additionality)
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section B.5, assuming administrative expenses as a percent of revenue makes it a variable cost, which does not seem to be correct. Administrative expenditure should be presented on a stand-alone basis without reference to revenue with suitable evidence. Moreover, administrative cost is in excess of O&M cost, which does not appear to be reasonable and hence acceptable.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>Estimation of Administration Expenses has been given and is included as a part of the O&amp;M Expenses. O&amp;M expense works out to LKR 19.90 MN which is around 2.22% of the Capital Cost of the Project. The government recommended figure for the O&amp;M Expense is 3% of the Capital expense as described in <b>Point 6.6 of the Tariff Explanatory Note of 2009.</b></p> <p>Escalation in O&amp;M Expense is calculated based on the <b>Point 6.7 of the Tariff Explanatory Note of 2009</b> as 6.63% and calculation is being presented in the spread sheet to the DOE along with the references. (<a href="http://www.energy.gov.lk/pdf/explanatory_note_april_2009.pdf">http://www.energy.gov.lk/pdf/explanatory_note_april_2009.pdf</a> )</p>



General	CAR B8(related to additionality)
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Administrative expenses break up has been furnished together with evidence. Total O&M and administrative expenses constitute only 2.3% of the capital cost of the project in contrast to 3% recommended by the Government. CAR B8 is Closed
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CAR B9(related to additionality)
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	The weighted average tariff calculation does not appear to be correct as it assigns 85% weight to wet season and 15% weight to dry season, while it should be 75% and 25% respectively. This may be checked and necessary modification carried out.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	We agree that the State Utility has defined the dry and the wet periods in the SPPA for the purpose of determining the tariff. However, the actual generation depends on the rainfall pattern because the project is run-of-river type. The confirmation from the Design and Construction company on the estimated generation during dry and wet periods is being submitted to the DOE for consideration. As per the estimation submitted, though wet season accounts for 75% in terms of months, it accounts for 85% of generation. Hence, we have assigned weight of 85% for wet season and 15% for dry season.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The documents submitted as evidence are accepted. The computation is correct. CAR B9 is closed
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CAR B10(related to additionality)
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR

General	CAR B10(related to additionality)
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In section B.5, weighted average tariff has been escalated at 5.33% based on the annual growth rate in tariff in the last 4 years. While the methodology adopted for the computation of CAGR does not seem to conform to accepted methodology, the escalation arrived at also does not seem to be in line with escalation provided by CEB (CEB website provides for 5.37% escalation). This may be checked and necessary corrections made, if required.</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>Since the Sri Lankan Government ratified Kyoto Protocol in September 2002, PP has considered the tariff rates announced by CEB after September 2002 till November 2007 as the basis for tariff projections for the next 15 years "avoided cost based Tariff". We have considered simple average because it is more conservative (yields 5.33% CAGR) than Geometric Mean (which yields 4.6% CAGR). The growth rate calculation forms part of worksheet.</p> <p>The SEA website shows an escalation rate of 8.06% as the O&amp;M base rate escalation for all projects and an escalation rate of 5.37% as escalable base fuel rate for thermal projects such as biomass and waste to energy projects. However, these escalable rates are applicable for projects that are approved in 2009 and the rates are governed under the "Three Tier Tariff" scheme Hence, not applicable for project having "avoided cost based tariff" scheme</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The escalation of 5.37% tariff provided in the CEB website is not applicable for this project activity as that is applicable only for the projects approved by the CEB in 2009 (SPPA signed after 2008). Hence, calculated escalation rate of 5.33% (simple average) is found to be conservative and applicable to the project activity. CAR B10 is closed.</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p> <input type="checkbox"/> To be checked during the first periodic verification  <input checked="" type="checkbox"/> Appropriate action was taken  <input checked="" type="checkbox"/> Project documentation was corrected correspondingly  <input type="checkbox"/> Additional action should be taken  <input type="checkbox"/> The project complies with the requirements         </p>

General	CAR B11(related to additionality)
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In Section B.5, as the project is expected to be commissioned on July 1, 2009, only 3 months interest on loan can be capitalized and not 6 months as given the financial year April to March.</p>

General	CAR B11(related to additionality)
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The projections have been revised and now only the interest charged in year 2007-08, 2008-09 is being capitalized for the IRR computation. The first 3 months interest is not being capitalized due to the fact that it will only increase the capital cost and hence not a conservative approach. Still, PP has accounted the 9 month interest (for year 2009-10) in the calculation to be on conservative side.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Interest during the first 3 months of construction stage in 2009-10 has not been capitalized, which is conservative. In the worksheet, only 9 months interest has been accounted for, which is in conformity with accepted accounting principles.</p> <p>CAR B11 is closed</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p> <input type="checkbox"/> To be checked during the first periodic verification  <input checked="" type="checkbox"/> Appropriate action was taken  <input checked="" type="checkbox"/> Project documentation was corrected correspondingly  <input type="checkbox"/> Additional action should be taken  <input type="checkbox"/> The project complies with the requirements         </p>

General	CAR B12(related to additionality)
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>Manpower cost computed is for full year, while the project is operational only for 9 months in 2009-10. Accounting for 12 months salaries, when the project has been operational for only 9 months is not in conformity with accepted accounting principles. Likewise, the basis of non-wages O&amp;M cost provided is not known. The O&amp;M cost should also be provided only for the period the project was in operation during the financial year.</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The projections have been revised and now, O&amp;M expense for 9 months is being considered for the year 2009-10 for profitability projections.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Manpower and O&amp;M cost has been provided for 9 months only in the revised projections, which is appropriate.</p> <p>CAR 12 is closed</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p> <input type="checkbox"/> To be checked during the first periodic verification  <input checked="" type="checkbox"/> Appropriate action was taken  <input checked="" type="checkbox"/> Project documentation was corrected correspondingly  <input type="checkbox"/> Additional action should be taken  <input type="checkbox"/> The project complies with the requirements         </p>

General	CAR B13(related to additionality)		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.5, providing full year depreciation, when the project has been operational for less than one year is not in conformity with accepted accounting principles.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The confirmation from the Auditors of the company is being submitted to the DOE with reference to the Inland Revenue Act of 2006. For book profit calculations, company has provided depreciation for 06 months (As per Sri Lanka Accounting Standards). For tax purposes, company will get full capital allowances for the year of assessment 2009/2010,		
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The provision of depreciation for book profit calculation conforms with accepted accounting principles and the provision of depreciation for income tax calculation purposes is in conformity with Inland Revenue Act of Sri Lanka. CAR B13 is closed		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements		

General	CAR B14(related to additionality)		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In section B.5, while the basis for considering 3% book depreciation on plant and machinery and 1.67% on civil works is not clear, it is observed that for computation of income tax, Inland Revenue Act stipulated depreciation [Section 23 (1) (b)] has not been used. Hence, computation of tax, based on book depreciation, does not appear to be in conformity with Inland Revenue Act of Sri Lanka.</p> <p>Moreover, IDC, pre-operative expenses, administrative expenses contingencies and insurance have neither been capitalized and depreciated nor amortized. In sum, the tax benefit thereon has not been accounted for in the worksheet. Clarify whether it is in conformity with Inland Revenue Act</p>		

General	CAR B14(related to additionality)
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The projections have been revised and now projections are prepared based on the depreciation rates mentioned in the Inland Revenue Act of Sri Lanka. Please refer to the Section 25 (1) (a) of the Inland Revenue Act of 2006 for the Depreciation allowances recommended by the Government. A hard copy of this act is being submitted to the DOE for reference.</p> <p>IDC, pre-operative expenses, administrative expenses, contingencies and insurance during construction period have now been capitalised for depreciation.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The depreciation provided in the revised worksheet is in conformity with Inland Revenue Act of Sri Lanka.</p> <p>All pre operative expenses have now been capitalized. CAR 14 is closed</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input type="checkbox"/> The project complies with the requirements</p>

General	CAR B15(related to additionality)
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In section B.5, Benchmark seems to suffer from following limitations:</p> <ul style="list-style-type: none"> <li>a) it seems to represent an amalgam of after tax and before tax components. While cost of equity seems to be after tax, cost of debt is before tax;</li> <li>b) considering only one company's return (and that too for only one year) for computing the cost of equity does not seem to be in conformity with stipulations made in the Additionality Tool;</li> <li>c) WACC calculation itself does not seem to conform to paragraph 5 of Sub-step 2(b) of Additionality Tool.</li> </ul>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>PP has now adopted Bank PLR as the Benchmark for the financial analysis and the PDD has been modified accordingly. This benchmark is in conformity with Guidance 12 and 13 of Annex 58, EB 51 and is also appropriate for the financial indicator selected to demonstrate the additionality of the project. The Bank PLR figure (18.31%) in the month of October 2007 is assumed as the Benchmark for the IRR analysis. The figure is publically available on the Central Bank of Sri Lanka website (<a href="http://www.cbsl.gov.lk/info/cei/ir/i_4.asp?Date=&amp;Keyword=&amp;Mode=2&amp;Page=5">http://www.cbsl.gov.lk/info/cei/ir/i_4.asp?Date=&amp;Keyword=&amp;Mode=2&amp;Page=5</a>). Moreover, this benchmark is also conservative to the benchmark presented in the web hosted PDD for GSC (18.64%)</p>

General	CAR B15(related to additionality)
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Since the selected benchmark is in conformity with Guidance 12 and 13 of Annex 58, EB 51, suitable for the financial indicator selected and is conservative to the benchmark given in the GSC PDD, benchmark is accepted. CAR 15 is closed</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CAR B16(related to additionality)
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In Section B.5, worksheet does not contain any provision to independently verify the sensitivity results. Suitable table with proper links may be added to facilitate independent verification.</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The spread sheet has been revised and the sheets are now interlinked. As per loan conditions any cost overrun needs to be financed by the project proponent. Hence, loan interest would not change due to any variation in the project cost. DFCC Bank Offer Letter of December 17, 2007 and Company Undertaking 2.1.2 evidencing this has been submitted to DOE.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Sensitivity analysis has been modified and linked to facilitate independent verification. As regards the issue on equity bearing the brunt, the submission is accepted.            CAR 16 is closed.</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CAR B17
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR



General	CAR B17
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In Section B.6.1, the section is not inline with CDM SSC PDD guidelines for small scale. All the equations used for the project activity should be explained in detail.</p> <p>Moreover, in future PP has a plan to install a back up DG set to meet the emergency lighting requirement of Power House in case of grid failure. So, the project emission resulting from uses of DG set should be accounted and the method should be clearly defined in section B.6.1 of PDD.</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The section B.6.1 of the PDD is being updated now the methodological choices met to estimate the baseline emission is describe and it is according to the guidance provided in AMS I.D version 13 paragraph 9.</p> <p>The method for calculating project emission has been described based on (Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion (Version 02).</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The estimation of baseline emission in the revised PDD has been cross verified with the applied methodology AMS I.D version 13 and found to be ok.</p> <p>Also, the project emission calculation for the back up DG set is now included in the revised PDD also the basis for the calculation is cross checked with the (Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion (Version 02) and found to be ok.</p> <p>CAR B17 is closed.</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>

General	CAR B18
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In section B.6.2, no information for <math>W_{OM}</math>, <math>W_{BM}</math>, <math>EF_{BM}</math>, <math>EF_{CM}</math> in this section. Also the <math>EF_{CM}</math> is based on for ex-ante or ex-post. If it is ex-post the parameters need to be included in section B.7.1.</p> <p>Also the parameters used for calculating for project emissions needs to be provided in the table of B.6.2.</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The section B.6.2 of the PDD is being corrected to include the parameters used for project emission calculation.</p> <p>The relevant monitoring parameters used for baseline calculation are being provided in section B.7.1 of the revised PDD and being monitoring for once of each crediting period.</p>

General	CAR B18
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The combined margin is calculated ex-ante once for each crediting period. The relevant parameters are now provided in B.7.1 of the revised PDD.</p> <p>The relevant parameters used for calculation of project emissions are now provided in the table of B.6.2 of the revised PDD. The calculation has been cross verified with the given information, web link and found to be appropriate.</p> <p>CAR B18 is closed.</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B19
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In Section B.6.3, the section is not inline with CDM- SSC PDD guidelines for small scale. There is no detail break up of calculations of the equations used in B.6.1</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The details break up of calculation of emission reduction calculation is now provided in the revised PDD with proper equations. The revised PDD is being submitted to the DOE.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Ex-ante calculation of emission reductions is now provided step wise with proper equations and found to be inline with CDM-SSC-PDD.</p> <p>CAR B19 is closed.</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CAR B20
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In Section B.7.1, calibration procedures applied and the accuracy class of the measurement method needs to be provided. If the renewable crediting period is chosen the relevant parameters used for calculating baseline emission should be included in B.7.1</p>



General	CAR B20
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Calibration procedures applied and the accuracy class of the measurement method have been provided in the revised PDD, All the relevant parameters to be monitored used for calculating baseline emissions now provided in section B.7.1
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The meter will be calibrated as per CEB standard atleast once in 3 years and the accuracy class of the energy meter is 1. The same has been confirmed by the validation team during the on-site visit interviewing CEB official. The provided relevant parameters used for calculating baseline emission is cross checked and found to be appropriate. CAR B20 is closed.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CAR B21
<b>Classification</b>	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section B.7.2, procedures for training of monitoring personnel, Procedures for documentation and storage, QA/QC procedures, Data Storage & Archiving needs to be explained.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Procedures for training of monitoring personnel, Procedures for documentation and storage, QA/QC procedures, Data Storage & Archiving have been explained in detail the revised PDD.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The revised PDD has been cross checked and all the Procedures for training of monitoring personnel, Procedures for documentation and storage, QA/QC procedures, Data Storage & Archiving have been explained in detail and found to be ok. The same has also been observed during the on-site visit by the validation team. CAR B21 is closed.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input checked="" type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL A1		
<b>Classification</b>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	Either the project participants are public or private entity? Not inline with CDM SSC PDD guidelines.		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	Both the project participants are private entity. This is being mentioned in the PDD for clarity.		
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The revised PDD is cross checked and found that project participants are given as private entities. CL A1 is closed.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

General	CL B1		
<b>Classification</b>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section B.1, the title of the methodology AMS I.D is not correct		
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The title of the methodology has been corrected in the PDD.		
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The corrected methodology title has been cross checked with the applied methodology AMS I.D version 13 and found to be ok. CL B1 is closed.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements		

General	CL B2
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.4, the version for the “Tool to calculate the emission factor for an electricity system” is missing.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The version of the “Tool to calculate the emission factor for an electricity system” has been incorporated in the revised PDD.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The version of the used “Tool to calculate the emission factor for an electricity system” is found updated as I.1 in the revised PDD. CL B2 is closed.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL B3(related to additionality)
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section B.5, even as per the Flat Tariff Option of CEB, the tariff offered to Mini Hydro power projects appears to be LKR 14.58/kWh. Against this background, the basis on which a tariff of LKR 7.82 / kWh has been assumed may be explained.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The PPA clearly states the applicable tariff rate for this project. (Pages 20-22 of SPPA). Since the Sri Lankan Government ratified Kyoto Protocol in September 2002, PP has considered the tariff rates announced by CEB after September 2002 till November 2007 as the basis for tariff projections for the next 15 years “avoided cost based Tariff”. For the last 6 years of projections the tariff is calculated based on the third tier of the new tariff scheme announced by the CEB in 2009.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Since the PPA supports the submissions made by the PP, the tariff assumed is accepted. CL B3 is closed
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CL B4(related to additionality)
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section B.5, Clarify the basis for assuming straight line depreciation rate of 1.67% on civil works and 3% on plant and machinery
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The projections have been revised and now projections are prepared based on the depreciation rates mentioned in the Inland Revenue Act of Sri Lanka. A copy of the Act is being provided to the DOE for reference.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The depreciation is in conformity with Inland Revenue Act. CL B4 is closed.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CL B5(related to additionality)
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.5, the basis for phasing of the capital investment over 4 year period may be explained and documentary evidence furnished.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The phasing of investment is based on actual figures available with the project developer at the time of decision making (Nov. 2007) and the projected investment for the future period. The investment projections are also in conformity with actual as evidenced by the Auditor's certificate now enclosed.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Phasing of investment is in conformity with Auditor's certificate. CL B5 is closed.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CL B6(related to additionality)
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In section B.5, basis for turbine refurbishing provided at LKR 70 mn. in 2013 and LKR 90 mn. in 2018 may be furnished with supporting evidence. However, none of the Sri Lankan SH projects validated by DOE so far have provided for such investment. In the above background, the provision of refurbishing cost does not seem to be acceptable.</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>During the time of negotiations with the Equipment Supplier, Gilbert Gilkes &amp; Gordon Ltd of UK, this matter was discussed and as per their advice the above mentioned amounts have been provided as refurbishing costs. The amounts have been determined as follows: GBP 300,000 @ SLR 230.54 (exchange rate in October 2007) is SLR 69.2 Mn. Assuming the currency depreciation of 2.5% per annum the refurbishing cost in 2013 and 2018 would be SLR 80.25 Mn and 90.8 Mn respectively. We have assumed the costs to be SLR 70 Mn and SLR 90 Mn conservatively. Also, since we have now increased the projections for 20 years, a refurbishing cost of SLR 100 Mn was assumed for year 2023(15th year of operation).</p> <p>The confirmation from Gilbert Gilkes &amp; Gordon Ltd. on refurbishing cost is being submitted to the DOE for reference.</p> <p>But, as DOE is not agreeable, the projections have been revised and Refurbishing cost has been removed in the projections.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Refurbishing cost has been removed. CL B6 is closed</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CL B7(related to additionality)
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In Section B.5, it may be explained how the pre tax project IRR is selected as the appropriate financial indicator to demonstrate the additionality of the project activity.</p>

General	CL B7(related to additionality)
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	We agree with DOE. Now Post tax Project IRR is considered as the financial indicator for the project activity. PDD has been corrected accordingly.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Post tax project IRR is accepted as financial indicator considering the financing pattern of project, its ownership pattern, nature of project and common practice adopted by bankers and investors while evaluating the project. CL B7 is closed.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CL B8(related to additionality)
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.5, Clarify whether this project is eligible for 10 year tax holiday or not as the total investment is in excess of LKR 500 mn.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The project is eligible for 5 year tax holiday as per the BOI Agreement a copy of which is being submitted to the DOE for reference.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	Tax holiday has been accounted. CL B8 is closed
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CL B9(related to additionality)
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.5, clarify whether the projects do not attract Economic Service Charge (ESC) and Social Responsibility Levy (SRL).



General	CL B9(related to additionality)
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The Project has to pay Economic Service Charge of 0.25% of the turnover. Social Responsibility Levy is 1.5% of the income tax. In other words SLR is applicable from the 6<sup>th</sup> year of commissioning the project.</p> <p>We have mentioned this in the revised IRR computation.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>ESC and SRL have been taken into account in the worksheet.</p> <p>CL B9 is closed</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input type="checkbox"/> The project complies with the requirements</p>

General	CL B10 (related to additionality)
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>It may be clarified how the CDM revenues were considered essential to overcome the investment barrier to this project activity, in particular that the benchmark represents a rate below which the investment could not be made</p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>CDM revenue is considered essential to overcome the investment barrier to this project. This is evident from the Board Resolution taken by the company in November 2007. The Project had to raise loans from DFCC Bank and Commercial Bank of Ceylon, and both banks in their Offer Letters stipulated as a Special Condition that the Project should seek to register as a CDM Project as per the Kyoto Protocol.</p> <p>Also, IRR is crossing the benchmark with CDM revenue if we consider the prevailing price for the CER (October 2007) at the time of decision making which was around 18 Euros at that time.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>Submitted Board resolution, loan documents have been verified and found that the project activity may not be viable without the CDM revenues. The same has been confirmed with the investment analysis spreadsheet that the project will be viable only after considering the CDM revenue. Hence, the explanation given is accepted.</p> <p>CL B10 is closed</p>

General	CL B10 (related to additionality)
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CL C1
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section C.1.1, The evidence provided by the PP for the start date of the project activity as the contract of Penstock clearing, transportation & painting between APS & Liyanage (Pvt.) Ltd dated 21.01.2008 whereas in the PDD it is mentioned as the placement of first purchase order for Penstock. So, clarification is requested.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	The start date of the project activity is being corrected as 21.01.2008 in the Section C.1.1 of the revised PDD.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	It is checked with the revised PDD and found that the start date of the project activity is now corrected as 21.01.2008 as per the evidence provided by the PP as the contract of Penstock clearing, transportation & painting between APS & Liyanage (Pvt.) Ltd. CL C1 is closed.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

General	CL C2
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section C.1.2, Operational lifetime as 15 years is very low for a hydro power plant.



General	CL C2
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>We have earlier used the operational lifetime as 15 years because PP had the SPPA for only 15 years at the time of preparation of the feasibility study of the project activity.</p> <p>Now, the PP has received a certificate from the Turbine Manufacturer's (Gilbert Gikes &amp; Gordon Ltd.) for the project activity about the technical life time of the project equipment. The Manufacturer of the turbine- generator has certified the technical lifetime of 25 years for the major equipments of the project activity.</p> <p>In view of consideration of this new fact the Operational lifetime of the Project activity is now assumed to be 25 years with the consideration of periodic refurbishing of the Turbine after every 5 years(as per manufacturer's certificate)</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The submitted certificate for the technical life time of the project activity is verified and found to be appropriate. The operational lifetime of the project is now changed to 25 years. The same is found updated in the revised submitted PDD.</p> <p>CL C2 is closed.</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input checked="" type="checkbox"/> Appropriate action was taken</p> <p><input checked="" type="checkbox"/> Project documentation was corrected correspondingly</p> <p><input type="checkbox"/> Additional action should be taken</p> <p><input checked="" type="checkbox"/> The project complies with the requirements</p>

General	CL C3
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>In Section C.2.1, the choice of the type of the crediting period is not given.</p> <p>Also in section C.2.1 <i>The start date of the crediting period needs to be postponed considering the progress of Validation.</i></p>
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	<p>The chosen crediting period is now given in the revised section C.2.1 of PDD. Also the start date of the crediting period is now revised in the PDD.</p>
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The revised submitted PDD is verified and found that the chosen crediting period is defined in the section C.2.1 of PDD also the start date of the crediting period is now revised as 1<sup>st</sup> June 2010 or date of registration.</p> <p>CL C3 is closed.</p>

General	CL C3
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input checked="" type="checkbox"/> The project complies with the requirements

General	CL E1
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding</b> <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Section E.1, there is no information regarding discussion of CDM with the stakeholders meeting.
<b>Corrective Action #1</b> <i>This section shall be filled by the PP. It shall address the corrective action taken in details.</i>	During the Stakeholder Consultation Meeting, the Managing Director did in fact mention about the Company's intention of applying for CDM benefits. The copy of Minutes of the meeting and the invitation letter submitted to the DOE will confirm this fact.
<b>DOE Assessment #1</b> <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The submitted copy of the Minutes of the meeting and the invitation letter were verified and also the revised PDD. It is found that discussion of CDM was one of the major points with the stakeholders meeting. Also, during the on-site visit the Validation team interviewed some of the stakeholders presented during the stakeholder's consultation meeting to verify the same.</p> <p>Hence, CL E1 is closed.</p>
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input checked="" type="checkbox"/> Appropriate action was taken <input checked="" type="checkbox"/> Project documentation was corrected correspondingly <input type="checkbox"/> Additional action should be taken <input type="checkbox"/> The project complies with the requirements

## **VALIDATION ASSESSMENT SUMMARY**

### **4.1 General Description of the Project Activity**

#### **4.1.1 Participation**

##### **LOA**

The host country approval was obtained from Ministry of Environment and Natural Resources, Govt of Sri Lanka which is the authorised DNA for CDM projects. Ministry of Environment and Natural Resources, Govt. of Sri Lanka has stipulated sustainable development in the interim approval guidelines for host country approval eligibility criteria for Clean Development Mechanism (CDM) projects. The PDD described all the sustainable development indicators correctly and appropriately which is sufficient enough to prove that project will lead to sustainable development. The Host Country approval also indicates that project will lead to sustainable development.

However, CAR A1 was raised in this context and closed successfully during validation process.

##### **Project Participants**

Alternate Power Systems (Pvt.) Ltd. is the project participant which is a private entity and it has obtained the LOA from Ministry of Environment and Natural Resources (Govt. of Sri Lanka) for the proposed project activity. And Mitsubishi UFJ Securities Co., Ltd is also a project participant for the proposed project activity which is a private entity and it has obtained LOA from Minister of Economy, Trade and Industry of Japan (Govt. of Japan).

#### **4.1.2 Contribution to Sustainable Development**

The Host country Government approved that the project will contribute to the sustainable development for the country. The details were verified from the LOA and found to be correct.

#### **4.1.3 PDD editorial Aspects**

The project used the latest template for completing CDM SSC PDD form version 3 which is the latest during the global stake holder consultation process.

The Project also used CDM-PDD filling guideline version 07, for completing all the section of the PDD which is the latest at the time of global stake holder consultation process.

Nevertheless, CAR A2, CAR A3, CAR A4, CAR A5 and CL A1 were raised during validation process and closed successfully.

#### **4.1.4 Technology to be employed**

The Project Participant was not involved in generation of hydro based power and supplying to the CEB grid at the same site under the pre-project scenario therefore, in the absence of the project activity, the equivalent amount of electricity would have been generated from the connected / new power plants in the CEB grid, which are / will be predominantly based on fossil fuels. The main emission source in the pre-project scenario is the power plants connected to the CEB grid and the main Green House Gases involved is CO<sub>2</sub>.

The project activity is a run-of-the river hydropower constructed on the River Kuru Ganga with a total installed capacity 7.008 MW which is per the supplier technical details however as per the civil design and also as per SPPA signed with CEB the maximum power generation is of 6.5 MW<sup>2</sup> which can generate about net electricity of 19.93 GWh /year at a PLF of 35%<sup>3</sup>

In order to divert the water intake a small concrete gravity structure with dowels for added safety against sliding weir of 25 meters length with a maximum height of 2 meter has been constructed across the river. The intake conduit in which water will flow is of 10 meters x 3.6 m x 1.5 m with closed reinforced concrete conduit with a flow area of 3.6 meters wide and 1.5 meter high which leads to the Head race channel of 280 meters. The initial 10 meters of the channel from the Intake is a closed conduit. From the headrace channel, water is led to a Forebay. A silt settling tank is provided to settle any silt and sand. The water from the Forebay is taken through a Penstock for a distance of 2250 meters across a terrain. Water flows at a total head of 153 meters through the penstock to the three turbines in the Power house. The hydro turbines used for the project activity is of Francis type Turbine manufactured by Gilbert Gilkes & Gordan Ltd., United Kingdom which has been selected due to the flow available in the project activity. Each turbine is connected to a Synchronous Generator. The electricity is generated at 690 V, which is stepped up to 33 KV through 3 nos. 3 MVA Transformers. The stepped up electricity is connected to the grid of electric utility grid, Ceylon Electricity Board (CEB). The exported energy is transmitted through a 33 KV line for a distance of 25 km to the Ratnapura Grid Sub-Station. The invoice meter is installed at the power house of the hydro power plant, therefore transmission losses need not to be considered. The same has been observed and cross checked during the on-site visit<sup>/IM-01/</sup>

The power generation from hydro energy is a clean technology and thus, electricity would be generated through sustainable means without causing any negative impact on the environment. Hence, the technology adopted for the project activity is environmentally safe and sound technology.

<sup>2</sup> The Validation team had checked the maximum power output from the standpoint of the design of the civil structure (Civil Engineer Certificate, the hydrology study), the power purchase agreement ( SPPA with CEB ) and the manufacturer of the Turbine- generator (certificate from Gilbert Gikes & Gordan Ltd.). Validation team has verified that, for all practical purposes the project will remain a hydro power project of maximum installed capacity of 6.5 MW.

<sup>3</sup> Hydrology Study by M/s Ovara Consultants (Engineering consultant)

#### **4.1.5 Small Scale Projects**

The project activity involves generation of grid connected electricity from renewable hydro energy. Since the capacity of the project activity is 6.5 MW which is less than the maximum qualifying capacity of 15 MW for a small scale CDM project activity under Type-I of the small scale methodologies and this capacity will not increase throughout the whole crediting period of 7 years<sup>/IM-01/</sup>

### **4.2 Project Baseline, Additionality and Monitoring Plan**

#### **4.2.1 Application of the Methodology**

The project applies approved baseline and monitoring methodology “Grid connected renewable electricity generation”; Version 13 which is valid during the Global Stake holder consultation process.

The project correctly applies reference of tool, which methodology AMS.I.D. drawn upon: “Tool to calculate the emission factor for an electricity system”; Version: 1.1”

Nevertheless, CL B1 and CL B2 were raised during the validation process and closed successfully.

#### **4.2.2 Project Boundary**

AMS I.D. specifies that project boundary encompasses the physical, geographical site of the renewable generation source. The project boundary is thus composed of diversion structure, penstock, powerhouse, DG Set, tail race channel and the transmission system till switch yard. The project activity is connected to the Ceylon Electricity Board’s grid.

Nevertheless, CAR B1 is raised during the validation process and closed successfully.

#### **4.2.3 Baseline Identification**

The project category I.D. is renewable electricity generation for a grid system, which is fed by both fossil fuel fired generating plants (using fossil fuels such as coal, natural gas, diesel, naphtha etc.) and non-fossil fuel based generating plants (such as hydro, nuclear, biomass and wind). Hence, the applicable baseline, as per AMS I.D is the kWh produced by the renewable generating unit multiplied by an emission

coefficient (measured in kg CO<sub>2</sub>e/kWh) calculated in a transparent and conservative manner as:

(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'.

OR

(b) The weighted average emissions (in kg CO<sub>2</sub>e/kWh) of the current generation mix.

The project participant used the "Tool to calculate the emission factor for an electricity system" to determine the emission coefficient as per 9(a) of the indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories I.D./Version 13 methodology. And "Tool to calculate the emission factor for an electricity system" states that electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations. In this case the Combined Margin (weighted average of Simple Operating Margin and Build Margin) is estimated based on three years average (2005, 2006 and 2007) of Simple Operating Margin and 20 % Build Margin of current year (2007) is in line with steps of "Tool to calculate the emission factor for an electricity system". Both the value of Simple Operating Margin and Build Margin are selected under ex-ante approach. The net electricity generation from the project activity is exported to the Ceylon Electricity Board's grid.

In accordance with "Tool to calculate the emission factor for an electricity system", 'Dispatch Data Analysis' is the first methodological choice out of four options of calculating OM emission factor. Nevertheless the "Dispatch data analysis operating margin" is ruled out in Sri Lanka due to lack of necessary dispatch data of the grids.

Out of other 3 options of calculating OM Project Participant has rightly selected simple OM emission factor calculation as the share of low cost / must run resources of the selected grid over the five most recent years (2003,2004,2005,2006and 2007) is < 50% of the gross grid generation/cea/. For hydro projects , "Tool to calculate the emission factor for an electricity system" allows the usage of the default weights are as follows: wOM =0.5 and wBM = 0.5. Using the above values the combined margin emission factor is valued at 0.6766 tCO<sub>2</sub>/MWh.

The same have been verified with the submitted documents i.e the letter issued by the Ceylon Electricity Board dated 08.04.2009 and 13.05.2009, the long term generation expansion plan of Ceylon Electricity Board 2006-2020 prepared by Ceylon Electricity Board, December 2005 and also the validation team has verified the authenticity of the submitted documents for the emission factor calculation during the onsite visit by interviewing the CEB personnel<sup>/IM-04/</sup>. Hence the validation team concluded the considered emission factor value for baseline emission calculation is deemed to be appropriate and valid.

## **Establishing Baseline**

The baseline is established using the approach of combined margin.



## 4.2.4 Calculation of GHG Emission Reductions

### **Baseline emissions**

Baseline emissions in the year y (in tCO<sub>2</sub>), BE<sub>y</sub>, due to displacement of grid-electricity are the product of the baseline grid emission factor for the year y, EF<sub>grid,y</sub> (in tCO<sub>2</sub>/MWh) and the net electricity supplied by the project activity to the grid in the year y, EG<sub>y</sub>, (in MWh), over the crediting period can be evaluated as below:

$$BE_y = EG_y * EF_{grid,y}$$

Where:

BE<sub>y</sub> = Baseline emissions of the project activity in the year y (tCO<sub>2</sub>)

EG<sub>y</sub> = Net electricity supplied to grid in year y (MWh)

EF<sub>grid,y</sub> = Baseline emission factor of the grid in the year y (tCO<sub>2</sub>/MWh)

Baseline emission factor is calculated as combined margin, consisting of a combination of operating margin (OM) and build margin (BM) factors according to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system'.

### **Project Emissions**

As per the AMS I.D./version 13, there are no project related emissions, therefore, PE<sub>y</sub> = 0. During the on-site visit by the validation team uses of Diesel Generator set for lighting of power house was not evident as the project was under construction phase. However, in future PP<sup>/IM-01/</sup> has plans to installed Diesel Generator set for the lighting of Power House in emergency case. So, basis of calculating the project emission with the use of diesel is explained in the section B.6.3 of revised PDD<sup>/PDD/</sup>.

### **Leakage**

As per the AMS I.D./version 13, if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered

No equipment transfer of any type is taking place, hence the leakage is considered as zero, L<sub>y</sub> = 0

### **Emission Reductions**

The project activity reduces carbon dioxide emissions through displacement of grid electricity generation with predominantly fossil fuel based power plants by renewable electricity. The emission reduction ER<sub>y</sub> due to project activity during a given year y is estimated as the difference between baseline emissions (BE<sub>y</sub>), project emissions (PE<sub>y</sub>) and emissions due to leakage (L<sub>y</sub>), as per the formulae given below:



$$ER_y = BE_y - PE_y - L_y$$

Where,

$BE_y$  = Baseline emissions in the year  $y$  in  $tCO_2$

$PE_y$  = Project emissions in the year  $y$ .

$L_y$  = Emissions due to leakage in the year  $y$ .

Here,

$PE_y = 0$  for the project activity as per the methodology.

$L_y = 0$  for the project activity.

Therefore,  $ER_y = BE_y$

Nevertheless, CAR 17 has been raised and successfully closed.

#### **4.2.5 Additionality Determination**

##### **Consideration of CDM in decision making (if project start before validation)**

The project developer has stated the start date of the project activity is January 21, 2008<sup>/PO/</sup> and has submitted a copy of the contract signed with M/s APS & Liyanage (Pvt.) Ltd for Penstock clearing, transportation & painting as evidence. Validation Team verified the PO<sup>/SD/</sup>. The project developer has not undertaken any construction or any real action on the implementation of the project activity prior to this date. Since the *real action of the project activity* had begun on January 21, 2008<sup>/SD/</sup>, as per Glossary of CDM terms (Version 05), this date is treated as the start date of the project activity as it is on this date the project participant has committed to expenditures related to the implementation or related to the construction of the project activity. *Therefore, the start date is in conformity with Glossary of CDM terms.*

The PDD was web-hosted for public comments on July 3, 2009, i.e., after the start date of the project activity. Since the start date of the project activity was before 2<sup>nd</sup> August 2008 and prior to the date of the publication of PDD for global stake holders' consultation, the project developer was asked to demonstrate the awareness of CDM benefits and serious consideration of CDM while taking the decision to implement the project activity as required by Annex 22 of EB 49.

Project developer informed the Validation Team that they came to know of CDM benefits from the bankers, Auditors, other industrial units and consultants and stated that in fact, the banks advised them to get the project registered as CDM activity to enable the project to become financially attractive. This fact is stated in the PDD and was confirmed by PP during personal interview. *Thus, the Validation Team was convinced that the PP was aware of CDM benefits at the time of decision making.*

In the light of the above, Board of Directors of the company, which is the only competent and authorized body to take a decision on setting up of this project activity met on November 22, 2007 and passed a resolution to the effect that the project

would have to avail of CDM in order to be implemented. PP stated that the very fact that the Board Resolution considers CDM benefits as imperative for implementing the project proves that the CDM benefits were the decisive factor in going ahead with the project. This fact was brought to the knowledge of DOE during the personal interview also. In support of this contention, PP also submitted a certified copy of the Board Resolution<sup>/MD/</sup> dated November 22, 2007 and the Validation Team verified the resolution during the site visit. The very fact that the resolution states that the project would have to avail of CDM in order to be implemented proves that the CDM benefits were decisive factor in the decision to go ahead with the implementation of the project. *In the above background, Validation Team was convinced that CDM benefits were seriously considered at the time of decision making and the benefits were decisive factors in the decision to go ahead with the implementation of the project activity.*

Project developer had also submitted a chronology of events<sup>/CHRO/</sup> in the project activity, which forms part of Section B5 of PDD. It could be seen there from that Board took the decision to go ahead with the project in November 22, 2007; CDM Consultant was appointed on March 20, 2008; HCA from DNA was received on September 20, 2008; local stakeholders' meeting was held in December 16, 2008; DOE was appointed in May 2009. Thus, it could be seen that the gap between any two CDM activities is less than one year. *Therefore, the Validation Team was satisfied of the parallel action taken by the PP in implementing the project and getting the project registered as CDM activity.*

Since the fulfillment of both the conditions stipulated vide paragraphs (6) and (8) of Annex 22 of EB 49 have been demonstrated with documentary evidence, Validation Team concludes that *there was a prior consideration of CDM; CDM benefits were decisive factor in the decision making and that continuing and real actions were taken to secure CDM status for the project activity*

### **Application of methodology / methodological tools**

The project is small scale in size. It has adopted the methodology AMS ID, which is appropriate for the project. Being a small scale project, the additionality of the project activity has been demonstrated using *Attachment A to Appendix B* [and Guidance to Investment Analysis (Annex 58 of EB 51)] in accordance with § 28 of the simplified modalities and procedures for small-scale CDM project activities. As all requirements specified vide § 28 of the simplified modalities and procedures are complied with by the project activity, this approach has been assessed to be appropriate for the additionality assessment for this project activity.

Project developer had chosen investment barrier to demonstrate the additionality. Benchmark analysis has been selected as investment analysis and project IRR as financial indicator. Having regard to the fact that the project involves investment and is funded by a mix of debt and equity, project IRR is the most suited for the project type and decision making context. Since in this instant case, as baseline is outside

the direct control of the project developer (grid connected power), the choice of the project developer is restricted to 'invest or not to invest', the benchmark approach is most suited as per Guidance 16 of Annex 58 of EB 51.

*In the above background Validation Team concludes that the additionality justification given by the project developer is in accordance with the requirements derived from the approved CDM methodology and the methodological tools referred therein.*

## **Alternatives**

This is a small hydro power generation project and is based on the Methodology AMS I-D Version. 13, which does not specify alternatives. Therefore, there are only two alternatives to the project activity, viz.,

- a) the proposed project activity *not undertaken as a CDM project activity*;
- b) *no project activity*, in which case equivalent amount of energy would be generated by grid electricity system through its currently operating power plants and by new capacity addition (which are mostly thermal), i.e., *status quo*.

Both the alternatives are in compliance with all applicable legal and regulatory requirements as

- the implementation of project activity is a voluntary initiative and is not mandatory or a legal requirement;
- the Electricity Act 2009 does not restrict or empower any authority to restrict the fuel choice for power generation;
- the applicable environmental regulations do not restrict the use of wind energy;, and
- there is no legal requirement on the choice of a particular technology.

However, of the two alternatives identified, alternative (i) cannot be considered realistic as further analysis in the following paragraph reveals that it faces barriers. Hence, alternative (ii) alone could be justified as realistic, credible and plausible alternative to the PP. However, this alternative would result in higher GHG emissions.

*Validation Team is, therefore, convinced that the project developer has taken into consideration all realistic and credible alternatives (having regard to the governing methodologies) including the project being undertaken as a non-CDM activity and continuation of current scenario.*

## **Investment analysis**

The project developer has submitted that the project activity is not economically feasible without benefits from CER revenue. Validation Team evaluated this claim through the following steps:

a) Suitability of financial indicator: The project developer had originally chosen pre-tax project IRR to demonstrate the additionality of the project. Since the project is in private sector and is subject to tax, clarification was sought on the appropriateness of using pre-tax project IRR as financial indicator. Based on the CAR raised, project developer modified the financial indicator to post tax project IRR. Use of post tax project IRR to demonstrate additionality has been considered appropriate having regard to the financing pattern of the project activity and its taxable status. Moreover, Guidance 12 of Annex 58 of EB 51 and Additionality Tool (Ver. 05.2, which is the latest) permit the use of project IRR as financial indicator for demonstrating the additionality using benchmark analysis. The selection of post tax project IRR as financial indicator is appropriate for the project type and decision making context and also conforms to the guidance given vide Annex 58 of EB 51.

b) Suitability of investment analysis: In the web hosted PDD, project developer had selected Weighted Average Cost of Capital (WACC) as benchmark. Since there were errors in the WACC computation, clarification was sought. Consequent upon the clarifications sought, project developer modified the benchmark to Commercial Lending rate. Guidance on the Assessment of Investment Analysis (Ver 02) states, “*Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR*”<sup>4</sup>. The project developer has chosen the Bank Prime Lending Rate (PLR), as the benchmark. At the time of decision making the Bank PLR was 18.31%<sup>5</sup>. This benchmark satisfies the conditions stipulated in Annex 58, EB 51 (guidance 13) in as much as this rate is publicly available for validation by the DOE and this rate is being used by the commercial bank to take financing decisions, in that if the project activity is unable to service the loan at the stipulated rate of interest (18.31%), the project activity would not be eligible for financial assistance. The modified benchmark of 18.31% is also conservative to the benchmark given in the web-hosted PDD (18.64%). *Therefore, the Validation Team concludes that the benchmark selected by the project developer is appropriate and conforms to the Guidance on the Assessment of Investment analysis.*

c) Parameters and assumptions used: Validation team verified project cost, financing pattern, and profitability estimates, which determine the additionality of the project activity.

The project cost includes land, civil works including pen stock and power house, electro mechanical items, transmission lines, erection and installation and pre-operative cost. All these costs are based on the revised Feasibility Study Report (FSR) prepared in November 2007, which in turn is based on offers received from various vendors.

The financing pattern yields a gearing of ~50:50, which is based on actual loan sanctioned to the project activity by the banks. Validation team has been furnished with sanction letters as also the undertaking from the project developer to finance the

<sup>4</sup> Annex 58 of EB 51, Guidance on the Assessment of Investment analysis

<sup>5</sup> [http://www.cbsl.gov.lk/info/cei/ir/i\\_4.asp?date=&Mode=2&Page=5](http://www.cbsl.gov.lk/info/cei/ir/i_4.asp?date=&Mode=2&Page=5)

balance amount through equity. Hence, the financing pattern is considered appropriate for the project activity.

The profitability estimates of the project, which forms the basis for IRR calculation is based on installed capacity, PLF, power tariff, O&M cost, interest<sup>6</sup>, depreciation, taxation. Besides, two small expenses, viz., water levy and land lease charges, which are based on Government notifications, also form part of expenses. The installed capacity is a computed figure based on the capacity of turbines, which is evidenced by the purchase orders besides, FSR and PPA; PLF is based on the hydrological study conducted by an independent hydrological expert and hence conforms to Annex 11 of EB 48<sup>7</sup>. Power tariff is based on PPA signed by the project activity with CEB, a state utility, to whom the entire power would be exported. O&M cost is based on detailed estimates (forming part of worksheet), which is based on FSR. Depreciation rates stipulated by Inland Revenue Act of Sri Lanka have been adopted for income tax calculation. Pre-operative expenses have been capitalized in conformity with Sri Lankan Accounting Standards 20 (SLAS 20), and also the ruling given u/s 23 (b) (iv) [Act 4/25 C.I.R. (Corporate Taxes)] by the Inland Revenue Department. Tax liability has been calculated based on the income tax rates applicable at the time of decision making as per the Inland Revenue Act. In computing the income tax liability, the project developer has taken into account 5 year Tax holiday (as of Board of Investment Agreement. Tax liability arising out of Economic Service Charge (ESC) and Social Responsibility Levy have been provided for and accounted for as per the provisions of the Act.

d) Cross checking parameters: As could be observed, all the input values are based on Feasibility Study Report<sup>/FSR/</sup>. Feasibility Study Report was prepared by Vallibel Power Ltd., a third party contracted by the project developer. Besides, the loan amount, loan terms, income tax rates, depreciation, are supported by loan sanction letters and Inland Revenue Act. Revised Feasibility Study Report<sup>/FSR/</sup> was completed in November 2007 and the investment decision<sup>/MD/</sup> was also made in the last week of the same month based on the Feasibility Study Report. Paragraph 111 of VVM<sup>/VVM/</sup> states, where the FSR has been the basis of the decision to proceed with the investment in the project, i.e., that the period of time between the finalization of the Feasibility Study Report and the investment decision should be sufficiently short to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed. Since the time elapsed between the Feasibility Study Report preparation date and the Board Meeting date (In which serious consideration of CDM benefits was made), is hardly a few days, the Validation Team is convinced that the input parameters used in the Feasibility Study Report were valid and applicable at the time of investment decision.

The project cost works out to LKR 137.6 mn. per MW. Though 4 small hydro power projects have been registered as CDM activity with UNFCCC till now, none of them

<sup>6</sup> Loan amount and terms are based on actual loan sanction letter

<sup>7</sup> Since it represents the estimates made by an independent third party engineer engaged by the company [paragraph II (3) (b) of Annex 11, EB 48]



has used investment analysis to demonstrate additionality. Hence, the investment data is not available in respect of any of those projects. However, the DOE has validated a few SHP projects in Sri Lanka. The investment in those projects range from LKR 116.10 mn./MW to LKR 168.56 mn./MW. Hence, the validation team is convinced that the project cost of LKR 137 mn./MW is reasonable<sup>8</sup>. CARs and CLs were raised on non-conformities and they were set right. With the corrections having been incorporated, the input costs considered appear to be in order. All the input parameters considered in computation, the basis, correctness and appropriateness thereof are given in Table A-3 along with Validation Team's comments.

e) Assessment of correctness of computation: The assessment involved checking the data input taken from FSR, loan documents, Inland Revenue Act, adoption of correct accounting principle and arithmetical accuracy. Validation Team received the documents<sup>/ADD/ /FSR/</sup>, checked them and ensured that right input values considered in additionality demonstration are appropriate. In several places, calculations were not conforming to accepted accounting principles and the laws and regulations in force necessitating CARs and CLs. Based on the CARs and CLs, corrections were incorporated. The accounting principles adopted with respect computation of interest, capitalization of assets and tax computation were found to be in order in the corrected version presented. The arithmetical accuracy was also found to be correct.

The project IRR has been computed for a period of 21 years<sup>9</sup>, which is less than the life time of the project<sup>10</sup> and this is in conformity with the Annex 58 of EB 51<sup>11</sup>. As required by Annex 58 of EB 51 the expected realisation on the sale of assets at the end of the operating life has been taken as *salvage value* in the terminal year. In computing the IRR, the project developer has taken into account profit after tax, depreciation and interest on term loan and salvage value (in the terminal year). The principle adopted conforms to the accepted accounting and taxation principles.

Based on the above, the project IRR works out to 16.13% in contrast to the benchmark of 18.31%. This is in contrast to the project IRR of 16.46% and benchmark of 18.64% presented in the web hosted PDD. The minor difference is due to the accounting of Social Economic Levy and Economic Service Charge which were omitted in the web hosted PDD and other changes in the calculation consequent upon the CARs/CLs raised to ensure the accounting conform to accepted accounting principles.

Sensitivity analysis: The Guidance on Assessment of Investment Analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis

<sup>8</sup> Moreover, converted into Indian Rupee (at the exchange rate prevailing at the time of decision making, i.e., Indian Rupee (INR) 1= Sri Lankan Rupee( LKR) 2.80), the cost works out to Rs. 49 mn./MW, which is almost equivalent to Rs.50 - Rs.65 mn./MW recommended by Indian regulatory agencies for SHP.

<sup>9</sup> PDD assumes project IRR calculation of 21 years, since in the first year generation has been assumed for 9 months only. Instead of restricting the generation to only 3 months in 21<sup>st</sup> year, projections have been made for full year, which is conservative

<sup>10</sup> The life time is 25 years based on the manufacturer of the plant is based on the turbine manufacture certificate for 25 years.

<sup>11</sup> Point 3 of Annex 58 of EB 51.( Project IRR calculation should be done for a minimum of 10 years and a maximum of 20 years).

by varying the critical assumptions to a reasonable variation ( $\pm 10\%$ ). The project developer has identified PLF, project cost and O&M cost as the most critical assumptions. Though O&M cost is less than 20% of total revenue, it has been considered, as it is the only expense in the projections. The sensitivity analysis reveals that even under more favorable conditions, the IRR would not cross the benchmark return as given in the following table:

Sensitive factors	-10%	Baseline	+10%
Plant Load Factor (PLF)	14.16%	16.13%	18.00%
Project cost	17.96%	16.13%	14.57%
O&M cost	16.40%	16.13%	15.85%

Validation Team carried out its own an independent assessment, which reveals that the project would become *non additional* only if

- PLF goes up by 12%
- Project cost goes down by 12%
- O&M cost goes down by 85%

PP has submitted that such a reduction in project cost or increase in PLF is highly unrealistic and unlikely to happen for the following reasons:

PLF: Generation taken into consideration is based on detailed hydrological study carried out. Hence, though in a few years, the PLF might cross 35%, to get a PLF of 39.2 (which a 12% increase in PLF would result in, i.e.,  $35 \times 1.12$ ) on a sustained basis is highly hypothetical and unrealistic considering the fact that it is a run of the river project and solely dependent on rainfall.

Project cost: As stated above, the cost taken into computation is based on FSR and the company is reported to have faced overruns. Therefore, the project cost coming down is hypothetical.

O&M cost: It is observed that O&M cost is not a critical factor at all in as much as only 85% reduction in O&M cost would render the project non-additional. Eight five percent reduction in O&M cost is impossible, particularly when the country is experiencing an average inflation of more than 10% over the past 5 years.

Validation team did not subject tariff to sensitivity analysis as it is governed by the PPA. Tariff enshrined in the PPA is not only firm, but can also go down. As per PPA, the project proponent is contractually obligated to accept any rate announced by the CEB. The CEB has guaranteed only 90% of the stated tariff in the Standard Power Purchase Agreement to the project proponent. This means, that the tariff will not go below the guaranteed tariff in the next year, which is 90% of the stated tariff in the Standardized Power Purchase Agreement (SPPA). Still the Project proponent has no option other then selling the power to CEB due to the lack of opportunity to sell power outside the CEB controlled grid.



Validation Team is in agreement with PP's submission.

Having regard to the assessment of conformity of additionality demonstration and benchmark selection to the latest version of the Guidance issued by EB on the assessment of investment analysis, plausibility and appropriateness of parameters used and correctness of financial calculations, Validation Team has arrived at the conclusion that the project scenario is not economically feasible without benefits from CER sales.

### **Barrier analysis**

Project developer did not consider barrier analysis. Hence, this is not applicable. Since the project developer has demonstrated the additionality of the project with investment barrier, demonstration of additionality through barrier analysis is not required as per the methodology.

### **Common practice analysis**

Since it is a small scale project activity, PP is not required to demonstrate common practice barrier. As per Attachment A to Appendix B (and Annex 34 of EB 35), the project developer is required to provide an explanation to show that the project activity would not have occurred anyway due to at least one barrier out of five barriers<sup>12</sup>. Since project developer had chosen investment barrier, additionality demonstration is in conformity with Attachment A to Appendix B read with Appendix 34 of EB 35.

### **Summary**

In the above background, Validation Team has come to the conclusion that the project is additional and not a business-as-usual scenario. The CDM benefits would enable the project to become financially attractive in as much as the project IRR with CDM benefits (18.59%) would cross the benchmark (18.31%) and hence CDM benefits would enable the project developer to overcome the barrier.

Nevertheless, CAR B2, CAR B3, CAR B4, CAR B5, CAR B6, CAR B7, CAR B8, CAR B9, CAR B10, CAR B11, CAR B12, CAR B13, CAR B14, CAR B15, CAR B16 and CL B3, CL B4, CL B5, CL B6, CL B7, CL B8, CL B9, CL B10 were raised during the validation process and successfully closed.

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<sup>12</sup> While Attachment A to Appendix B lists only four barriers, viz., investment barrier, technological barrier, barrier due to prevailing practices and other barriers, Annex 34 of EB 35, had split investment barrier into two resulting in five barriers, viz., investment barrier, access to finance barrier, technological barrier, barrier due to prevailing practices and other barriers.

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#### **4.2.6 Monitoring Methodology**

All applicable monitoring parameters are contained in the monitoring plan. The monitoring plan is in compliance with the monitoring methodology

#### **4.2.7 Monitoring Plan**

The project applies the monitoring methodology “Grid connected renewable electricity generation”; Version 13 which is valid during the Global Stake holder consultation process.

This methodology stipulates that monitoring shall consist of net electricity exported from the project activity. The Net electricity is calculated based on the electricity export and import for the project activity. The monitoring plan provided detailed information related to the collection and archiving of all relevant data needed to determine the baseline emissions and estimate changes in emissions from the site.

Nevertheless, CAR B17, CAR B18, CAR B19 and CAR B20 were raised during the validation process and closed successfully.

#### **4.2.8 Project Management Planning**

The project management will be taken care by the project participant M/s Alternate Power Systems (Pvt.) Ltd. The individual roles and responsibilities related to CDM activity is clearly mentioned in the PDD. Please refer section B.7.2 of the PDD.

Nevertheless, CAR B21 has been raised during the validation process and closed successfully.

#### **4.2.9 Crediting Period**

PP has chosen renewable crediting period for the project activity i.e.7 years which is consistent in the entire PDD. The start date of crediting period during the global stake holder consultation process was 1/10/2009. But as the validation progresses, validation team raised CAR C1 and the crediting period start date is postponed to 01/06/2010 which is appropriate and acceptable to the validation team.

However, CAR C1 was raised during the validation process and closed successfully.

#### **4.2.10 Environmental Impacts**

Hydro power is one of the cleanest sources of renewable energy, with no associated emissions and waste products. In Sri Lanka, it is mandatory for all new projects to

take approval from the Central Environmental Authority (CEA) which investigates the environmental and social impacts from the project. Due to the small size of the investment, CEA guidelines allow the project developers to prepare an Environmental Examination Report rather than a very comprehensive Environmental Impact Assessment. The content of the environmental impact assessment along with supporting documents submitted to the CEA is given the section D.1 of PDD.

After submission of Environmental Examination Report to CEA, the CEA official visit the site with a team of experts and obtain clarifications if required, prior to granting approval for the project.

The Environmental Examination Report (EER) is submitted along with following documents and all documents have been submitted to the DOE:-

- Geological report.
- Proposed environment monitoring plan.
- Soil conservation management plan.
- Approval from CEB for sale of electricity.
- No Objection Certificate (NOC) from Chief Minister Office of Sabaragamuwa Province.
- NOC from Department of Agrarian Services, Ratnapura
- Water Right from Divisional Secretary for diversion of water.
- NOC from Irrigation Department
- Approval from National Water Supply & Drainage Board
- Renewable Energy Permit from Sri Lanka Sustainable Energy Authority

Also, the environmental approval of CEA dated 17/02/2005, extension of the environmental approval dated 02/01/2008, Generation License issued by Ministry of Power & Energy dated 01/03/2005.

It is evident from the supporting documents that the environmental assessment has been conducted as requires by the host country of the proposed SSC CDM project activity and found that there no environmental impact of the by the project activity.

No CARs/CLs has been raised.

#### **4.2.11 Comments by Local Stakeholders**

M/s Alternate Power Systems (Pvt.) Ltd. conducted a stakeholder's consultation meeting on 16/12/2008 at the Paladeniya School, which is situated near the project activity site, to get the comments and suggestions of the local stakeholders on the project activity. Following are the stakeholders identified for the project activity:

- Local Villagers
- Technology Supplier
- Local NGO's members

- 
- Government Officials
  - Intellectual working in the Local Area
  - Company Employees of APSL

M/s Alternate Power Systems (Pvt.) Ltd has invited the local stakeholders by way of Press Advertisements in two national news papers (both in English and Sinhalese) and also by way of direct invitation to some of the key stakeholders.

The list of the persons attended the stakeholders' consultation meeting is available with the project proponent. The project participant made all the necessary arrangements for the meeting like arrangement for sitting, putting a banner, photography, provision of refreshments etc. The Managing Director of M/s Alternate Power Systems (Pvt.) Ltd. welcomed all those present and briefed them about the proposed CDM project activity and various activities undertaken by the project developer for the socio-economic advantage of the local community / residents of the Adavikanda Village where the project is located. He highlighted the importance of the project to the national power scenario and the economy. At the end of the presentation, the Managing Director invited the participants to ask any question or raise any issues arising from the construction of the project that may be of concern to them.

However, CL E1 has been raised and successfully closed.

## 5 VALIDATION OPINION

M/s Alternate Power Systems (Pvt.) Ltd. has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "Adavikanda, Kuruwita Division Mini Hydro Power Project" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords) and the relevant decisions by COP/MOP and CDM Executive Board

In the course of the pre-validation 26 Corrective Action Requests (CARs) and 14 Clarification Requests (CLs) were raised and successfully closed.

The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.

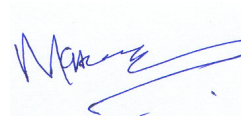
In detail the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria (Sri Lanka) and all relevant UNFCCC requirements for CDM. Project activity approval have been obtained from DNA of Sri Lanka vide the Letter of Approval (HCA) dated 08.07.2009 from DNA of Japan dated 04.08.2009.
- The project additionality is sufficiently justified in the PDD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 94,381 tCO<sub>2</sub>e are most likely to be achieved within the (1st renewable) crediting period.

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

Bangalore, 2010-03-30

Essen, 2010-03-30



Ma.Paa.Puratchikkanal

Rainer Winter

TÜV NORD JI/CDM CP  
Validation Team Leader

TÜV NORD JI/CDM CP  
Final Approval

## 6 REFERENCES

**Table 7-1:** Documents provided by the project participant

Reference	Document
/ADD/	<ul style="list-style-type: none"> <li>Commercial Bank-loan offer letter dated 17.06.2005</li> <li>DFCC Bank- offer letter dated 30.05.2005</li> <li>APS letter to DFCC Bank requesting additional funds dated 04.10.2007</li> <li>APS letter to Commercial Bank requesting additional funds dated 04.10.2007</li> <li>Adavikanda Mini Hydro Power Project-Financial Model dated November 2007</li> <li>Commercial Bank- New loan offer letter dated 20.11.2007</li> <li>DFCC Bank-Additional loan of Rs.75 Mn</li> <li>DFCC Bank-Fresh offer letter for previously approved loan</li> <li>Piyawardena Associates- confirmation of Project expenditure upto May 30,2009</li> <li>Piyawardena Associates- confirmation of Project expenditure upto July 31,2009</li> <li>Ernst &amp; Young- confirmation of depreciation rate dated 10.08.2009</li> <li>Ernst &amp; Young- confirmation of depreciation rate dated 27.08.2009</li> <li>DFCC Bank- loan disbursement confirmation dated 06.08.2009</li> <li>Commercial Bank-loan disbursement confirmation 07.08.2009</li> <li>Registrar of Companies- Equity Contribution of Rs.422 Mn dated 27.04.2009</li> <li>DFCC Bank dated 16.05.2008 - Invoice Payable on 30 May 2008</li> <li>Bank's letter on the PLF assumed in project appraisal</li> <li>Inland Revenue Act certified on 31.03.2006.</li> <li>Economic Service Charge Act, No. 13 of 2006 (Sri Lanka)</li> <li>Board of Investment notification</li> <li>Purchase of Electricity to the National Grid under Standard Power Purchase Agreements (SPPA) - Explanatory notes to the Non Conventional Renewable Energy Tariff Announcement dated 24/04/ 2009</li> <li>Monthly Average Exchange Rates – Central Bank of Sri Lanka</li> <li>Confirmation letter dated 19.10.2009 from the CEB on tariff rates declared from 1996-2007.</li> <li>Confirmation from Turbine Manufacturer's Gilbert Gilkes on refurbishing cost dated 02.10.2007.</li> </ul>
/CEA/	<ul style="list-style-type: none"> <li>Central Environmental Authority approval 17.02.2005</li> <li>Central Environmental Authority extension 02.01.2008</li> <li>Central Environmental Authority extension 08.07.2008</li> </ul>

<b>/CEB/</b>	Letter issued by Ceylon Electricity Board dated 08.04.2009, 13.05.2009 and the Long Term Generation Expansion Plan of Ceylon Electricity Board 2006-2020
<b>/CHRO/</b>	<p>Chronology of events- prior to CDM Consideration</p> <ul style="list-style-type: none"> <li>• Copy of Feasibility Study Report by the consultant - Ovara (Private) Limited dated April, 2005.</li> <li>• Bank approval for financing the project – copy of letter from DFCC Bank dated 30.05.2005 and copy of letter from commercial bank of Ceylon Limited dated 17.06.2005</li> <li>• Copy of the extracts from the minutes of the Board meeting to undertake the project without CDM revenue dated 22.06.2005</li> <li>• Copies of land deeds execution dated 28.05.2007.</li> <li>• Copies of land deeds (second part) dated 03.10.2007.</li> <li>• Copy of Bank application for additional financing to two Banks dated 04.10.2007</li> <li>• Copy of Revised Feasibility Report dated November, 2007 by Vallibel Power Ltd.</li> <li>• Bank loan approval for additional finance dated 20.11.2007</li> </ul> <p>Chronology of events- with CDM Consideration</p> <ul style="list-style-type: none"> <li>• Copy of extracts of the Board resolution to undertake the project with CDM dated 22.11.2007.</li> <li>• Copy of the offer from Mitsubishi UFJ Securities for providing Consulting Services dated 12.12.2007.</li> <li>• Copy of the contract for Penstock clearing, transportation &amp; Painting with M/s Alternate Power Systems ( Pvt.) Ltd dated 21.01.2008.</li> <li>• Copy of the signing of CDM consulting agreement with Mitsubishi UFJ securities for CDM consulting services dated 20.03.2008.</li> <li>• Copy of the application for submission of PIN to the Sri Lankan, DNA dated 11.09.2008</li> <li>• Copy of the letter for in-principle approval from DNA dated 29.09.2008</li> <li>• Copy of the minutes of the meeting for stakeholder consultation meeting dated 16.12.2008.</li> <li>• Copy of the proposal from TUV-Nord for the offer of validation services dated 13.02.2009.</li> <li>• Copy of the Work Order from M/s Alternate Power Systems (Pvt.) Ltd. to TUV-Nord for carrying out CDM Validation for the project activity dated 29.05.2009.</li> </ul>
<b>/CON/</b>	Commissioning certificate dated 25.09.2009 issued by Ceylon Electricity Board.



<b>/EER/</b>	<ul style="list-style-type: none"> <li>• Geological Report dated February'2004.</li> <li>• Environment Monitoring Plan dated 07.05.2008</li> <li>• Approval from CEB for sale of electricity dated 31.10.2003.</li> <li>• No Objection Certificate (NOC) from Chief Minister Office of Sabaragamuwa Province dated March'2001.</li> <li>• NOC from Department of Agrarian Services, Ratnapura dated 08.07.2004.</li> <li>• Water Right from Divisional Secretary for diversion of water dated 14.01.2004,</li> <li>• NOC from Irrigation Department dated 09.11.2004.</li> <li>• Approval from National Water Supply &amp; Drainage Board dated 16.11.2004.</li> <li>• Renewable Energy Permit from Sri Lanka Sustainable Energy Authority dated 24.10.2008.</li> </ul>
<b>/FSR/</b>	<ul style="list-style-type: none"> <li>• Detailed Feasibility Report dated April 2005 containing hydrology study by Ovara (Private ) Limited</li> <li>• Revised Feasibility Project Report dated November 2007 by Vallibel Power Ltd.</li> </ul>
<b>/HCA/</b>	<ul style="list-style-type: none"> <li>• Host Country Approval by Ministry of Environment &amp; Natural Resources, Sri Lanka dated 08.07.2009</li> <li>• Host Country Approval by Minister of Economy, Trade and Industry of Japan dated 04.08.2009, DNA of Japan</li> </ul>
<b>/IRR/</b>	<ul style="list-style-type: none"> <li>• IRR calculation sheet 1</li> <li>• IRR calculation sheet 2</li> </ul>
<b>/LSC/</b>	<p>Stakeholder consultation process evidences:</p> <ul style="list-style-type: none"> <li>• Attendance</li> <li>• Minutes of meeting</li> <li>• Press Notices</li> <li>• Questionnaires</li> <li>• Invitation Letter</li> <li>• Photographs</li> </ul>
<b>/MD/</b>	<ul style="list-style-type: none"> <li>• Extract of Board Minutes held on 22.06.2005- Approval to implement the project.</li> <li>• Extract of Board Minutes held on 22.11.2007- Initiate CDM registration process.</li> </ul>
<b>/MOC/</b>	<p>Modalities of Communication signed by both the project participants for the project activity dated 24.09.2009.</p>

<b>/PDD/</b>	<ul style="list-style-type: none"> <li>Draft Project Design Document named “Adavikanda, Kuruwita Division Mini Hydro Power Project.” by Alternate Power Systems (Pvt.) Ltd., version 1 dated 25/06/2009 hosted from 03.07.2009 to 01.08.2009</li> <li>Final Project Design Document named” Adavikanda, Kuruwita Division Mini Hydro Power Project” by Alternate Power Systems ( Pvt.) Ltd., version 2 dated 26.02.2020.</li> </ul>
<b>/PDD-T/</b>	Project Design Document Form (CDM PDD) – Version 03
<b>/PLF/</b>	<ul style="list-style-type: none"> <li>CEB letter dated 23.06.2005 acknowledging the receipt of Detailed Project Report</li> <li>Bank certificate dated 16/10/2009 confirming the consideration of PLF during the appraisal of the project activity for Debt financing.</li> </ul>
<b>/PO/</b>	<ul style="list-style-type: none"> <li>Contract of Penstock Clearing, Transportation &amp; Painting between Alternate Power Systems ( Pvt.) Ltd. &amp; Liyanage (Pvt.) Ltd. dated 21.01.2008</li> <li>Proforma Invoice for Turbine &amp; Machinery from Gilbert Gilkes &amp; Gordon Ltd dated 03.03.2008.</li> <li>Proforma Invoice for Penstock from Qingdao Highroad International Trade Co. Ltd. dated 17.09.2007.</li> <li>Proforma Invoice for Transformers from Lanka Transformers Limited dated 17.09.2008.</li> <li>Proforma Invoice for Power Cables from ACL Cables PLC dated 25.05.2009.</li> <li>Proforma Invoice for Vacuum Switch Gears from Gunkel dated 04.11.2008.</li> <li>Proforma Invoice for OH Crane from Jiangsu Jiali Hoisting Machinery Manufacturing Co. Ltd dated 30.12.2008.</li> <li>Contract document for Turbines, Generators and Associated Equipment from Gilbert Gilkes &amp; Gordon Ltd. dated 28.02.2008.</li> </ul>
<b>/PPA/</b>	Standardised Power Purchase Agreement (SPPA) dated 14.06.2006
<b>/SC/</b>	<ul style="list-style-type: none"> <li>Chief Minister Sabaragamuwa Province dated March 2001- Original Approval.</li> <li>Chief Minister Sabaragamuwa Province dated March 2001- Official English Translation.</li> <li>Kuruwita Pradesiya Sabha ( Local Government Body) dated 24.06.2004- Original Approval.</li> <li>Kuruwita Pradesiya Sabha ( Local Government Body) dated 24.06.2004- Official English Translation.</li> <li>Pradeshiya Secretariat- water rights &amp; water levy dated 14.01.2004- Original Approval</li> <li>Pradeshiya Secretariat- water rights &amp; water levy dated 14.01.2004-</li> </ul>

	<p>Official English Translation</p> <ul style="list-style-type: none"> <li>• Land Commissioner's Department dated 19.09.2001- Original Approval</li> <li>• Land Commissioner's Department dated 19.09.2001- Official English Translation</li> <li>• Department of Agrarian Services- no objection for water usage dated 08.07.2004- Original Approval</li> <li>• Department of Agrarian Services- no objection for water usage dated 08.07.2004- Official English Translation</li> <li>• Irrigation Department- no objection letter dated 09.11.2004</li> <li>• Ministry of Power &amp; Energy – (General License) Approval dated 01.03.2005</li> <li>• Sri Lanka Sustainable Energy Authority dated 24.10.2008 – Renewable Energy Permit EP-303301.</li> </ul>
<b>/SD/</b>	<p>Evidence of Project starting date</p> <ul style="list-style-type: none"> <li>• Contract of Penstock Clearing, Transportation &amp; Painting between Alternate Power Systems ( Pvt.) Ltd. &amp; Liyanage (Pvt.) Ltd. dated 21.01.2008</li> </ul>
<b>/SVY/</b>	<ul style="list-style-type: none"> <li>• Survey map of the project location issued by Sri Lankan Government Authority.</li> </ul>
<b>/TECH/</b>	<ul style="list-style-type: none"> <li>• Contract document for Turbines, Generators and Associated Equipment dated 28 Febraury 2008 between M/s Alternate Power Systems ( Pvt.) Ltd and the turbine manufacturer's M/s Gilbert Gilkes &amp; Gordan Ltd.</li> <li>• Certificate from Gilbert Gilkes &amp; Gordan Ltd. ( Turbine – Generator Supplier ) on Maximum rated output of the Turbine dated 07.10.2009</li> <li>• Certificate from D.F.M Perera Structural Engineering Consultant Civil Engineer on flow design capacity of 6.0 cumecs dated 14.07.2009</li> <li>• Certificate from Gilbert Gilkes &amp; Gordan Ltd. turbine manufacturer's about technical lifetime of the project equipments dated 25.02.2010.</li> </ul>
<b>/XLSE/</b>	<ul style="list-style-type: none"> <li>• Emission reduction calculation spreadsheet</li> <li>• Spreadsheet of Grid Emission Factor (GEF) calculation for Ceylon Electricity Board Grid.</li> </ul>

**Table 7-2:** Background investigation and assessment documents

Reference	Document
<b>/AMS I.D/</b>	Small scale methodology : AMS-I.D Grid connected renewable electricity generation version 13

Reference	Document
<b>/Guide/</b>	<ul style="list-style-type: none"> <li>• Indicative simplified baseline and monitoring methodologies</li> <li>• Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories - Appendix B of the simplified modalities and procedures for small-scale CDM project activities – Attachment A to Appendix B</li> <li>• Non-binding best practice examples to demonstrate additionality for SSC project activities – Annex 34, EB 35</li> <li>• Guidelines on the Assessment of Investment Analysis – Annex 58, EB 51</li> <li>• Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM – Annex 22, EB 49</li> </ul>
<b>/tool/</b>	Tool to calculate the emission factor for an electricity system
<b>/CPM/</b>	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
<b>/GCP/</b>	UNFCCC: Guidelines for completing CDM-PDD and CDM-NM
<b>/IPCC-GP/</b>	IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000
<b>/IPPC-RM/</b>	Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual
<b>/KP/</b>	Kyoto Protocol (1997)
<b>/MA/</b>	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))
<b>/VVM/</b>	Validation and Verification Manual (Version 1.1, Annex 3; EB 51)

**Table 7-3: Websites used**

Reference	Link	Organisation
/ceb/	<a href="http://www.ceb.lk/">http://www.ceb.lk/</a>	Ceylon Electricity Board
/ipcc/	<a href="http://www.ipcc-nggip.iges.or.jp">www.ipcc-nggip.iges.or.jp</a>	IPCC publications
/unfccc/	<a href="http://cdm.unfccc.int">http://cdm.unfccc.int</a>	UNFCCC

**Table 7-4: List of interviewed persons**

Reference	Mol <sup>1</sup>		Name	Organisation / Function
/IM-01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Leel Wickremarachchi	Managing Director- Alternate Power(P) Limited, Colombo, Sri Lanka
/IM-03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	H.W Gunadasa	Government Agent/ District Secretary, Ratnapura District
/IM-04/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms	Noel Priyantha	Chief Engineer, CEB( Transmission and Energy Purchases Division), Sri Lanka for emission factor calculation
/IM-01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	S.K.M Senerath	Senior Civil Engineer- Alternate Power (P) Limited., Colombo, Sri Lanka
/IM-01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Mangala Siriwardana	Site Manager- Alternate Power(P) Limited, Colombo, Sri Lanka
/IM-01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Russell De Zilva	Chief Operating Officer- Alternate Power(P) Limited, Colombo, Sri Lanka
/IM-01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Yogesh Suriyapperuma	Accountant- Alternate Power(P) Limited., Colombo, Sri Lanka
/IM-03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ajith Abeywardane	Village Representative (Attendee of Stakeholders Consultation meeting)
/IM-03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	G.W. Ajith Kulatunga	Chairman Erathna Sports Club (Attendee of Stakeholders Consultation meeting)



Reference	Mol <sup>1</sup>		Name	Organisation / Function
/IM-03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Chandrasiri Narasinghe	Retired School Principal , Adavikanda
/IM-03/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ajith Kulatunga	Secretary, Erathna Sports Club
/IM-02/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Akhilesh Joshi	CDM Consultant, Mitsubishi UFJ Securities Co., Ltd.

<sup>1)</sup> Means of Interview: (Telephone, **E-Mail**, **Visit**)

# ANNEX

- A1:** Validation Protocol
- A2:** Assessment of Baseline Identification
- A3:** Assessment of Financial Parameters
- A4:** Assessment of Barrier analysis
- A5:** Outcome of the GSCP
- A6:** Appointment certificates of the team members



## ANNEX 1: VALIDATION PROTOCOL

**Table A-1: Requirements Checklist**

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<b>A. General Description of Project Activity</b>				
<b>A.1. Approval</b> <i>The written approval of the parties involved is a mandatory requirement</i>				
A.1.1. Has the project provided written approvals of all parties involved? (EB 51 Annex 3 §44) <i>Indicate whether a letter of approval has been received, with a clear reference to the supporting documentation.</i> <i>Indicate whether this letter was provided to the DOE by the project participants or directly by the DNA</i>	<i>Description:</i> The Ministry of Environment and Natural Resources, Sri Lanka, is the DNA for the Host Country. Also, the project activity has a Annex -1 participation of Japan, Climate change division, Ministry of Foreign Affairs of Japan (MOFA) is the DNA of Japan. The PP has to submit a letter of approval issued by both the DNAs of Sri Lanka and Japan. <i>Justification of evidences:</i> The LOA from the Host Country, Designated National Authority, Ministry of Environment and Natural Resources, Government of Sri Lanka dated 29.09.2008 has been submitted directly by the project participant to the DOE.	/HCA/	CAR A1	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	<p>The LOA from the Designated National Authority, Minister of Economy, Trade and Industry of Japan dated 4.08.2009 has been submitted directly by the project participant to the DOE.</p> <p><i>Conclusion:</i></p> <p>The LOA from the Host Country, Designated National Authority, Ministry of Environment and Natural Resources, Government of Sri Lanka dated 29.09.2008 has been submitted directly by the project participant to the DOE.</p> <p>The LOA from the Designated National Authority, Minister of Economy, Trade and Industry of Japan dated 04.08.2009 has been submitted directly by the project participant to the DOE.</p> <p>The submitted LOAs has been verified and found to be ok. In this context please see CAR A1.</p>			
<p>A.1.2. Are the approvals issued from organisations listed as DNAs on the UNFCCC CDM website?</p> <p>(EB 51 Annex 3 §§ 44, 47, 48, 49 (b), 49 (c), 53)</p> <p><i>Indicate the means of validation employed to assess the authenticity, i.e. in case of doubt whether LoA has been verified with the DNA. Further describe which entity submitted the LoA for validation.</i></p>	<p><i>Description:</i></p> <p>Yes, Host country Sri Lanka is a party to Kyoto protocol.</p> <p><a href="http://maindb.unfccc.int/public/country.pl?country=LK">http://maindb.unfccc.int/public/country.pl?country=LK</a></p> <p>Also, the project participant, Japan is a party to Kyoto Protocol.</p> <p><a href="http://maindb.unfccc.int/public/country.pl?country=JP">http://maindb.unfccc.int/public/country.pl?country=JP</a></p> <p><i>Justification of evidences:</i></p> <p>The following web links are provided as evidences for cross verification</p>	<p>/HCA/  /unfccc/</p>	<p><del>CAR A1</del></p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<ul style="list-style-type: none"> <li><a href="http://maindb.unfccc.int/public/country.pl?country=LK">http://maindb.unfccc.int/public/country.pl?country=LK</a></li> <li><a href="http://maindb.unfccc.int/public/country.pl?country=JP">http://maindb.unfccc.int/public/country.pl?country=JP</a></li> </ul> <p><i>Conclusion:</i></p> <p>The DNAs of Sri Lanka and Japan have been listed in UNFCCC. It has been cross verified from the above web link as well as with the Host Country Approval documents. In this context please see CAR A1.</p>			
A.1.3. Do the written approvals confirm that the corresponding party is a Party to the Kyoto Protocol? (EB 51 Annex 3 §45, (a))	<p><i>Description:</i></p> <p>The letter confirms that the host country Sri Lanka ratified the Kyoto Protocol on 03 September 2002.</p> <p>Also the Japan is a member ratified the Kyoto Protocol on 04 June 2002.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>The LOA from the DNA Sri Lanka and Japan.</li> <li>The <a href="http://maindb.unfccc.int/public/country.pl?country=LK">http://maindb.unfccc.int/public/country.pl?country=LK</a> weblink for Sri Lanka.</li> <li><a href="http://maindb.unfccc.int/public/country.pl?country=JP">http://maindb.unfccc.int/public/country.pl?country=JP</a> for Japan.</li> </ul> <p><i>Conclusion:</i></p> <p>The LOAs Submitted has been cross verified. Sri Lanka and Japan are the party to the Kyoto Protocol. The same is also evidenced from the given weblinks of UNFCCC.. In this context</p>	/HCA/ /unfccc/	CAR A1	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	please see CAR A1..			
A.1.4. Do the written approvals confirm that the participation is voluntary? (EB 51 Annex 3 §45, (b))	<p><i>Description:</i></p> <p>The DNA approval confirms that the project activity is a voluntary participation by the PP, Alternate Power Systems (Pvt.) Ltd of Sri Lanka and also Mitsubishi UFJ Securities Co., Ltd., of Japan.</p> <p><i>Justification of evidences:</i></p> <p>The LOAs from the DNA of Sri Lanka and Japan.</p> <p><i>Conclusion:</i></p> <p>The LOAs have been verified and the found that the participation in the CDM project is voluntary. In this context please see CAR A1.</p>	/HCA/	<del>CAR A1</del>	OK
A.1.5. Does the written approval from the host country confirm that the project contributes to the sustainable development in the country? (EB 51 Annex 3 §45, (c))	<p><i>Description:</i></p> <p>The letter confirms that the project contributes to sustainable development in Sri Lanka.</p> <p><i>Justification of evidences:</i></p> <p>The host country approval letter from the DNA of Sri Lanka.</p> <p><i>Conclusion:</i></p> <p>The host country<sup>/HCA/</sup> confirms that the project contributes to sustainable development. In this context please see CAR A1.</p>	/HCA/	<del>CAR A1</del>	OK
A.1.6. Do the written approvals refer to the precise project title in the PDD submitted for registration or an additional specification of the	<p><i>Description:</i></p> <p>The title in the host country approval letter is “Adavikanda, Kuruwita Division Mini Hydro Power Project” This is in</p>	/HCA/ /PDD/	<del>CAR A1</del>	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
project activity, e.g. PDD version number? (EB 51 Annex 3 §§45 (d), 50)	agreement with the title in the PDD. <i>Justification of evidences:</i> <ul style="list-style-type: none"> <li>• The LOAs from the DNA of Sri Lanka and Japan.</li> <li>• Revised PDD.</li> </ul> <i>Conclusion:</i> The title in the PDD is in agreement with that of the LOA. In this context please see CAR A1.			
A.1.7. Are the written approvals unconditional with regard to A.1.3 to A.1.6? (EB 51 Annex 3 §46)	<i>Description:</i> The written approval with regard to A.1.3 to A.1.6 of this checklist is unconditional. <i>Justification of evidences:</i> The LOAs from the DNA of Sri Lanka and Japan. <i>Conclusion:</i> It is evident from the submitted LOA that written approvals are unconditional with regard to A.1.3 to A.1.6. In this context please see CAR A1.	/HCA/	<del>CAR A1</del>	OK
A.1.8. Is the information regarding the project participants listed in section A3 and in Annex 1 of the PDD internally consistent to each other? (EB 51 Annex 3, § 51)	<i>Description:</i> The name of the Project Participant (Alternate Power Systems (Pvt.) Ltd) as shown in A.3 and in Annexure 1 of PDD is consistent. <i>Justification of evidences:</i>	/HCA/ /PDD/	<del>GL A1</del>	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	<ul style="list-style-type: none"> <li>• The LOAs from the DNA of Sri Lanka and Japan.</li> <li>• Revised PDD</li> </ul> <p><i>Conclusion:</i></p> <p>Both the host country approval letter and the PDD were checked and found to be consistent. In this context please see finding under CL A1.</p>			
<p>A.1.9. Are all project participants listed in the PDD approved at least by one Party involved?</p> <p>(EB 51 Annex 3, § 51)</p> <p><i>Indicate whether the participation of the project participant(s) has been approved by a Party to the Kyoto Protocol.</i></p> <p><i>Describe the means of validation employed to draw this conclusion.</i></p>	<p><i>Description:</i></p> <p>Yes, M/s Alternate Power Systems (Pvt.) Ltd. is the project participant from the Host Country; Sri Lanka is a party to Kyoto Protocol.</p> <p>And M/s Mitsubishi UFJ Securities Co., Ltd., Japan is also a Project Participant for the project activity and it belongs to Annex 1 countries a party to the Kyoto Protocol.</p> <p><i>Justification of evidences:</i></p> <p>The following web link</p> <ul style="list-style-type: none"> <li>• <a href="http://maindb.unfccc.int/public/country.pl?country=LK">http://maindb.unfccc.int/public/country.pl?country=LK</a> for Sri Lanka.</li> <li>• <a href="http://maindb.unfccc.int/public/country.pl?country=JP">http://maindb.unfccc.int/public/country.pl?country=JP</a> for Japan.</li> </ul> <p><i>Conclusion:</i></p> <p>It is found that the project participants have been approved by a party to the Kyoto Protocol.</p>	<p>/HCA/ /PDD/ /unfccc/</p>	<p>OK</p>	<p>OK</p>



<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
A.1.10. Are any other project participants approved but not listed in the PDD? (EB 51 Annex 3, § 52)	<p><i>Description:</i></p> <p>The project participants involved for the project activity have been listed in the PDD.</p> <p><i>Justification of evidences:</i></p> <p>The contract with M/s Alternate Power Systems (Pvt.) Ltd., Sri Lanka and M/s Mitsubishi UFJ Securities Co., Ltd The LOA<sup>/HCA/</sup> submitted by the two project participants have been cross verified.</p> <p><i>Conclusion:</i></p> <p>The project participant's names are found inline as given in the PDD.</p>		OK	OK
A.1.11. Does the DOE have a direct contractual relationship with the PP? (EB 51 Annex 3, §51 and EB 50, Annex 48, §§ 7-9) <i>Check whether the PPs listed in the published PDD are still listed in the PDD going to be submitted to request for registration.</i>	<p><i>Description:</i></p> <p>Yes, the DOE has a direct contractual relationship with the PP.</p> <p>M/s Alternate Power Systems (Pvt.) Ltd. has signed the Contract for the validation activity with the DOE. Also the project activity has one more participant from Annex 1 country, Japan, M/s Mitsubishi UFJ Securities Co., Ltd. which is serving as a CDM consultant and it's actively involved as a participant for the project activity.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• Proposal offer from the DOE for the CDM Validation of the proposed project activity.</li> <li>• Work order from the PP for the CDM Validation of the</li> </ul>	/ADD/ /CHRO/ /MOC/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>proposed project activity..</p> <ul style="list-style-type: none"> <li>Modalities of Communication signed by both PPs for UNFCCC correspondence.</li> </ul> <p><i>Conclusion:</i></p> <p>From the above evidences it is confirmed that the DOE has a direct contractual relationship with the PP.</p>			
<p><b>A.2. Contribution to Sustainable Development</b></p> <p><i>The project's contribution to sustainable development is assessed.</i></p>				
<p>A.2.1. Has the host country confirmed that the project assists it in achieving sustainable development? (EB 51 Annex 3, §§ 123 – 125)</p> <p><i>Contain a statement confirming whether the letter of approval by the DNA of the host party confirmed the contribution of the project to the sustainable development of the Host Party.</i></p>	<p><i>Description:</i></p> <p>The Host Country Approval confirms that the project activity contributes to Sustainable Development.</p> <p><i>Justification of evidences:</i></p> <p>The LOAs from the DNA of Sri Lanka.</p> <p><i>Conclusion:</i></p> <p>The host country letter of approval was verified. It clearly states that the project activity contributes to sustainable development.</p>	<p>/HCA/ /PDD/</p>	OK	OK
<p>A.2.2. Will the project create other environmental or social benefits than GHG emission reductions? (EB 51 Annex 3, §§ 123 – 125)</p> <p><i>Describe the other positive aspects not related to GHG</i></p>	<p><i>Description:</i></p> <p>Yes, The project activity will reduce greenhouse gas emissions in Sri Lanka compared to a business-as-usual scenario.</p> <p>For the construction of the project, PP employs only local</p>	<p>/HCA/ /IM-01/ /PDD/</p>	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>emission reduction on the environment.</i>	<p>residents for the semi-skilled and un-skilled jobs and maximum extent possible for the skilled jobs. This will boost the local economy and overall income of local people.</p> <p>The Company also encourages local residents to upgrade their skills by attending vocational training courses and assist them to pursue such skill advancing initiatives.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• The LOAs from the DNA of Sri Lanka.</li> <li>• The validation team site visit interview memo.</li> </ul> <p><i>Conclusion:</i></p> <p>The host country approval letter states that the project activity contributes to sustainable development and also it is evident during the on-site visit by the validation team that that project activity contributes to sustainable development.</p>			
<b>A.3. PDD editorial aspects</b>  <i>The PDD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.</i>				
A.3.1. Has the latest version of the PDD form been applied? (EB 51 Annex 3, § 55)	<p><i>Description:</i></p> <p>The PDD has been prepared in the approved format (CDM – SSC-PDD) Version 03 in effect as on 22 December 2006.</p> <p><i>Justification of evidences:</i></p> <p>The following web link can be referred to check the latest</p>	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>version of the PDD format uploaded in the UNFCCC website.  <a href="http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form02_v03.pdf">http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/PDD_form02_v03.pdf</a></p> <p><i>Conclusion:</i></p> <p>The project description is presented in the latest template available in the UNFCCC website. It is verified and found to be valid.</p> <p>Suitable references of published data have been provided in the PDD.</p>			
<p>A.3.2. Has the PDD been duly filled in accordance with the latest guidance(s)?  (EB 51 Annex 3, §§ 56, 57)</p>	<p><i>Description:</i></p> <p>Yes, the PDD has been duly filled in accordance with the "GUIDELINES FOR COMPLETING THE SIMPLIFIED PROJECT DESIGN DOCUMENT (CDM-SSC-PDD)", Version 05</p> <p><i>Justification of evidences:</i></p> <p>The GUIDELINES FOR COMPLETING THE SIMPLIFIED PROJECT DESIGN DOCUMENT (CDM-SSC-PDD) can be viewed on <a href="http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02_v05.pdf">http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02_v05.pdf</a></p> <p><i>Conclusion:</i></p> <p>The PDD has been developed based on the Guidelines for completing the simplified project design document (CDM-SSC-PDD), version 05. The same was verified using the weblink <a href="http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02_v05.pdf">http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02_v05.pdf</a></p> <p>Suitable references of published data have been provided in the PDD. In this context please see findings under CAR A4, CAR A5, CL A1, CL B1 and CL B2.</p>	/PDD/	<p>CAR A4</p> <p>CAR A5</p> <p>CL A1</p> <p>CL B1</p> <p>CL B2</p>	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<b>A.4. Technology to be employed</b>  <i>Validation of project technology focuses on the project engineering, choice of technology and competence/maintenance needs. The DOE should ensure that environmentally safe and sound technology and know-how is used.</i>				
<p>A.4.1. Does the PDD contain a clear, accurate and complete project description?</p> <p>(EB 51 Annex 3, §§ 58, 59)</p> <p><i>The PDD shall contain a clear description of the project activity which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.</i></p> <p><i>Pl. consider esp. chapters A.2, A.4.2 and A.4.3 (in case of LSC PDD) for assessment.</i></p> <p><i>Describe the process undertaken to validate the accuracy and completeness of the project description.</i></p> <p><i>Contain the DOE's opinion on the accuracy and completeness of the project description.</i></p>	<p><i>Description:</i></p> <p>Yes, the PDD contains a clear, accurate and complete description of project activity. The project activity is the installation of a 6.5 MW capacity hydro power project by the PP. The project involves installation of three Francis turbines of 2166 MW capacity each. The project activity is situated in the Kuruwita Division of the Ratnapura District, in Adavikanda and is in close proximity to the Adams Peak Pilgrims road through Erathna. The hydro power project components include diversion weir, power canal, penstock and tail race channel. The generated electricity is supplied to Ceylon Electricity Board.</p> <p>Section A.2 and section A.4.2 of PDD provides details of description of the project activity and specifications of the installed WTGs.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>Commissioning certificate approval from CEB dated 29.09.2009 that the plant is commissioned on 25.09.2009</li> </ul>	/CON/  /FSR/  /PDD/  /SPPA/  /TECH/	CAR A2	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	<ul style="list-style-type: none"> <li>• Feasibility Study Report</li> <li>• Standard Power Purchase Agreement</li> <li>• Technical particulars.</li> </ul> <p><i>Conclusion:</i></p> <p>Thus the project description given in the revised PDD is accurate, clear and complete. In this context please see finding under CAR A2.</p>			
A.4.2. Is this description in accordance with the real situation or (in case of greenfield projects) is it most likely that the project will be implemented acc to the project description?	<p><i>Description:</i></p> <p>The project description is according to the real scenario. This was verified during the on-site visit by the validation team.</p> <p><i>Justification of evidences:</i></p> <p>The commissioning certificate dated 29.09.2009 by Ceylon Electricity Board.</p> <p><i>Conclusion:</i></p> <p>It is evident from the commissioning certificate that the project description is according to the real scenario.</p>	/CON/ /PDD/	OK	OK
A.4.3. In case the project involves alteration of the existing installation or process, is a clear description available regarding the differences between the project and the pre-project situation? EB 51 Annex 3, §§63, 64)	<p><i>Description:</i></p> <p>The project does not involve alteration of the existing installation.</p> <p><i>Justification of evidences:</i></p>	/CON/ /PDD/	OK	OK



<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>Describe the steps taken to validate this issue.</i>	<p>The commissioning certificate dated 29.09.2009 submitted to the DOE.</p> <p><i>Conclusion:</i></p> <p>The project does not involve alteration of the existing installation.</p>			
<p>A.4.4. Does the project design engineering reflect current good practices?</p> <p><i>Consider the equipment specifications, literature (e.g. EU BREF papers) and professional experiences. Describe the process undertaken to assess the engineering.</i></p>	<p><i>Description:</i></p> <p>The project activity entails the installation of 6.5 MW hydro projects of three Francis turbines. The turbines are shaft type coupled to synchronous generators of stat Each turbine is connected to a Synchronous Generator. The electricity is generated at 690 V, which is stepped up to 33 KV through 3 nos. 3 MVA Transformers. Thus the project design engineering reflects current good practices.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• Feasibility Study Report</li> <li>• Commissioning certificate</li> <li>• The technical particulars</li> <li>• Certificate from Gilbert Gilkes &amp; Gordan Ltd.( Turbine – Generator Supplier) on Maximum rated output of the Turbines dated 07.10.2009</li> <li>• Certificate from D.F.M Perera, Structural Engineering Consultant on flow design capacity of 6.0 cumecs dated</li> </ul>	<p>/CON/ /FSR/ /PDD/ /TECH/</p>	<p>CAR-A2</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	14.07.2009.  <i>Conclusion:</i> The submitted documents were all verified and found that the project design engineering reflect current good practices. In this context please see finding under CAR A2.			
A.4.5. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?  <i>Describe the process undertaken to assess the state of the art technology.</i>	<i>Description:</i> The technology adopted by the project is on par with the current industrial practices.  <i>Justification of evidences:</i> Contract document for Turbines, Generators and Associated Equipment dated 28 February 2008 between M/s Alternate Power Systems ( Pvt.) Ltd. and the turbine manufacturer's M/s Gilbert Gilkes & Gordan Ltd.  <i>Conclusion:</i> It is evident that the technology used will be getting a better performance than any commonly used technologies in the host country of Sri Lanka. The validation team also confirmed the same during on-site visit with the personnels of PP.	/IM-01/ /PO/ /TECH/	OK	OK
A.4.6. Does the project make provisions for meeting training and maintenance needs?  <i>Describe the process undertaken to assess the maintenance and training needs.</i>	<i>Description</i> The Shift Engineering Superintendents and the Engineer-in-charge of the Plant would be provided necessary training with respect to maintenance of the relevant monitoring records to enable him/her to deal the monitoring independently. The	/IM-01/ /PDD/	<del>CAR</del> B2+	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>training would be provided to the monitoring personnel for monitoring Parameters mentioned B.7.1 of PDD.</p> <p><i>Justification of evidences:</i></p> <p>The interview memo by the validation team during the on-site visit</p> <p><i>Conclusion:</i></p> <p>The project makes provisions for meeting training and maintenance needs. In this context please see findings under CAR B21.</p>			
<b>A.5. Small scale project activity</b> <i>It is assessed whether the project qualifies as small-scale CDM project activity</i>				
A.5.1. Does the project qualify as a small scale CDM project activity as defined in decision 4 / CMP.1 annex II? (EB 51 Annex 3, § 135 (a))	<p><i>Description:</i></p> <p>Yes the project activity qualifies small scale CDM project activity. The total capacity of the project activity is 6.5 MW which is less than 15 MW as prescribed for small scale projects in Appendix B of the simplified modalities and procedures for small-scale CDM project activities</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• Feasibility Study Report</li> <li>• The commissioning certificate.</li> <li>• Contract of Penstock Clearing, Transportation &amp; Painting between Alternate Power Systems (Pvt.) Ltd. &amp;</li> </ul>	/CON/ /FSR/ /PDD/ /PO/	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	<p>Liyanage (Pvt.) Ltd. dated 21.01.2008</p> <ul style="list-style-type: none"> <li>• Proforma Invoice for Turbine &amp; Machinery from Gilbert Gilkes &amp; Gordon Ltd dated 03.03.2008.</li> <li>• Proforma Invoice for Penstock from Qingdao Highroad International Trade Co. Ltd. dated 17.09.2007.</li> <li>• Proforma Invoice for Transformers from Lanka Transformers Limited dated 17.09.2008.</li> <li>• Proforma Invoice for Power Cables from ACL Cables PLC dated 25.05.2009.</li> <li>• Proforma Invoice for Vacuum Switch Gears from Gunkel dated 04.11.2008.</li> <li>• Proforma Invoice for OH Crane from Jiangsu Jiali Hoisting Machinery Manufacturing Co. Ltd dated 30.12.2008.</li> <li>• Contract document for Turbines, Generators and Associated Equipment from Gilbert Gilkes &amp; Gordon Ltd. dated 28.02.2008.</li> </ul> <p><i>Conclusion:</i></p> <p>It is concluded that the project activity qualifies the small scale CDM project as per CMP.1 annex II.</p>			
<p>A.5.2. Does the project apply one of the approved small scale categories and any methodology and tool referred therein?</p> <p>(EB 51 Annex 3, § 135 (b))</p> <p><i>Check, if applicable the expiry dates of the applied</i></p>	<p><i>Description:</i></p> <p>Yes, the project apply small scale methodology i.e., AMS I.D “Grid connected renewable electricity generation” version 13 and also “Tool to calculate the emission factor for an electricity system” version 1.1 for baseline calculation.</p>	<p>/AMS I.D/ /PDD/ /tool/</p>	<p>OK</p>	<p>OK</p>

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>methodology. Further, take into consideration the general guidance to the methodologies<sup>13</sup>, which provide guidance on equipment capacity, equipment performance, sampling and other monitoring related issues.</i>	<p><i>Justification of evidences:</i></p> <p>The expiry date of AMS I.D, version 13 methodology is 30.03.2010, 23:59:59 GMT. The following links support the above statement.</p> <p><a href="http://cdm.unfccc.int/methodologies/DB/UX8NR66U85988BFYZJ70BII ZNUHC9H/view.html">http://cdm.unfccc.int/methodologies/DB/UX8NR66U85988BFYZJ70BII ZNUHC9H/view.html</a></p> <p><a href="http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_PHP V5WESACMBTJ2YY54GAJYSIEI3HD">http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_PHP V5WESACMBTJ2YY54GAJYSIEI3HD</a></p> <p><a href="http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v1.1.pdf">http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v1.1.pdf</a></p> <p><i>Conclusion:</i></p> <p>The methodology in use is an approved methodology. The version adopted is valid till 30.03.2010.</p>			
<p>A.5.3. Is the small scale project activity not a debundled component of a larger project activity? (EB 51 Annex 3, § 135 (c))</p> <p><i>Describe the steps taken to validate this issue. PI refer to the Compendium of guidance on debundling (EB 36, Annex 27).</i></p>	<p><i>Description:</i></p> <p>The project activity is not a debundled component of larger project activity.</p> <p><i>Justification of evidences:</i></p> <p>The commissioning certificate<sup>/CON/</sup>.</p> <p><i>Conclusion:</i></p> <p>The project activity is not a debundled component of larger project activity.</p>	/AMS I.D/ /CON/ /PDD/	OK	OK

<sup>13</sup> <http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p>A.5.4. Is an assessment of the environmental impacts of the proposed SSC CDM project activity required by the host Party?</p> <p>(EB 51 Annex 3, § 135 (d))</p>	<p><i>Description:</i></p> <p>In Sri Lanka, it is mandatory for all new projects to take approval from the Central Environmental Authority (CEA) which investigates the environmental and social impacts from the project. Due to the small size of the investment, CEA guidelines allow the project developers to prepare an Environmental Examination Report rather than a very comprehensive Environmental Impact Assessment. The content of the environmental impact assessment along with supporting documents submitted to the CEA is given the section D.1 of PDD.</p> <p>After submission of Environmental Examination Report to CEA, the CEA official visit the site with a team of experts and obtain clarifications if required, prior to granting approval for the project.</p> <p><i>Justification of evidences:</i></p> <p>The Environmental Examination Report (EER) is submitted along with following documents and all documents have been submitted to the DOE:-</p> <ul style="list-style-type: none"> <li>• Geological report.</li> <li>• Proposed environment monitoring plan.</li> <li>• Soil conservation management plan.</li> <li>• Approval from CEB for sale of electricity.</li> <li>• No Objection Certificate (NOC) from Chief Minister</li> </ul>	<p>/CEA/ /EER/ /PDD/</p>	<p>OK</p>	<p>OK</p>

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	<p>Office of Sabaragamuwa Province.</p> <ul style="list-style-type: none"> <li>• NOC from Department of Agrarian Services, Ratnapura</li> <li>• Water Right from Divisional Secretary for diversion of water.</li> <li>• NOC from Irrigation Department</li> <li>• Approval from National Water Supply &amp; Drainage Board</li> <li>• Renewable Energy Permit from Sri Lanka Sustainable Energy Authority</li> </ul> <p>Also, the environmental approval of CEA dated 17.02.2005, extension of the environmental approval dated 02.01.2008, Generation License issued by Ministry of Power &amp; Energy dated 01.03.2005</p> <p><i>Conclusion:</i></p> <p>All the submitted documents were verified and it is evident and that the environmental assessment has been conducted as requires by the host country of the proposed SSC CDM project activity and found that there no environmental impact of the by the project activity.</p>			
<b>B. Project Baseline, Additionality and Monitoring Plan</b>				



<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<b>B.1. Application of the Methodology</b>				
<p>B.1.1. Does the project apply an approved and applicable CDM methodology and a valid version thereof? (EB 51 Annex 3, §65)  <i>Describe the steps taken to validate this issue.</i></p>	<p><i>Description:</i></p> <p>The project falls under Type I: Renewable Energy Projects and rightly applies the approved methodology AMS-I.D., Grid connected renewable electricity generation, Version 13. The methodology also refers to the latest version (01.1) of “Tool to calculate the emission factor for an electricity system“</p> <p><i>Justification of evidences:</i></p> <p>The expiry date of AMS I.D, version 13 methodology is 30.03.2010, 23:59:59 GMT. The following links support the above statement.</p> <p><a href="http://cdm.unfccc.int/methodologies/DB/UX8NR66U85988BFYZJ70BII ZNUHC9H/view.html">http://cdm.unfccc.int/methodologies/DB/UX8NR66U85988BFYZJ70BII ZNUHC9H/view.html</a></p> <p><a href="http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_PHP V5WESACMBTJ2YY54GAJYSIEI3HD">http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_PHP V5WESACMBTJ2YY54GAJYSIEI3HD</a></p> <p><a href="http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v1.1.pdf">http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v1.1.pdf</a></p> <p><i>Conclusion:</i></p> <p>The methodology in use is an approved methodology. The version adopted is valid till 2010-03-30. In this context please see finding under CL B1.</p>	<p>/AMS-I.D/ /PDD/</p>	<p><del>CL B1</del></p>	<p>OK</p>

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p>B.1.2. Is the applied CDM methodology identical with the version available on the UNFCCC website? (EB 51 Annex 3, §§65, 69)</p> <p><i>Describe the steps taken to validate this issue.</i></p>	<p>Please refer B.1.1</p>	<p>/AMS-I.D/ /PDD/</p>	<p><del>CL-B1</del></p>	<p>OK</p>
<p>B.1.3. Are all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein fulfilled?</p> <p>(EB 51 Annex 3, §§66 (a), 66 (b), 68, 70, 75)</p> <p><i>Describe for <u>each</u> applicability criterion listed in the selected approved methodology the steps taken to assess the information contained in the PDD.</i></p>	<p><i>Description:</i></p> <p>The following are the applicability criteria which the project fulfils:</p> <ol style="list-style-type: none"> <li>1. The methodology is applicable for projects where renewable energy generation units such as photovoltaic's, hydro, tidal/wave, wind, geothermal and renewable biomass, that supply electricity to and/or displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit.</li> <li>2. The eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW.</li> <li>3. 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.</li> <li>4. Project activities that seek to retrofit or modify existing</li> </ol>	<p>/AMS-I.D/ /CON/ /FSR/ /PDD/ /PO/ /PPA/ /TECH/</p>	<p>OK</p>	<p>OK</p>

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	<p>facility for renewable energy generation are included in this category.</p> <p>5. Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category. To qualify as a small-scale project, the total output of the modified or retrofitted unit shall not exceed the limit of 15 MW.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• Commissioning certificate</li> <li>• Purchase Orders for major equipment</li> <li>• Feasibility Study Report</li> <li>• Technical particulars</li> <li>• Standard Power Purchase Agreement</li> </ul> <p><i>Conclusion:</i></p> <p>The project is a 6.5 MW hydro power project that does not involve the addition of renewable energy generation units nor modification or retrofitting. The purchase order, commissioning certificates, and SPPA with CEB were verified. The project fulfils the applicability criteria of the methodology.</p>			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.1.4. In case one or more applicability criteria have not been met, has the validation team requested clarification to, revision of or deviation from the methodology in accordance with the latest guidelines? (EB 51 Annex 3, §§ 71 -74)	Not Applicable			
B.1.5. Is the project in accordance to every other stipulation or requirement mentioned in all sections of the methodology? (EB 51 Annex 3, §70) <i>Describe the steps taken to check whether the proposed project activity meets all the other possible stipulations and /or limitations mentioned in all sections of the approved methodology selected.</i>	Refer B.1.3			
<b>B.2. Project Boundaries</b> <i>Project Boundaries are the limits and borders defining the GHG emission reduction project</i>				
B.2.1. Are the project's spatial boundaries (geographical) clearly defined? (EB 51 Annex 3, §§67 (a), 77 – 79) <i>Provide information on how the validation of the</i>	<i>Description:</i> The geographical co-ordinates of the project location are provided in the revised PDD.  <i>Justification of evidences:</i>	/PDD/ ./GPS/	CAR A3	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<i>geographical boundary has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.</i>	<p>The following link was used to verify the geographical coordinates,</p> <p><a href="http://itouchmap.com/latlong.html">http://itouchmap.com/latlong.html</a> and Geological Survey and Mines Bureau map for GPS coordinates.</p> <p><i>Conclusion:</i></p> <p>The project's spatial boundaries (geographical) are found to be appropriate and correct. In this context please see finding under CAR A3.</p>			
<p>B.2.2. Are all sources and GHGs included in the project boundary as required in the applied methodology?</p> <p>(EB 51 Annex 3, §§67 (a), 77 – 79)</p> <p><i>Provide information on how the validation of the GHGs and sources has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.</i></p>	<p><i>Description:</i></p> <p>The project boundary of the project activity will consist of diversion structure, penstock, powerhouse, DG Set, tail race channel and the transmission system till switch yard. The project activity is connected to the Ceylon Electricity Board's grid.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• Purchase orders for major equipment</li> <li>• Technical particulars</li> </ul> <p><i>Conclusion:</i></p> <p>All sources and GHGs included in the project boundary as required by the applied methodology-AMS.I.D. During the on-site visit the project boundary was checked by the validation team. In this context please see finding under CAR B1</p>	<p>/PDD/ /PO/ /TECH/</p>	<p><del>CAR B1</del></p>	<p>OK</p>
B.2.3. In case the methodology allows to choose	Refer to B.2.2			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>whether a source and/or gas is to be included, is the choice sufficiently explained and justified? (EB 51 Annex 3, §§67 (a), 77 – 79)</p> <p><i>Confirm if the justification provided by the PPs is reasonable, based on assessment of supporting documented evidence provided by the PPs or by onsite observations.</i></p>				
<p><b>B.3. Baseline Identification</b></p> <p><i>The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.</i></p>				
<p>B.3.1. What possible baseline scenarios have been considered? (EB 51 Annex 3, §§ 67 (b), 82)</p> <p><i>Fill in all alternatives in table A-2.</i></p>	<p><i>Description:</i></p> <p>As per version 13 of the approved methodology AMS.I.D, the baseline scenario applicable is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO<sub>2</sub>e/kWh) calculated in a transparent and conservative manner.</p> <p><i>Justification of evidences:</i></p> <p>Refer B.1.3.</p> <p><i>Conclusion:</i></p> <p>Refer B.1.3</p> <p>The baseline chosen is the applicable baseline to the project</p>	<p>/AMS I.D/ /PDD/</p>	<p>OK</p>	<p>OK</p>

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	activity.			
<p>B.3.2. Is the list of alternatives complete? (EB 51 Annex 3, §§67 (b), 82)</p> <p><i>Describe how it was validated that all alternatives are plausible and no plausible alternative is excluded from the consideration</i></p>	<p><input checked="" type="checkbox"/> All plausible alternative scenarios listed in the approved methodology have been considered. In the course of document review and site visit, it has been validated that no other alternatives which supply comparable outputs and / or services are to be taken into consideration. Thus no plausible scenario has been omitted.</p> <p><input type="checkbox"/> The following alternative scenarios/options have been omitted. Corresponding CAR(s)/CL(s) has /have been issued</p>	/AMS I.D/ /CEB/ /PDD/	OK	OK
<p>B.3.3. What has been identified as the baseline scenario? (EB 51 Annex 3, §§80, 81, 85)</p> <p><i>Describe the chosen BL scenario, taking into consideration the technology that would be employed and / or the activities that would take place in the absence of the proposed CDM project activity.</i></p>	<p><i>Description:</i></p> <p>As per version 13 of the approved methodology AMS.I.D, the baseline scenario applicable is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kgCO<sub>2</sub>e/kWh) calculated in a transparent and conservative manner.</p> <p><i>Justification of evidences:</i></p> <p>The methodology AMS.I.D, version 13 - <a href="http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_PHP_V5WESACMBTJ2YY54GAJYSIEI3HD">http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_PHP_V5WESACMBTJ2YY54GAJYSIEI3HD</a></p> <p>The letter issued by the Ceylon Electricity Board dated 08.04.2009 and 13.05.2009 also the long term generation expansion plan of Ceylon Electricity Board 2006-2020 prepared by Ceylon Electricity Board, December 2005.</p>	/AMS I.D/ /CEB/ /PDD/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p><i>Conclusion:</i></p> <p>It is concluded that the identified baseline scenario is correct and is the scenario that occurs in the absence of the proposed CDM project activity.</p>			
<p>B.3.4. Has the baseline scenario been determined according to the methodology?</p> <p>(EB 51 Annex 3, §§81, 86 (e))</p> <p><i>Describe how it is validated that the identification of the most plausible baseline scenario is carried out in accordance with the applied methodology and applied methodological tools. Please refer to table A-2.</i></p>	<p>For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2.</p> <p><input checked="" type="checkbox"/> The determination has been carried out as per the procedure contained in the applied methodology.</p> <p><input type="checkbox"/> The following CARs / CLs have been identified with respect to the selection of the baseline scenario:</p>	<p>/AMS I.D/ /CEB/ /PDD/</p>	OK	OK
<p>B.3.5. Has any plausible alternative scenario been excluded? (EB 51 Annex 3, § 82)</p> <p><i>Describe how it is validated that no plausible alternative scenario has been excluded.</i></p>	<p>For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2.</p> <p><input checked="" type="checkbox"/> No plausible baseline scenario has been excluded.</p> <p><input type="checkbox"/> The following plausible baseline scenarios have been excluded though no adequate justification has been provided for elimination. The following CARs / CLs have been issued:</p>	<p>/AMS I.D/ /CEB/ /PDD/</p>	OK	OK
<p>B.3.6. Is the identified baseline scenario reasonable and has the baseline scenario been determined using conservative assumptions where possible, including relevant references and sources?</p> <p>(EB 51 Annex 3, §§ 83 - 86(a)-(c))</p> <p><i>Describe whether the choice of the identified baseline</i></p>	<p><input checked="" type="checkbox"/> The baseline scenario is reasonable and has been determined using conservative assumptions where possible. Please refer to comments in table A-2 and sections B.3.2 to B.3.5 above.</p> <p><input type="checkbox"/> The following CARs / CLs have been issued because assumptions used in the baseline determination have been assessed to be not conservative</p>	<p>/AMS I.D/ /CEB/ /PDD/</p>	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>scenario is reasonable by validating the <u>key assumptions, calculations and rationales</u> used in the PDD. Describe whether these are listed, relevant and <u>conservatively interpreted</u> in the PDD.</i>				
<p>B.3.7. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations? (EB 51 Annex 3, §§ 84, 86(d))</p> <p><i>Describe whether the PP has shown that all relevant policies and circumstances have been identified and correctly considered in the PDD in accordance with the guidance by the Board. Pl. consider the guidance EB 22 annex 3 (regarding E+ and E- policies).</i></p>	<p><i>Description:</i></p> <p>Yes, relevant national / state level circumstances relevant to the baseline are summarised in PDD section B.4</p> <p><i>Justification of evidences:</i></p> <p>The letter issued by the Ceylon Electricity Board dated 08.04.2009 and 13.05.2009 also the long term generation expansion plan of Ceylon Electricity Board 2006-2020 prepared by Ceylon Electricity Board, December 2005.</p> <p><i>Conclusion:</i></p> <p>Hence, the baseline scenario sufficiently takes into account relevant national and/or sectoral policies, and macro-economic trends.</p>	/AMS I.D/ /CEB/ /PDD/	OK	OK
<p>B.3.8. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?</p> <p>(EB 51 Annex 3, § 86 (a) – (c))</p> <p><i>Describe whether the documents and sources referred to in the PDD are correctly quoted and clearly referenced.</i></p>	<p><i>Description:</i></p> <p>Yes, the baseline scenario determination is compatible with the available data and all literature and sources clearly referenced.</p> <p><i>Justification of evidences:</i></p> <p>The following web links can be referred as a evidence for fixing the baseline,</p> <p><a href="http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_PHP_V5WESACMBTJ2YY54GAJYSIEI3HD">http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_PHP_V5WESACMBTJ2YY54GAJYSIEI3HD</a></p>	/AMS I.D/ /CEB/ /PDD/ /unfccc/	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	<p>The letter issued by the Ceylon Electricity Board dated 08.04.2009 and 13.05.2009 also the long term generation expansion plan of Ceylon Electricity Board 2006-2020 prepared by Ceylon Electricity Board, December 2005.</p> <p><i>Conclusion:</i></p> <p>Thus the baseline scenario determination is compatible with the available data and all literature and sources clearly referenced.</p>			
<p>B.3.9. Does the PDD contain a <i>verifiable</i> description of the identified baseline scenario, including 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.</p> <p>(EB 51, Annex 3, §85)</p>	<p><i>Description:</i></p> <p>Yes, it is explained in the B.4 and annex 3 of the PDD.</p> <p><i>Justification of evidences:</i></p> <p>The letter issued by the Ceylon Electricity Board dated 08.04.2009 and 13.05.2009 also the long term generation expansion plan of Ceylon Electricity Board 2006-2020 prepared by Ceylon Electricity Board, December 2005.</p> <p><i>Conclusion:</i></p> <p>Thus PDD contained the identified baseline scenario, including 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.</p>	<p>/AMS I.D/ /CEB/ /PDD/</p>	<p>OK</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<b>B.4. Additionality Determination</b> <i>The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.</i>				
<b>B.4.1. Methodology</b>	.			
<b>B.4.1.1.</b> Does the PDD describe the how the project is additional and does the additionality justification follow the requirements of the applied methodology and/or methodological tools?  (EB 51 Annex 3, §§67 (d), 93, 94) <i>Describe how it is validated that additionality justification is carried out in accordance with the applied methodology and/or applied methodological tools. Further focus your assessment on the reliability and credibility of data, rationales and assumptions, justifications and documentations provided by the PP.</i>	<i>Description:</i> The PDD describes additionality of the project and additionality justifications have followed the requirements of the Appendix B of the simplified modalities and procedures for small-scale CDM project activities (Attachment A to Appendix B).  <i>Justification of evidences:</i> <ul style="list-style-type: none"> <li>Please see the web link  <a href="http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid05.pdf">http://cdm.unfccc.int/Reference/Guidclarif/ssc/methSSC_guid05.pdf</a> )</li> <li>Revised PDD.</li> </ul> <i>Conclusion:</i> The PDD proves additionality using benchmark analysis. The additionality justification is as per Attachment A to Appendix B	/PDD/ /unfccc/	<del>CAR B2</del>	OK
<b>B.4.2. Consideration of CDM before project start</b>				
<b>B.4.2.1.</b> Is the project starting date reported in accordance with the CDM glossary of terms? (EB 51, Annex 3, §103 (a))	<i>Description:</i> The contract between M/s Alternate Power Systems ( Pvt.) Ltd and M/s Liyanage (Pvt. Ltd) for the contract of Penstock clearing, Transportation & Painting has been submitted to	/MD/ /PDD/ /PO/	<del>CL C1</del>	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>Describe the steps taken to validate this issue.</i>	support the PP's contention that the start date of project be considered as 21/01/2008  The decision to opt for CDM benefits was taken by the board of Alternate Power Systems (Pvt) Ltd. on 22/11/2007.  <i>Justification of evidences:</i>  The purchase order and extract of minutes of board resolution meeting  <i>Conclusion:</i>  Hence the project start date is as per the definition in the CDM glossary. ( <a href="http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf">http://cdm.unfccc.int/Reference/Guidclarif/glos_CDM.pdf</a> ). In this context please see the finding under CL C1.			
B.4.2.2. In case the project start date is on or after 2 <sup>nd</sup> August 2008 has the PP informed the DNA and UNFCCC about the intension to seek CDM status?  (EB 51 Annex 3, §§ 98, 99, 100) <i>Describe whether such a notification has been provided by the project participants within six months of the project activity start date; if NOT it shall be determined that the CDM was not seriously considered.</i>	Not applicable			
B.4.2.3. In case the project start date is before commencing of validation and 2 <sup>nd</sup> August 2008, was the incentive from the CDM	<i>Description:</i> Yes, the PP has considered CDM prior to 21.01.2008. The Purchase order between the PP and M/s Liyanage (Pvt. Ltd) for	/PDD/ /PO/	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p>seriously considered and are details given in the PDD?</p> <p>(EB 51 Annex 3, §§ 99, 101)</p> <p><i>Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.</i></p>	<p>the contract of Penstock clearing, Transportation &amp; Painting has been submitted to support the PP's contention that the start date of project be considered as 21.01.2008.</p> <p>The decision to opt for CDM benefits was taken by the board of Alternate Power Systems (Pvt) Ltd. on 22.11.2007.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• The extract of the minutes of board resolution meeting</li> <li>• The purchase order</li> <li>• The chronology of events prior to the CDM consideration and after the consideration of CDM.</li> </ul> <p><i>Conclusion:</i></p> <p>Hence, the incentive from CDM was considered seriously before start of the project. The documents in lieu of this, i.e Purchase order , extracts of the minutes of the board resolution minutes.The chronology of events/<sup>CHRO/</sup> prior to the CDM consideration and after the consideration of CDM were verified and found to support the claim. The same has been addressed in the PDD in section B.5.</p>	<p>/CHRO/ /MD/ /PDD/ /PO/</p>		
<p>B.4.2.4. How and when was the decision to proceed with the project taken?</p> <p><i>Describe the steps taken to validate the starting date.</i></p>	<p><i>Description:</i></p> <p>The decision to proceed with the project was taken by the Board of Director of M/s Alternate Power Systems (Pvt) Ltd. on 22.11.2007.The Purchase order between the PP and M/s Liyanage (Pvt. Ltd) for the contract of Penstock clearing, Transportation &amp; Painting on 21.01.2008 has taken as the start of project. The details chronology of the decision taken has</p>	<p>/MD/ /PDD/ /PO/</p>	<p>OK</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>been explained in the revised PDD of B.5 section.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• The extract of the minutes of board resolution meeting</li> <li>• The purchase order</li> <li>• The chronology of events prior to the CDM consideration and after the consideration of CDM.</li> <li>• The revised PDD</li> </ul> <p><i>Conclusion:</i></p> <p>It is evident mainly from the Chronology of events<sup>/CHRO/</sup> that the project activity has considered CDM seriously to overcome the financial barrier with the CDM revenue. So, the decision taken on 22.11.2007 for CDM serious consideration is found to be correct.</p>			
<p>B.4.2.5. Is the project start date consistent with the available evidences?</p> <p>(EB 51 Annex 3, §101)</p> <p><u>Describe the evidence assessed regarding the prior consideration of the CDM (if necessary). Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.</u></p>	<p><i>Description:</i></p> <p>Refer B.4.2.1</p> <p><i>Justification of evidences:</i></p> <p>Refer B.4.2.1</p> <p><i>Conclusion:</i></p> <p>Refer B.4.2.1</p>			
<p>B.4.2.6. Was the decision to proceed with the project taken by a person which has the authority to do so?</p>	<p><i>Description:</i></p> <p>The decision to proceed with the project was taken by the Board of Director of M/s Alternate Power Systems (Pvt) Ltd. on</p>	<p>/MD/ /MOC/ /PDD/</p>	<p>OK</p>	<p>OK</p>



<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<u>(EB 51 Annex 3, §100 (a))</u> <u>Describe the steps taken to validate this issue.</u>	22.11.2007. <i>Justification of evidences:</i> <ul style="list-style-type: none"> <li>• Extract of the minutes of board resolution meeting (authorised by Director of the M/s Alternate Power System (Pvt.) Ltd.)</li> <li>• Modalities of Communication.</li> </ul> <i>Conclusion:</i> Thus, the decision to proceed the project activity in CDM was taken by an authorised person.	/PO/		
B.4.2.7. How was the CDM involved in the decision making process? (EB 51 Annex 3, § 101) <i>Describe why CDM was a decisive factor in the decision making process.</i>	<i>Description:</i> The Board noted the reasons for inordinate delay in commencing the Project and considered the Revised Financial Feasibility Study of November 2007 and the availability debt financing by the two banks. The Board also noted that the viability of the project would now depend on the Project's ability to obtain the CDM benefits. Having considered the Revised Financial Feasibility Study of November 2007, the Directors resolved to approve equity investment upto Rs.450 million and to commence the construction of the Project immediately. The Board also directed the Managing Director to obtain the services of a CDM consultant and to initiate the CDM registration process. <i>Justification of evidences:</i> Extract of the minutes of the board resolution meeting <sup>/MD/</sup> <i>Conclusion:</i>	/FSR/ /MD/ /PDD/ /PO/	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	It is evident mainly from the extracts of the minutes of the Board Meeting that CDM was considered to compensate for the low returns, increasing costs on project investment and in meeting the financial commitments.			
<p>B.4.2.8. Do the evidences provided doubtlessly prove that continuous and real actions were taken in order to secure the CDM status?</p> <p>(EB 51 Annex 3, § 101; EB 49 Annex 22, §7)</p>	<p><i>Description:</i></p> <p>The project activity follows all the real action to secure CDM status. All the actions are done in parallel with the implementation of the project activity. The chronological events are mentioned in the PDD under section B.5.</p> <p><i>Justification of evidences:</i></p> <p>The real and continual actions taken by the PP are as follows:</p> <ul style="list-style-type: none"> <li>▪ Board resolution meeting on 22.11.2007, which is supported by the minutes of meeting of the meeting/MD/</li> <li>▪ Offer from Mitsubishi UFJ Securities for providing Consulting services dated 12.12.2007.</li> <li>▪ Signing of the first contract for Penstock dated 21.01.2008.</li> <li>▪ Signing of CDM consulting agreement with Mitsubishi UFJ Securities for CDM Consulting services dated 20.03.2008.</li> <li>▪ Submission of PIN to the Sri Lankan DNA dated 11.09.2008.</li> <li>▪ In-principle approval from the Sri Lankan DNA dated 29.09.2008.</li> <li>▪ Stakeholder consultation meeting 16.12.2008.</li> <li>▪ Offer from DOE for providing Validation Services</li> </ul>	<p>/PDD/ /CHRO/ /HCA/ /LSC/ /MD/ /PO/</p>	<p>OK</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<p>13.02.2009.</p> <p>All the dates of the above documents are evidence of real and continuous action.</p> <p><i>Conclusion:</i></p> <p>It is concluded that the evidences provided doubtlessly prove that continuous and real actions were taken in order to secure the CDM status. All the above mentioned documentary evidences are submitted and it is verified and found to be valid and correct. It is in line with EB 49 Annex 22, §7</p>			
<p>B.4.2.9. Is the gap of documented evidences to secure the CDM status less than 3 years and are the evidences relevant for substantiating the action taken, credible, reliable and complete?</p> <p>(EB 49 Annex 22, §8)</p>	<p><i>Description:</i></p> <p>The gap between the documented evidences to secure CDM status is less than 3 years.</p> <p><i>Justification of evidences:</i></p> <p>Refer to B.4.2.8</p> <p><i>Conclusion:</i></p> <p>It is in line with EB 49 Annex 22, §8</p>	<p>/HCA/ /MD/ /PDD/ /PO/</p>	OK	OK
<p>B.4.2.10. Did implementation of the project ceased after its commencement and did implementation recommence after consideration of the CDM?</p> <p>(EB 51 Annex 58, §7)</p> <p><i>Describe the reasons for ceasing the project and explain why the incentive from CDM was necessary to recommence</i></p>	<p><i>Description:</i></p> <p>Implementation of the project has been considered only after the considering CDM revenue.</p> <p><i>Justification of evidences:</i></p> <p>Please see chronology of events<sup>/CHRO/</sup> in the reference table 7 of this Final Validation Report.</p> <p><i>Conclusion:</i></p>	<p>/ADD/ /CHRO/ /MD/ /PDD/</p>	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>the implementation.</i>	The above documents shown that the commencement of the project takes place only after consideration of CDM revenue which is inline with EB 51 Annex 58, §7.			
<p>B.4.2.11. Can the CDM involvement in the decision assessed as serious?</p> <p><i>Describe whether or not the project would have been undertaken without the incentive of the CDM.</i></p> <p>(EB 51 Annex 3, § 103 (b) – (c))</p>	<p><i>Description:</i></p> <p>Yes the CDM involvement in the decision assessment by the board of directors of Alternate Power System (Pvt.) Ltd. is taken as serious. The board members had decided to opt for CDM benefits on 22.11.2007. The CDM incentive was considered by the Board of Directors of Alternate Power System (Pvt.) Ltd. in order to make the project financially viable.</p> <p><i>Justification of evidences:</i></p> <p>The extract of minutes of the board resolution meeting<sup>/MD/</sup>.</p> <p><i>Conclusion:</i></p> <p>The submitted extract of minutes of the board resolution meeting has been assessed and found that the decision to opt for CDM benefits can be considered as serious.</p>	/MD/	OK	OK
<p><b>B.4.3. Identification of alternatives Step 1</b> (in case of SSC projects pl. Skip steps 1 and 2)</p>				
<p>B.4.3.1. Does the list of alternatives contain the status-quo situation, the project not undertaken as a CDM project as well as all other viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity?</p>	Not Applicable as this is a small scale project activity.	/AMS-I.D/	OK	

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 51 Annex 3, §§ 104 – 106) <i>Describe the steps taken to validate this issue on the basis of your local and sectoral knowledge.</i>				
B.4.3.2. Have all realistic alternatives been identified to the project? (EB 51 Annex 3, §§ 104 – 106) <i>Describe whether the list of alternatives is credible and complete. Describe how it is validated that the alternatives are realistic.</i>	Not Applicable as this is a small scale project activity.	/AMS-I.D/	OK	
B.4.3.3. Do all identified alternatives comply with enforced legislations? (EB 51 Annex 3, §§ 105 (c)) <i>Describe the steps taken to validate this issue. Refer to the legislations.</i>	Not Applicable as this is a small scale project activity.	/AMS-I.D/	OK	
<b>B.4.4. Investment analysis Step 2</b> <i>In case the investment analysis as per step 2 is chosen to justify the additionality Annex 2 "Assessment of Financial Parameters" has to be used to provide additional details of the the calculation parameters..</i>				
B.4.4.1. Does the PDD provide evidence that the project would not be the most economically or financially attractive alternative or economically / financially feasible without	<i>Description:</i> Yes, the PDD provides evidence to the effect that the project activity is not financially attractive without CER revenues. <i>Justification of evidences:</i>	/IRR/	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
the revenues from the sale of CERs? (EB 51 Annex 3, §107)	Excel worksheet providing the detailed computation of project IRR, Annex 58, EB 51 and Annex 3, EB 51  <i>Conclusion:</i> Evidence to the effect that the project activity is not financially attractive has been provided.	/PDD/		
B.4.4.2. Is an appropriate analysis method chosen for the project (simple cost analysis, investment comparison analysis or benchmark analysis)?  (EB 51 Annex 3, §107, EB 39 Annex 10) <i>Describe why the selected analysis method is appropriate under consideration of potential revenues and costs, potential project alternatives and potential available benchmark values.</i>	<i>Description:</i> Benchmark analysis has been chosen to demonstrate additionality of the project.  <i>Justification of evidences:</i> Excel worksheet, providing detailed computation of project IRR, Annex 58, EB 51 and Annex 3, EB 51  <i>Conclusion:</i> Since the project activity would be earning revenue from the sale of power to the grid and that the baseline is outside the direct control of project developer, benchmark analysis considered for demonstration of additionality is appropriate	/IRR/ /PDD/	OK	OK
B.4.4.3. Is a clear, viewable and unprotected Excel spreadsheet available for the investment calculation? (EB 51 Annex 3, §109, EB 51, Annex 58, §8)  <i>Describe the steps taken to validate this issue.</i>	<i>Description:</i> Yes, a clear and viewable and unprotected excel spread sheet containing investment analysis calculations has been submitted.  <i>Justification of evidences:</i> Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51  <i>Conclusion:</i>	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	A clear, viewable and unprotected excel spread sheet on investment calculations has been submitted, using the latest guidance given in the latest Guidance on the Assessment of Investment Analysis.			
<b>B.4.4.4.</b> Does the period chosen for the investment analysis reflect the technical lifetime of the project activity or in case a shorter period is chosen, is the fair value of the project activity's assets at the end of the investment analysis period (as a cash inflow) included?  (EB 51 Annex 3, §108; EB 51 Annex 58 § 3 – 4) <i>Describe how the technical lifetime / period chosen for calculating financial parameter(s) is reviewed and which documents were utilised in the course of review. Describe furthermore the approach used to check the inclusion of a potential fair value.</i>	<i>Description:</i> The period chosen for investment analysis did not reflect the technical lifetime of the project activity.  <i>Justification of evidences:</i> Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51  <i>Conclusion:</i> Finding B4 has been raised in the form of CAR and C2 in the form of CL.	/IRR/ /PDD/	<del>CAR B4</del> <del>CL C2</del>	OK
<b>B.4.4.5.</b> Is the (remaining) technical lifetime of existing or project equipment defined in accordance with the guidance of the <i>Tool to determine the remaining lifetime of equipment</i> ?  (EB 50 Annex 15)	<i>Description:</i> Not applicable as it is a green-field project  <i>Justification of evidence</i> Not applicable  <i>Conclusion:</i> Not applicable	/IRR/ /PDD/	OK	OK
<b>B.4.4.6.</b> Is the fair value calculated in accordance	<i>Description:</i>	/IRR/	OK	OK



Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>with local accounting regulations (where available) or international best practice?</p> <p>(EB 51 Annex 3, §108; EB 51 Annex 58 §4)</p> <p><i>State the accounting regulations applied for calculating the fair value and describe why these are applicable under the project specific circumstances. Describe potential mismatches between regulations and the approach applied for calculating the fair value.</i></p>	<p>10% of the value of assets has been provided as salvage value in the terminal year</p> <p><i>Justification of evidence:</i></p> <p>Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i></p> <p>Salvage value provided in the terminal year conforms to international best practices.</p>	/PDD/		
<p>B.4.4.7. Is the book value as well as the expectation of the potential profit or loss included in the fair value calculation?</p> <p>(EB 51 Annex 3, §108; EB 51 Annex 58 §4)</p>	<p><i>Description:</i></p> <p>Book value as well as the expected potential profit has been included in the fair value calculation.</p> <p><i>Justification of evidence:</i></p> <p>Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i></p> <p>Considering the fact that the project assets have been fully written off, the salvage value represents mainly the potential profit expected to be realised. Therefore, the fair value calculation conforms to guidance (4) of Annex 58, EB 51</p>	/IRR/ /PDD/	OK	OK
<p>B.4.4.8. Are depreciation and other non-cash related items added back to net profits for the purpose to calculate the financial indicator? (EB 51 Annex 3, §108; EB 51</p>	<p><i>Description:</i></p> <p>Depreciation and non tax items have been added back to net profits for the purpose of calculation of financial indicator</p>	/IRR/ /PDD/	<del>CAR</del> B13 <del>CAR</del> B14	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
Annex 58 §5)	<p><i>Justification of evidence:</i></p> <p>Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion</i></p> <p>Please see findings given under CAR B13, CAR B14 and CL B4</p>		CL B4	
<p>B.4.4.9. Is taxation excluded in the investment analysis or is the benchmark intended for post tax comparisons?</p> <p>(EB 51 Annex 3, §108; EB 51 Annex 58 §5)</p>	<p><i>Description:</i></p> <p>Benchmark is intended for post tax comparison</p> <p><i>Justification of evidence:</i></p> <p>Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i></p> <p>Please see findings under CAR B15, CL B7, CL B8 and CL B9</p>	<p>/IRR/ /PDD/</p>	<p>CAR B15 <del>CL B7,</del> <del>CL B8</del> <del>CL B9</del></p>	OK
<p>B.4.4.10. Were the input values used in the investment analysis valid and applicable at the time of the investment decision?</p> <p>(EB 51 Annex 3, §§108, 111; EB 51 Annex 58 §6)</p> <p><i>In case the basis for input values is a Feasibility Study Report (FSR) describe how it has been ensured that the period in time between the finalisation of the FSR and the investment decision is sufficiently short so that it is unlikely that input values would have materially changed. Further confirm the consistency of values in FSR and PDD.</i></p>	<p><i>Description:</i></p> <p>Input values used in the investment analysis are based on FSR and the values were valid at the time of investment decision</p> <p><i>Justification of evidence:</i></p> <ul style="list-style-type: none"> <li>Excel worksheet providing detailed calculations of investment analysis,</li> <li>FSR,</li> <li>Commercial Bank-loan offer letter dated 17/06/2005</li> </ul>	<p>/ADD/ /FSR/ /IRR/ /PDD/</p>	<p><del>CAR B2</del> <del>CAR B5</del> <del>CAR B6</del> <del>CAR B7</del> <del>CAR B8</del> <del>CAR B9</del> <del>CAR B10</del> <del>CAR B12</del> CL B3</p>	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	<ul style="list-style-type: none"> <li>• DFCC Bank- offer letter dated 30/05/2005</li> <li>• Commercial Bank- New loan offer letter dated 20/11/2007</li> <li>• DFCC Bank-Additional loan of Rs.75 Mn</li> <li>• Commercial Bank-loan disbursement confirmation 7/08/2009</li> <li>• Inland Revenue Act</li> <li>• Board of Investment notification</li> <li>• Annex 58, EB 51 and</li> <li>• Annex 3, EB 51</li> </ul> <p><i>Conclusion:</i></p> <p>The input values are based on FSR, which was completed in November 2007. Since the investment decision was taken in the last week of November 2007, the input values were valid at the time of investment decision; In this context please see findings under CAR B2, B5, B6, B7, B8, B9, B10 and B12, CL B3, B5 and B6,</p>		CL-B5 CL-B6	
B.4.4.11. Is the plant load factor (PLF) chosen in a conservative manner, taking into account that the PLF may be different in the framework of demonstrating additionality and calculating the ex-ante ER? (EB 48, Annex 11)	<p><i>Description:</i></p> <p>PLF is based on detailed hydrological study done by a Hydrology expert forming part of FSR and approved by Ceylon Electricity Board (CEB) and the Bank.</p> <p><i>Justification of evidence:</i></p> <ul style="list-style-type: none"> <li>• CEB letter dated 23.06.2005 acknowledging the receipt of FSR;</li> <li>• Bank letter confirming the consideration of PLF in the appraisal of the project;</li> </ul>	/ADD/ /IRR/ /PDD/	CAR-A2	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	<ul style="list-style-type: none"> <li>Annex 11, EB 48</li> </ul> <p><i>Conclusion:</i> PLF assumed in the additionality demonstration conforms to the stipulations made in Annex 11, EB 48. In this context please see findings under CAR A2</p>			
<p>B.4.4.12. In case of project IRR: Are the costs of financing expenditures (loan repayments and interests) excluded from the calculation of project IRR?</p> <p>(EB 51 Annex 3, §108; EB 51 Annex 58 §9)</p>	<p><i>Description:</i> Loan repayments and interests have been excluded from the calculation of project IRR</p> <p><i>Justification of evidence:</i> Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i> Project IRR calculation conforms to the guidance given vide Annex 58, EB 51. In this context, please see finding CAR B11.</p>	<p>/IRR/ /PDD/</p>	<p><del>CAR B11</del></p>	OK
<p>B.4.4.13. In cases where a post-tax benchmark is applied please ensure that actual interest payable is taken into account in the calculation of income tax.</p> <p>(EB 51 Annex 58 §11)</p> <p><i>As per the guidance it is recommended to select a pre tax benchmark in order to Describe the steps taken in assessing this requirement.</i></p>	<p><i>Description:</i> Actual interest has been taken into consideration in the calculation of Income tax</p> <p><i>Justification of evidence:</i> Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i> Tax calculations take into account actual interest payable and therefore conform to Annex 58, EB 51. In this context, please</p>	<p>/ADD/ /IRR/ /PDD/</p>	<p><del>CAR B11</del> CL B9, CL B10</p>	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	see findings under CAR B11 and CL B8 and B10			
<p>B.4.4.14. In case of equity IRR: Is the part of the investment costs, which is financed by equity considered as net cash outflow and is the part financed by debt excluded in net cash outflow?</p> <p>(EB 51 Annex 3, §108; EB 51 Annex 58 §10)</p>	<p><i>Description:</i></p> <p>Not applicable as additionality is demonstrated through project IRR</p> <p><i>Justification of evidence:</i></p> <p>Not applicable</p> <p><i>Conclusion:</i></p> <p>Not applicable</p>	<p>/IRR/ /PDD/</p>	OK	OK
<p>B.4.4.15. Is the type of benchmark chosen appropriate for the type of IRR calculated (e.g. local commercial lending rates or weighted average costs of capital for project IRR; required/expected returns on equity for equity IRR)?</p> <p>(EB 51 Annex 3, § 110; EB 51 Annex 58 §12 – 15)</p> <p><i>In case risk premiums are applied precisely describe its suitability to reflect the risks associated with the project activity, considering the project type and market situation.</i></p>	<p><i>Description :</i></p> <p>Benchmark chosen is appropriate for the financial indicator used to demonstrate additionality</p> <p><i>Justification of evidence</i></p> <p>Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i></p> <p>PLR has been chosen as the benchmark which is in conformity with the guidance given vide paragraph 12 and 13 of Annex 58, EB 51. In this context, please see finding under CAR B15</p>	<p>/IRR/ /PDD/</p>	CAR B15	OK
<p>B.4.4.16. Is the benchmark value suitable for the project activity and is it reasonable to assume that no investment would be made at a rate of a lower return than the benchmark?</p>	<p><i>Description:</i></p> <p>Yes, the benchmark value is suitable for the project activity and investment would not have been made at a rate lower than the benchmark</p> <p><i>Justification of evidence</i></p>	<p>/MD/</p>	CL-B10	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 51 Annex 3, §108; EB 51 Annex 58 §13 – 15) <i>Describe whether it is reasonable to assume that a lower rate of return would consequently result in the baseline scenario.</i>	Minutes of the Board Meeting  <i>Conclusion:</i>  Minutes of the Board meeting reveal that the investment would not have been made at a return lower than the benchmark. In this context please see findings under CL B10			
B.4.4.17. Is it ensured that the project cannot be developed by other developers than the PP?  (EB 51 Annex 3, §108; EB 51 Annex 58 §13 – 14) <i>Describe why the benchmark does not include the subjective profitability expectations or risk profile of the project developer. If applicable assess the past financial behaviour of the entity during at least the last 3 years in relation to similar projects.</i>	<i>Description:</i> The project can be developed by other developers also  <i>Justification of evidence:</i> Not applicable  <i>Conclusion:</i> Since it is a green-field project, it can be developed by other developers also.	/PDD/	OK	OK
B.4.4.18. Was the benchmark consistently used in the past for similar projects with similar risks?  (EB 51 Annex 3, §108)	<i>Description:</i> Not applicable as internal benchmark has not been used  <i>Justification of evidence:</i> Not applicable  <i>Conclusion:</i> Since internal benchmark has not been used, the question does not arise	/PDD/	OK	OK
B.4.4.19. Does the PDD and related spreadsheets contain a sensitivity analysis and does the same contain variation of parameters	<i>Description:</i> The PDD and related spreadsheets contain sensitivity analysis	/IRR/ /PDD/	CAR B16	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p>which may vary throughout the project lifetime,</p> <p>(EB 51 Annex 3, §§108, 109 (e); EB 51 Annex 58 §17 – 18)</p> <p><i>Describe relevance of parameters used in the sensitivity analysis as well as their likeliness to vary during the project's lifetime. Parameters which are fixed on the basis of contracts, PPAs etc. may not be subject to variation and not adequate.</i></p>	<p>and they contain variation in parameters which may vary throughout the project lifetime</p> <p><i>Justification of evidence:</i></p> <p>Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i></p> <p>Sensitivity analysis has been conducted by varying project cost, PLF and O&amp;M cost to 10% variation on either side. The sensitivity analysis is in conformity with guidance 17 and 18 of Annex 58, EB 51. In this context, please see findings under CAR B16.</p>			
<p>B.4.4.20. Were only variables that constitute more than 20% of either total project costs or total project revenues subjected to reasonable variation?</p> <p>(EB 51 Annex 3, §108; EB 51 Annex 58 §17)</p>	<p><i>Description:</i></p> <p>No. Variable that constitute less than 20% of total project revenue was also subjected to reasonable variation</p> <p><i>Justification of evidence</i></p> <p>Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i></p> <p>O&amp;M cost, which accounts for less than 20% of total project revenue has also been subjected to sensitivity analysis as O&amp;M cost is the only stand-alone item of expenditure in the projections</p>	<p>/IRR/ /PDD/</p>	<p>OK</p>	<p>OK</p>
<p>B.4.4.21. Have parameters, constituting less than</p>	<p><i>Description:</i></p>	<p>/IRR/</p>	<p>OK</p>	<p>OK</p>



<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p>20% of total project costs or revenues, been identified with potential material impact on the financial parameter?</p> <p>(EB 51 Annex 3, §108; EB 51 Annex 58 §17)</p> <p><i>Describe whether those parameters are considered in the sensitivity analysis?</i></p>	<p>Yes. Variable that constitute less than 20% of total project revenue was also subjected to reasonable variation</p> <p><i>Justification of evidence</i></p> <p>Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i></p> <p>O&amp;M cost, which accounts for less than 20% of total project revenue has also been subjected to sensitivity analysis as O&amp;M cost is the only stand-alone item of expenditure in the projections</p>	<p>/PDD/</p>		
<p>B.4.4.22. Is the range of variation reasonable in the specific context of the project activity, taking into consideration historic trends in the business sector?</p> <p>(EB 51 Annex 3, §108; EB 51 Annex 58 §18)</p> <p><i>Describe whether the range of variation is appropriate with focus on historic developments, e.g. price of oil / labour etc., energy potential in the region in question.</i></p>	<p><i>Description:</i></p> <p>Range of variation considered is reasonable for the project activity considering the historic trends</p> <p><i>Justification of evidence:</i></p> <p>Excel worksheet providing detailed calculations of investment analysis, Annex 58, EB 51 and Annex 3, EB 51</p> <p><i>Conclusion:</i></p> <p>Considering the fact that the PLF is based on hydrological study and project cost has already experienced cost overrun and the annual inflation averaging 10%, the variation considered is appropriate for the business sector.</p>	<p>/IRR /PDD/</p>	<p>OK</p>	<p>OK</p>
<p><b>B.4.5. Barrier analysis Step 3 or SSC additionality</b></p>				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<b>assessment</b>				
<p>B.4.5.1. Are there any barriers given which have a clear and direct impact on the financial returns of the project?</p> <p>(EB 51 Annex 3, §§ 114, 133, 136)</p> <p><i>In case of LSC projects those issues cannot be considered as barriers and shall be assessed in the investment analysis. In case of SSC projects the same fundamentals as for LSC projects shall apply, i.e. the assessment of the investment barrier according to EB 51 Annex 58.</i></p>	<p><i>Description:</i></p> <p>Not Applicable</p> <p><i>Justification of evidence:</i></p> <p>PP has not used barrier analysis to demonstrate project's additionality. Hence, this is not applicable</p> <p><i>Conclusion:</i></p> <p>Not applicable</p>	/PDD/	OK	OK
<p>B.4.5.2. Are the barriers described risk related (e.g technology failure, other performance related risks)?</p> <p>(EB 51 Annex 3, §§ 115, 133, 136)</p> <p><i>Are there other barriers or barriers due to prevailing practice existent which would have led to higher emissions?</i></p>	<p><i>Description:</i></p> <p>Not Applicable</p> <p><i>Justification of evidence:</i></p> <p>PP has not used barrier analysis to demonstrate project's additionality. Hence, this is not applicable</p> <p><i>Conclusion:</i></p> <p>Not applicable</p>	/PDD/	OK	OK
<p>B.4.5.3. Has the unavailability of means of finance for the proejct been described and adequately substantiated? Do evidences doubtlessly prove that the financing of the project was assured only due to the benefit of the CDM?</p> <p>(EB 51 Annex 3, §§ 115, 136, EB 50 Annex 13, §9)</p>	<p><i>Description:</i></p> <p>Not Applicable</p> <p><i>Justification of evidence:</i></p> <p>PP has not used barrier analysis to demonstrate project's additionality. Hence, this is not applicable</p> <p><i>Conclusion:</i></p>	/PDD/	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	Not applicable			
<b>B.4.5.4.</b> How is it justified and evidenced that the barriers given in the PDD are real?  (EB 51 Annex 3, § 115 (a))	<i>Description:</i> Not Applicable  <i>Justification of evidence:</i> PP has not used barrier analysis to demonstrate project's additionality. Hence, this is not applicable  <i>Conclusion:</i> Not applicable	/PDD/	OK	OK
<b>B.4.5.5.</b> How is it justified that one or a set of real barriers prevent(s) the implementation of the project activity and do not prevent the implementation of at least one of the alternatives?  (EB 51 Annex 3, § 115 (b))	<i>Description:</i> Not Applicable  <i>Justification of evidence:</i> PP has not used barrier analysis to demonstrate project's additionality. Hence, this is not applicable  <i>Conclusion:</i> Not applicable	/PDD/	OK	OK
<b>B.4.5.6.</b> Does the review of relevant background information on the nature of the company(ies) and entity(ies) involved in the financing and implementation of the project sufficiently justify that the barriers related to the lack of access to capital, technologies and skilled labour are real?	<i>Description:</i> Not Applicable  <i>Justification of evidence:</i> PP has not used barrier analysis to demonstrate project's additionality. Hence, this is not applicable  <i>Conclusion:</i>	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 50 Annex 13, §4)	Not applicable			
<p>B.4.5.7. Has it been demonstrated in an objective way how the CDM alleviates each of the identified barriers to a level that the project is not prevented anymore from occurring by any of the barriers?</p> <p>(EB 50 Annex 13, §5)</p>	<p><i>Description:</i> Not Applicable</p> <p><i>Justification of evidence:</i> PP has not used barrier analysis to demonstrate project's additionality. Hence, this is not applicable</p> <p><i>Conclusion:</i> Not applicable</p>	/PDD/	OK	OK
<p>B.4.5.8. Would provision of additional financial means lead to the mitigation of the barrier(s) demonstrated?</p> <p>(EB 50 Annex 13, §7)</p> <p><i>Describe why provision of additional financial means would not lead to mitigation of the barrier(s) demonstrated and hence analysing the project's additionality within the framework of an investment analysis is inappropriate. .</i></p>	<p><i>Description:</i> Not Applicable</p> <p><i>Justification of evidence:</i> PP has not used barrier analysis to demonstrate project's additionality. Hence, this is not applicable</p> <p><i>Conclusion:</i> Not applicable</p>	/PDD/	OK	OK
<p><b>B.4.6. Common practice analysis Step 4</b> (in case of SSC projects skip this step)</p>				
<p>B.4.6.1. Is the defined region for the common practice analysis appropriate for the technology/industry type?</p> <p>(EB 51 Annex 3, § 119 (a))</p>	<p><i>Description:</i> Not Applicable</p> <p><i>Justification of evidence:</i></p>	/PDD/	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>Describe why the project activity is not common practice in a transparent and unambiguous manner. If a region other than the entire host country is chosen, describe why this region is more appropriate.</i>	Since it is a small scale project activity, common practice analysis is not mandatory.  <i>Conclusion:</i> Not applicable			
B.4.6.2. To what extent similar projects have been undertaken in the relevant region?  (EB 51 Annex 3, § 119 (b))	<i>Description:</i> Not Applicable  <i>Justification of evidence:</i> Since it is a small scale project activity, common practice analysis is not mandatory  <i>Conclusion:</i> Not applicable	/PDD/	OK	OK
B.4.6.3. In case similar projects are identified, are there any key differences between the proposed project and existing or ongoing projects and what kind of differences are observed? (EB 51 Annex 3, § 119 (c))	<i>Description:</i> Not Applicable  <i>Justification of evidence:</i> Since it is a small scale project activity, common practice analysis is not mandatory  <i>Conclusion:</i> Not applicable	/PDD/	OK	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<b>B.5. Ex-Ante Calculation of GHG Emission Reductions</b>  <i>It is assessed whether the ex-ante calculations of project emissions, baseline emissions, leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified. Furthermore calculation of emission reductions shall be assessed.</i>				
<p>B.5.1. Are the equations applied correctly according to the applied approved methodology?</p> <p>(EB 51 Annex 3 §§67 (c), 88, 89, 91)</p> <p><i>Describe clearly the steps taken to assess whether the methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. Further take into consideration that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.</i></p>	<p><input checked="" type="checkbox"/> The equations applied for calculation are correctly applied according to the approved methodology.</p> <p><input checked="" type="checkbox"/> The following mistakes have been identified in this context:</p> <p><i>Description:</i></p> <p>The methodology applied for the project activity is AMS.I.D, version 13. For Ex-ante calculation of GHG emission reduction all the values are applied as per the methodology.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• Spreadsheet for calculation Emission Reduction.</li> <li>• Revised PDD.</li> <li>• Applied methodology AMS I.D version 13.</li> </ul> <p><i>Conclusion:</i></p> <p>Spreadsheet for calculation Emission Reduction and revised</p>	<p>/PDD/ /XSLE/</p>	<p>CAR B17  CAR B18  CAR B19</p>	<p>OK</p>

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	PDD are checked and all necessary corrections have been made as per the applied methodology. In this context please see findings under CAR B17, CAR 18 and CAR B19.			
<p>B.5.2. In case the methodology allows for different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological choices (i.e. baseline identification)?</p> <p>(EB 51 Annex 3 §§ 89, 90)</p> <p><i>Assess the correct selection and application of methodological choices. Describe whether proper justification has been provided (based on the choice of the baseline scenario, context of the project activity and other evidence provided) and whether the correct equations have been used reflecting the relevant methodological choices.</i></p>	<p><i>Description:</i></p> <p>Please refer B.5.1</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• Spreadsheet for calculation Emission Reduction</li> <li>• Revised PDD.</li> <li>• Applied methodology AMS I.D version 13.</li> <li>• Ceylon Electricity Board emission factor evidence: CEB letter 08.04.2009 and 13.05.2009 and the CEB long term generation expansion plan 2006-2020.</li> </ul> <p><i>Conclusion:</i></p> <p>Since it is a hydro project activity all the monitoring parameters equations are explained and justified as per the methodological choices. In this context please see findings under CAR B17, CAR B18 and CAR 19.</p>	/AMS I.D/ /CEB/ /PDD/ /PLF/	CAR B17  CAR B18  CAR B19	OK
<p>B.5.3. Have conservative assumptions been used when calculating the project emissions?</p> <p>(EB 51 Annex 3 §§ 89, 90)</p> <p><i>Describe clearly the steps taken to assess whether all the assumptions and data used by the PP are listed in the PDD including references and sources and are conservatively</i></p>	<p><i>Description:</i></p> <p>Since it is a small scale hydro project activity, there are no project emissions and leakages considered for GHG emission reduction calculation. However, PP has plan to set up Diesel Generator set for the back up of lightings of Power House in emergency cases. The quantity of diesel consumed for operating the Diesel Generator (DG)set during emergency</p>	/AMS I.D/ /IPCC/ /PDD/ /SEA/	CAR B17	OK



<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>interpreted in the PDD.</i>	<p>situations is expected to be negligible. The project emissions due to the combustion of diesel are considered as zero for estimating ex-ante emission reductions. However, the quantity of diesel consumed in the project activity will be monitored during each year of crediting period and respective project emissions will be deducted from baseline emissions.</p> <p><i>Justification of evidences:</i></p> <p>For calculations of project emissions:</p> <p>The parameter density of diesel has been taken from National default value for the Auto Diesel of Sri Lanka. The values are publicly available on the Sri Lanka Sustainable Energy Authority's website at</p> <p><a href="http://www.energy.gov.lk/spec/fual.php">http://www.energy.gov.lk/spec/fual.php</a>.</p> <p>The parameters like <math>NCV_{\text{Diesel},y}</math> and <math>EF_{\text{CO}_2,\text{Diesel},y}</math> have been taken from IPCC default values 2006.</p> <p><i>Conclusion:</i></p> <p>Density of diesel is assessed with the given web link and also parameters like <math>NCV_{\text{Diesel},y}</math> and <math>EF_{\text{CO}_2,\text{Diesel},y}</math> are also assessed with the IPCC 2006 default values and found to be appropriate. In this context please see the finding of CAR B17.</p>			
B.5.4. Does the implementation of the project activity lead to GHG emissions within the project boundary which are expected to contribute more than 1% of the overall expected average annual emission reductions, which are not	Refer B.5.3			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
addressed by the methodology? (EB 51 Annex 3, §76)				
<p>B.5.4.1. Has a plant load factor (PLF) been defined ex-ante and considered for determination of baseline emissions? (EB 48 Annex 11, §§ 1, 3, 4)</p> <p><i>Describe why the PLF is conservative in the framework of calculating emissions reductions and whether the PLF is the same in the framework of demonstrating additionality by applying the investment analysis. Note, in order to be conservative in both cases the PLF may be different.</i></p>	<p><i>Description:</i></p> <p>Yes the PLF of 35% has been taken as ex-ante. It is derived based on the hydrology details by an Engineering Consultant of the Feasibility Study Report.</p> <p><i>Justification of evidences:</i></p> <p>Hydrology Study by M/s Ovara Consultants (Engineering consultant) stated in the Feasibility Study Report also the Bank approval submitted to the DOE.</p> <p><i>Conclusion:</i></p> <p>The submitted documents have been assessed and found that PLF value taken is appropriate for the project activity and is inline with EB 48 annex 11.</p>	<p>/FSR/ /PDD/ /PLF/</p>	OK	OK
<p>B.5.5. Are all data sources and assumptions appropriate and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions? (EB 51 Annex 3, § 90)</p> <p><i>Describe clearly the steps taken to assess whether the values used for the fixed parameters are considered reasonable, correct and applicable in the context of the</i></p>	<p><i>Description:</i></p> <p>The methodology applied for the project activity is AMS.I.D, version 13. For Ex-ante calculation of GHG emission reduction all the values are applied as per the methodology.</p> <p><i>Justification of evidences:</i></p> <p>The evidences such plant load factor, emission factor of the Ceylon Electricity Board emission factor evidence: CEB letter 08.04.2009 and 13.05.2009 and the CEB long term generation expansion plan 2006-2020.</p>	<p>/DPR/ /AMS I.D/ /CEB/ /PDD/ /PLF/</p>	CAR B18	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>project activity. Check esp. chapter 6.2 of the PDD.</i>	<i>Conclusion:</i>  It is concluded that all the data and parameters will remain fixed throughout the 1st crediting period and also applicable to the project and will lead to a conservative estimation of emission reductions. In this context please see finding under CAR B18.			
B.5.6 Are all ex-ante calculation values for monitoring parameters (as defined as per chapter B.7.1) reasonable?  (EB 51 Annex 3, § 90)  Describe clearly the steps taken to assess whether the values used for the monitoring parameters are considered reasonable, applicable and conservative in the context of the project activity	<i>Description:</i>  The methodology applied for the project activity is AMS.I.D, version 13. For Ex-ante calculation of GHG emission reduction all the values are applied as per the methodology.  <i>Justification of evidences:</i>  The CM has been derived from of the Ceylon Electricity Board letter 08.04.2009 and 13.05.2009 and the CEB long term generation expansion plan 2006-2020.  <i>Conclusion:</i>  It is evident in the revised PDD that ex-ante calculation values for monitoring parameters are reasonable. In this context please see finding under CAR B18.	/CEB/  /PDD/	<del>CAR</del> <del>B18</del>	OK
B.5.6. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change.  <i>Describe the steps taken to validate this issue.</i>	<i>Description:</i>  The project will have an expected life time of 25 years. Thus, the emission reductions caused by the project activity are real, measurable and provide long term environmental benefits.  <i>Justification of evidences:</i>	/PDD/  /TECH/  /XSLE/	<del>GL-G1</del>	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
	<ul style="list-style-type: none"> <li>• Certificate by the turbine manufacturer's about the technical lifetime of the project equipments</li> <li>• Spreadsheet for emission reduction calculation.</li> </ul> <p><i>Conclusion:</i> The Project lifetime is considered as 25 years considering Certificate by the turbine manufacturer's about the technical lifetime of the project equipments..So, the emission reductions would be real, measurable and give long-term benefits related to the mitigation of climate change . In this context please see finding under CL C1 .</p>			
<b>B.6. Monitoring of Emission Reductions</b> <i>It is assessed whether the monitoring plan is appropriate for the project activity and in line with the applied methodology.</i>				
<p>B.6.1. Are all monitoring parameters required by the applied methodology contained in the monitoring plan?</p> <p>(EB 51 Annex 3, §§ 67 (e), 120, 122 (a) , 123)</p> <p><i>Assess whether all applicable parameters listed in the methodology are included in the monitoring plan.</i></p> <p><i>Pl. check further whether the selection of parameters not to be monitored (section B.6.2) is appropriate and in line with</i></p>	<p><i>Description:</i> As per the applied methodology, AMS.I.D, version 13, all monitoring parameters have been included in the monitoring plan.</p> <p><i>Justification of evidences:</i> Applied methodology AMS I.D version 13.</p> <p><i>Conclusion:</i></p>	/AMS I.D/ /PDD/	CAR B18	OK

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>the applied methodology.</i></p> <p><i>In case of different approaches can be chosen acc. to the methodology assess whether the selection of parameters is justified and correct.</i></p>	<p>All the applicable parameters as per the methodology are included in the monitoring plan. Also the parameter not be monitored is ex-ante emission factor. It is appropriate and in line with the applied methodology. Hence all the parameters considered for emission reduction calculation are included in the monitoring plan of the PDD. In this context please see our finding under CAR B18 .</p>			
<p>B.6.2. Are the means of monitoring of all parameters contained in the monitoring plan feasible and in accordance with the requirements of the applied methodology?</p> <p>(EB 51 Annex 3, § 122 (a), 122 (b), 123)</p> <p><i>Assess whether the provided information for all parameters w.r.t.</i></p> <ul style="list-style-type: none"> <li>a) <i>Label (name of the data / parameter)</i></li> <li>b) <i>data unit</i></li> <li>c) <i>description</i></li> <li>d) <i>source of data</i></li> <li>e) <i>measurement equipment / method / procedure</i></li> <li>f) <i>monitoring frequency</i></li> <li>g) <i>QA/QC procedures</i></li> </ul> <p><i>are appropriately described and in compliance with the</i></p>	<p><i>Description:</i></p> <p>As per the applied methodology, AMS.I.D, version 13, all monitoring parameters have been included in the monitoring plan. "Net Electricity supplied by the project activity to the grid" is the parameter required to be monitored by the PP.</p> <p><i>Justification of evidences:</i></p> <p>Applied methodology AMS I.D version 13.</p> <p><i>Conclusion:</i></p> <p>The monitored information for all the parameters w.r.t,</p> <ul style="list-style-type: none"> <li>a) Label (name of the data / parameter)</li> <li>b) data unit</li> <li>c) description</li> <li>d) source of data</li> <li>e) measurement equipment / method / procedure</li> </ul>	<p>/AMS I.D/ /PDD/</p>	<p><del>CAR</del> <del>B20</del> <del>CAR</del> <del>B21</del> 1</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<i>requirements of the methodology..</i>	f) monitoring frequency g) QA/QC procedures  have been appropriately described in the revised PDD and is found to be in compliance with the requirements of the methodology. In this context please see our finding under CAR B20 ,CAR B21 .			
<b>B.6.3.</b> Have all means of implementing the monitoring plan, e.g. equations necessary for ex-post emission reduction calculation, been described clearly and in line with the methodology? (EB 51 Annex 3 122 (b), 123)  <i>Check whether all necessary equations have been provided in the PDD. Pl. consider that ex-post and ex-ante calculations might be different.</i>  <i>Please consider that additional equations might be necessary to calculate auxiliary parameters.</i>	<i>Description:</i> All equations have been described clearly and are in line with the applied methodology, AMS.I.D, Version 13.  <i>Justification of evidences:</i> The revised PDD, applied methodology AMS.I.D version 13  <i>Conclusion:</i> It is concluded that the formula mentioned for emission reduction calculation are in line with the methodology. In this context please see finding under CAR B18.	/AMS I.D/ /PDD/	<del>CAR</del> <b>B18</b>	OK
<b>B.6.4.</b> Is it likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity?  (EB 51 Annex 3 123 (c)) <i>Assess whether the described monitoring arrangements are sufficient and realistic to enable a thorough monitoring. Pl. consider also special monitoring conditions, e.g. downtimes</i>	<i>Description:</i> The monitoring plan covers all the monitoring parameters as per the applied methodology AMS.I.D. All these parameters have been monitored with respect to project boundary.  <i>Justification of evidences:</i> FSR is cross checked during the validation stage and emission factor is taken as per CEB provided information and database. The validation team interviewed the monitoring personnel during	/AMS I.D/ /PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<i>of monitoring equipment etc.</i>	<p>the on-site visit.</p> <p><i>Conclusion:</i></p> <p>The monitoring arrangements described in the PDD are properly implemented in the context of the project activity and all the monitoring arrangements are sufficient and realistic to enable a thorough monitoring. I</p>			
<p>B.6.5. Are the QA/QC procedures appropriate sufficient to ensure the emission reductions achieved from the project activity can be reported ex-post and verified?</p> <p>(EB 51 Annex 3 123 (b))</p> <p><i>Please consider the description given in section B.7.2. Describe which QA/QC provisions are considered. Address Quality Management System provisions, calibration and maintenance of equipment. Address further any review procedures.</i></p>	<p><i>Description:</i></p> <p>All measuring instruments are subject to calibration once in 3 years. The energy meters are calibrated and sealed and it is under the. Necessary energy meters are also installed for emergency situations during calibration of main meters and malfunctioning of meters. Procedure for internal audit has been specified.</p> <p><i>Justification of evidences:</i></p> <p>Revised PDD and the interview memo for the on-site visit by the validation team.</p> <p><i>Conclusion:</i></p> <p>It is concluded that the QA/QC procedures are appropriate and sufficient to ensure the emission reduction achieved by the project activity can be reported in a transparent manner.</p>	<p>/IM-01/ /PDD/</p>	OK	OK
<p>B.6.6. Are procedures identified for data management?</p> <p>(EB 51 Annex 3 123 (b))</p>	<p><i>Description:</i></p> <p>Yes, procedures for the data management are defined properly in the revised PDD. Data Provisions have been made for</p>	<p>/IM-01/ /PDD/</p>	<del>CAR</del> B2+	OK



<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>Check whether appropriate provisions are considered for data management including responsibilities, what records to keep, storage area of records and how to process performance documentation</i></p> <p><i>Check further the data archiving provisions for the project activity and ensure that provisions are made to archive data for the whole crediting period + 2 years.</i></p>	<p>archiving and preservation of monitored data for a period of 2 years beyond the crediting period.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>• On-site visit interview memo by the validation team.</li> <li>• Revised PDD</li> </ul> <p><i>Conclusion:</i></p> <p>During the on-site visit by the validation team interview with the project proponent it is ensured that the data will be recorded in and will be verified in case of emergencies. The data will be stored in electronic format and the data management and monitoring personnel's are professionally trained and all the data will be kept for more than 2 years after the crediting period. Hence, the data management system is appropriate. Revised PDD clearly explains the role and responsibility of the person for the project activity along with the data storage and archiving techniques employed for the project activity and is acceptable. In this context please see finding under CAR B21.</p>			
<p><b>C. Duration of the Project/ Crediting Period</b></p> <p><i>It is assessed whether the temporary boundaries of the project are clearly defined.</i></p>				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>C.1. Is the project's starting date clearly defined and evidenced?</p> <p>(EB 51 Annex 3, § 98)</p> <p><i>Check whether the starting date is correct. Apply the definition of the project starting date as per the "Glossary of CDM terms".</i></p>	<p><i>Description:</i></p> <p>Yes, the project start date is 21/01/2008 (Signing of contract for Penstock clearing, transportation &amp; painting with M/s APS &amp; Liyanage (Pvt.) Ltd).</p> <p><i>Justification of evidences:</i></p> <p>The signing contract for Penstock clearing, transportation &amp; painting with M/s APS &amp; Livanage (Pvt.) Ltd. dated 21/01/2008</p> <p><i>Conclusion:</i></p> <p>The project start date is clearly defined in the revised PDD. In this context please see finding under CL C1.</p>	<p>/PDD/ /PO/ /SD/</p>	CL C1	OK
<p>C.2. Is the project's operational lifetime clearly defined and evidenced?</p> <p><i>Check whether the project lifetime is correctly defined. Consider the guidance on the assessment of investment analysis (annex to the additionality tool).</i></p> <p><i>Check in case of phased implementation this has been reflected throughout the whole PDD incl. the financial assessment, if applicable.</i></p>	<p><i>Description:</i></p> <p>The project's operational lifetime has been defined as 25 years in the revised PDD.</p> <p><i>Justification of evidences:</i></p> <p>Certificate by the turbine manufacturer's about the technical lifetime of the project equipments</p> <p><i>Conclusion:</i></p> <p>The Project lifetime is considered as 25 years as per the Certificate by the turbine manufacturer's about the technical lifetime of the project equipments which is appropriate for the proposed CDM project activity. In this context please see the finding under CL C2.</p>	<p>/PDD/ /TECH/</p>	CL C2	OK
C.3. Is the start of the crediting period clearly	<i>Description:</i>	/PDD/	CL 3	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
defined and reasonable?  <i>Check whether the envisaged starting date of the crediting period is realistic, taking into consideration the times needed for validation and registration.</i>	The project start date has been clearly defined in the revised PDD. <i>Justification of evidences:</i> The revised PDD. <i>Conclusion:</i> The project start date has been clearly defined in the revised PDD. In this context Please see finding under CL C3			
<b>D. Environmental Impacts</b>  <i>Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the DOE.</i>				
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)?  (EB 51 Annex 3, §§ 130 – 132) <i>Check the host party regulations, regarding EIA.</i>	Refer A.5.4			
D.1.2. In case an Environmental Impact Assessment (EIA) is requested by the host party, has it been carried out and if applicable duly approved? (EB 51 Annex 3, §§ 130 – 132) <i>Check the EIA and its approval, if applicable.</i>	Refer A.5.4			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
<p>D.1.3. Has an analysis of the environmental impacts of the project activity been sufficiently described and in line with the host party environmental legislation?</p> <p>(EB 51 Annex 3, §§ 129 – 131)  <i>Check the PDD (section D). Check whether the project will create any adverse environmental effects.</i>  <i>Check the relevant national environmental legislation.</i></p>	Refer A.5.4			
<p>D.1.4. Are transboundary environmental impacts considered in the analysis?</p> <p>(EB 51 Annex 3, §§ 130 – 132)  <i>Check the documents and local official sources / expertise regarding transboundary environmental impacts.</i></p>	Refer A.5.4			
<p><b>E. Stakeholder Comments</b></p> <p><i>The DOE should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.</i></p>				
<p>E.1. Have relevant local stakeholders been invited to consultation prior to the publication of the PDD?</p> <p>(EB 51 Annex 3, § 127)  <i>Check by means of document review and interviews with</i></p>	<p><i>Description:</i>  A stakeholder's consultation meeting is reported to have been conducted on 16-12-2008 at Adavikanda Village, Ratnapura District Information about the proposed project was given to the participants and their comments recorded.</p>	<p>/LSC/ /PDD/</p>	<p>CL-E1</p>	<p>OK</p>

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<i>local stakeholders if and when a local stakeholder consultation process has been carried out.</i>	<p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>▪ List of attendees to the stakeholder meeting<sup>/STK1/</sup></li> <li>▪ Minutes of meeting</li> <li>▪ Press Notices</li> <li>▪ Questionnaire</li> <li>▪ Invitation letter</li> <li>▪ Photographs</li> </ul> <p><i>Conclusion:</i></p> <p>The stakeholder's meeting was held on 16-12-2008 at Adavikanda Village, Ratnapura District, Sri Lanka. In this context please see finding under CL E1.</p>			
<p>E.2. Can the local stakeholder consultation process be assessed as adequate? (EB 51 Annex 3, § 128 (a) – 128 (c))</p> <p><i>Describe what assessment steps have been undertaken to assess the adequacy of the stakeholder consultation process. Give a final opinion on the adequacy.</i></p> <p><i>Please consider the following requirements in this context:</i></p> <p><i>(a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited;</i></p> <p><i>(b) The summary of the comments received as provided in</i></p>	<p><i>Description:</i></p> <p>The stake holder consultation process was attended by local villagers, Technology Supplier, Local NGOs members, Government officials, Intellectuals working in the local area, Company Employees of APSL The project details were made available to the stakeholder's prior to the meeting. The Managing Director of Alternate Power Systems (Pvt) Ltd. welcomed all those present and briefed them about the proposed CDM project activity and various activities undertaken by the project developer for the socio-economic advantage of the local community / residents of the Adavikanda Village where the project is located. He highlighted the importance of the project to the national power scenario and the economy. At the</p>	<p>/LSC/ /PDD/</p>	<p><del>CL E1</del></p>	<p>OK</p>

<b>Checklist Item</b> (incl. guidance for the validation team)	<b>Validation Team Comments</b> (justification and substantiation of information, data and evidences)	<b>Ref.</b>	<b>Draft Concl.</b>	<b>Final Concl.</b>
<p><i>the PDD is complete;</i></p> <p><i>(c) The project participants have taken due account of any comments received and have described this process in the PDD.</i></p>	<p>end of the presentation, the Managing Director invited the participants to ask any question or raise any issues arising from the construction of the project that may be of concern to them. Thus, the stakeholder consultation process is considered adequate and satisfactory.</p> <p><i>Justification of evidences:</i></p> <ul style="list-style-type: none"> <li>▪ List of attendees to the stakeholder meeting</li> <li>▪ Minutes of meeting</li> <li>▪ Press Notices</li> <li>▪ Questionnaire</li> <li>▪ Invitation letter</li> <li>▪ Photographs</li> </ul> <p><i>Conclusion:</i></p> <p>It is concluded that the comments received from the local stakeholders are relevant to the CDM project activity and the stakeholders are very impressed by the implementation of the project activity will help to improve the employment opportunity, development of the region, better infrastructure development like construction of bridge. The summary has been included in the E.2 section of PDD. No negative comments have been received for the project activity. In this context please see findings under CL E1.</p>			

## ANNEX 2: ASSESSMENT OF BASELINE IDENTIFICATION

**Table A-2:** Assessment of Baseline Identification (EB 51 Annex 3, §§ 82 – 85)

<input type="checkbox"/>	Baseline is not identified
<input checked="" type="checkbox"/>	Assessment of baseline see below

Baseline Alternatives identified	Inline with the Methodology?	Eliminated	Reasons for elimination / non-elimination from list of alternatives	Evidence used	DOE Assessment	
					Appropriateness of elimination	Assessment of validation team (results and means of assessment)



Not Applicable as the applied methodology for the proposed activity is AMS I.D version 13	<input checked="" type="checkbox"/>	<input type="checkbox"/>	In the absence of the project activity, equivalent amount of power would have been drawn from the grid which is the baseline scenario. Calculations are based on data from the Ceylon Electricity Board, Sri Lanka. No other alternative is identified other than the above mentioned baseline.	1. Long Term Generation Expansion Plan 2006-2020, Published on December 2005, Ceylon Electricity Board. 2. Letter on General Statistics of CEB and Private Power Plants dated 08.04.2009 and 13.05.2009 by Chief Engineer-Generation Planning and Design, Ceylon Electricity Board.	<input type="checkbox"/>	The baseline for hydro energy generating systems is the electricity (measured in kWh) produced by the generating unit multiplied by an emission coefficient (measured in tCO <sub>2</sub> e/GWh) calculated in a transparent and conservative manner. In order to arrive at the baseline scenario, Ceylon Electricity Board data provided has been considered, which is conservative and in line with the EB directives in this regard. Hence, this is the most plausible alternative for the small scale hydro power projects as per AMS I.D.
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### ANNEX 3: ASSESSMENT OF FINANCIAL PARAMETERS

**Table A-3:** Assessment of Financial Parameters (EB 51 Annex 3, §§110, 111, 113/ in case financial parameters stem from FSR §112,)

<input type="checkbox"/>	No financial parameters are used for additionality justification						
<input checked="" type="checkbox"/>	Assessment of all financial parameters see below						
Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
Plant Capacity	6.5	MW	Standard Power Purchase Agreement (page 2); Feasibility Study (page 4)	/ADD/ /FSR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Plant capacity is based on the PPA and FSR. The value is correct and appropriate for the project activity
Plant Load Factor	35	%	Hydrology Study forming part of Feasibility Study	/ADD/ /FSR/.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	PLF is based on detailed hydrology study forming part of FSR and has been taken into account by banks for appraising the project. This value is correct and

							appropriate for the project activity. The exact PLF has been identified with 34.17%. As final conclusion this was rounded up to 35%, which is conservative.
Electricity Selling price in 2009/2010	7.92	LKR/kWh	Standard Power Purchase Agreement	/PPA/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The tariff is based on SPPA. SPPA is for a term of 15 years. From the 16 <sup>th</sup> year, tariff is based on the third tier of the tariff in force on the date of the signing of the new SPPA. The value is considered is correct and appropriate for the project activity
Annual Escalation in Selling price	5.33	%	Computed based on Tariff rates announced by CEB after September 2002 till November 2007,(Board Decision date)	/IRR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	This is based on the simple average growth of tariff between 2002 and 2007. Since the Geometric mean is lower, simple average is more conservative. The escalation assumed is therefore, conservative, correct

							and appropriate for the project activity,
Annual Operation and Maintenance Cost	19.90	LKR MN	Revised Financial Feasibility Study of November 2007 (Pages 9-11)	/FSR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	The amount is based on the FSR. Detailed estimates form part of worksheet. The value is correct and appropriate for the project activity
Annual escalation of O&M cost	6.63	%	Computed based on the Tariff Explanatory Note (Point 6.7) <sup>14</sup>	/IRR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Escalation is based on the methodology proposed in the Tariff Explanatory Note issued by the Government. The methodology adopted, values used and the computation are correct and appropriate.
Estimated Project Cost	895	LKR MN	Revised Financial Feasibility Study of November 2007 (Pages 6-7)	/FSR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Project cost is based on the FSR. The FSR was completed in November 2007 and the investment decision was taken in the last week of November 2007. It is

<sup>14</sup> [http://www.energy.gov.lk/pdf/explanatory\\_note\\_april\\_2009.pdf](http://www.energy.gov.lk/pdf/explanatory_note_april_2009.pdf) . A separate excel sheet is provided to the Validation Team for computation of the O&M escalation rate as per the recommended procedure by the local government.

							also explained in the section 4.2.5, page 53 of this report. Hence, the cost is correct, valid and appropriate.
Total Loan Amount	451	LKR MN	Bank Loan Approval Letters (4 separate approvals from 2 banks)	/ADD/	☒	☒	Loan is based on the FSR and supported by loan sanction letters. The value is correct and appropriate
Total Equity Amount	444	LKR MN	Computed (Total Capital Cost less Total Debt amount)	/ADD/	☒	☒	Equity represents the total cost less loan component. The equity component is evidenced by FSR, loan sanction letter and the undertaking given by the project developer. Hence, the value is correct and appropriate
Average Loan Interest Rate	16.82	%	Computed in IRR excel sheet based on the Bank Loan Approval Letters	/ADD/, /IRR/	☒	☒	Interest rate represents the weighted average rate of interest of loans sanctioned by two banks over different periods of time. Computations form

							part of worksheet. f the PP. Hence, the applied value is correct and appropriate for the project activity.
Loan Repayment Period	6	Years	Bank Loan approval Letters	/ADD/, /IRR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Repayment period is based on loan sanction letters. The repayment period is correct and appropriate.
Annual Land Lease	0.11	LKR MN	Lease payment receipts	/SC/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Land lease charges are based on land lease receipts. The cost is valid and appropriate
Water levy	25	(LKR per Horse Power per annum)	Letter from Land Commissioner General's Department	/SC/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Water levy charge is based on the demand notice received from Land Commissioner General Department. The cost is valid and appropriate
Economic Service Charges	0.25	(% of Revenue)	Economic Service Charge Act, No. 13 of 2006 (Sri Lanka)	/ADD/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Economic Service charge is based on the Economic Service Charge Act, 2006. The rate applied is

							correct and valid
Depreciation Rate: Plant and Machinery Civil Structure	12.5 6.66	% %	Section 25 (1) (a) of the Inland Revenue Act No 10 of 2006	/ADD/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Depreciation rates are based on Inland Revenue Act. The rates applied are correct and valid
Salvage Value	87.30	LKR MN	Assumed as 10% of the depreciable asset value	/IRR/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Residual value has been taken at 10% of the cost, which is in conformity with the best international practices. The Salvage value considered is, therefore, appropriate.
Taxation First 5 Years Next 2 Years Rest of the Period	0 10 20	% % %	The Board of Investment Agreement No 144 dated October 5, 2006. (Page 5)	/ADD/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Project activity enjoys tax holiday for the first 5 years as per the Board of Investment Agreement. Tax rate applied for the rest of the period is in accordance with the rates prescribed by Inland Revenue Act. The rates are correct and valid
Social Responsibility Levy	1.50	(% of Income	Finance Act, No.5 of 2005 (Sri Lanka)	/ADD/	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Social Responsibility Levy is based on





		Tax)					Finance Act. The rate applied is correct and valid for the project activity
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## ANNEX 4: ASSESSMENT OF BARRIER ANALYSIS

**Table A-4:** Assessment of Barrier Analysis (EB 51 Annex 3, § 117)

<input checked="" type="checkbox"/>	No barrier parameters are used for additionality justification			
<input type="checkbox"/>	Assessment of barriers see below			
Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropriateness of information source	Explanation of final result
			<input type="checkbox"/>	

## ANNEX 5: OUTCOME OF THE GSCP

**Table A-5:** Outcome of the Global Stakeholder Consultation Process

(§§ 41, 42 VVM Version 1)

<input checked="" type="checkbox"/>	No comments were received during the global stakeholder consultation period					
<input type="checkbox"/>	Comments were received during the global stakeholder consultation period. The comments (in unedited form) and the consideration/response of the validation team are presented below:					
Com ment No.:	Comment by:	Inserted on:	Subject	Comment <sup>*)</sup>	Action taken by the validation team to take due account on the comment <sup>*)</sup>	Conclusion (incl. CARs CLs or FARs)

<sup>\*)</sup> In case clarifications have been requested by the validation team corresponding rows shall be added

## ANNEX 6: APPOINTMENT CERTIFICATES OF TEAM MEMBERS



### CERTIFICATE OF APPOINTMENT

**Mr. B. J. Mohinder Amarnath**

born on 1975-07-29

satisfies the requirements as specified in the TÜV NORD  
JI/CDM CP directives and is hereby appointed as

**TÜV NORD JI/CDM Expert**

The present appointment will terminate on 2011-04-13  
Certification registration No. 08 04 01 – 53 rev01

Essen, 2008-04-14

  
Head of TÜV NORD JI/CDM Certification Program  
of TÜV NORD CERT GmbH

### CERTIFICATE OF APPOINTMENT

**Mr. Ma Paa Puratchikkanal**

born on 1971-09-21

satisfies the requirements as specified in the TÜV NORD  
JI/CDM CP directives and is hereby appointed as

**TÜV NORD CDM Assessor**

The present appointment will terminate on 2011-06-16  
Certification registration No. 08 06 02 – 79 rev01

Essen, 2008-06-17

  
Head of TÜV NORD JI/CDM Certification Program  
of TÜV NORD CERT GmbH

### CERTIFICATE OF APPOINTMENT

**Mr. Dipl.-Ing. Rainer Winter**


born on 1963-02-21

satisfies the requirements as specified in the TÜV NORD  
JI/CDM CP directives and is hereby appointed as

**TÜV NORD JI/CDM Senior Assessor**

The present appointment will terminate on 2010-07-05  
Certification registration No. 04 02 154-03

Essen, 2007-07-06

  
Deputy of TÜV NORD JI/CDM Certification Program  
of TÜV NORD CERT GmbH



### **CERTIFICATE OF APPOINTMENT**

**Mr. Ningthoujam Premjit Singh**

born on 1982-03-12

satisfies the requirements as specified in the TÜV NORD  
JI/CDM CP directives and is hereby appointed as

**TÜV NORD CDM Expert**

The present appointment will terminate on 2013-02-17  
Certification registration No. 10 02 03 - 76

Essen, 2010-02-18



Head of TÜV NORD JI/CDM Certification Program  
of TÜV NORD CERT GmbH



### **CERTIFICATE OF APPOINTMENT**

**Ms. Alexandra Nebel**

born on 1980-07-25

satisfies the requirements as specified in the TÜV NORD  
JI/CDM CP directives and is hereby appointed as

**TÜV NORD CDM Assessor**

The present appointment will terminate on 2012-11-19  
Certification registration No. 09 11 08 - 95

Essen, 2009-11-20



Head of TÜV NORD JI/CDM Certification Program  
of TÜV NORD CERT GmbH



### **CERTIFICATE OF APPOINTMENT**

**Mr. Ingo Klein**

born on 1973-05-15

satisfies the requirements as specified in the TÜV NORD  
JI/CDM CP directives and is hereby appointed as

**TÜV NORD JI/CDM Expert**

The present appointment will terminate on 2013-03-14  
Certification registration No. 10 03 13 - 122

Essen, 2010-03-15



Head of TÜV NORD JI/CDM Certification Program  
of TÜV NORD CERT GmbH