

VALIDATION REPORT

Soham Mannapitlu Power Private Limited

Mannapitlu Small Hydel Project

SGS Climate Change Programme

SGS United Kingdom Ltd
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Summary:			
<p>Soham Mannapitlu Power Private Limited has commissioned SGS to perform the validation of the project: Mannapitlu Small Hydel Project.</p> <p>Methodology Used: AMS I.D</p> <p>Version and Date: Version 15, EB 50.</p> <p>The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and applicable CDM requirements.</p> <p>The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable simplified methodology and underlying formulae and calculations.</p> <p>The project was web hosted for ISHC using version 13 of AMS ID. Since the last date of submission of request for registration for version 13 of AMS ID is 30th March 2010, the PP has updated the version of methodology to the latest version 15 of AMS ID.</p> <p>The report and the annexed validation describes a total of 07 findings which include:</p> <ul style="list-style-type: none"> • 05 Corrective Action Requests (CARs); • 02 Clarification Requests (CLs); • 00 Forward Action Requests (FARs); and <p>All findings have been closed. The project will be recommended to the CDM Executive Board with a request for registration</p>			
Subject:		Document Distribution	
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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM	EB CDM Executive Board
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CL	Clarification Request
DOE	Designated Operational Entity
DNA	Designated National Authority
DPR	Detailed Project Report
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Greenhouse gas(es)
HCA	Host Country Approval
IPCC	Intergovernmental Panel on Climate Change
KERC	Karnataka Electricity Regulatory Commission
KREDL	Karnataka Renewable Energy Development Limited
LOA	Letter Of Approval
MESCOM	Mangalore Electricity Supply Company Limited
MNRE	Ministry of New and Renewable Energy
MoEF	Ministry of Environment and Forest
NOC	No Objection Certificate
PDD	Project Design Document
PLF	Plant Load Factor
PLR	Prime Lending Rate
PP	Project Participant
PPA	Power Purchase Agreement
SMPPL	Soham Mannapitlu Power Private Limited
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual version 1.1 (EB 51)

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1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Soham Mannapitlu Power Private Limited to perform a validation of the project: Mannapitlu Small Hydel Project in India.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual version 1.1 (EB 51) and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The project activity involves generation of clean electricity using hydro power. Three numbers of 5 MW generators have been installed. The total installed capacity is 15 MW. The power produced will be evacuated to southern grid Mangalore Electricity Supply Company Limited (MESCOM) which will displace an equivalent amount of electricity that would have been generated by the grid which uses predominantly fossil fuels for its generation thereby reducing GHG emissions.

By generation of this clean electricity the project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria. The project correctly applies methodology AMS I.D version 15. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be 382070 tCO₂e over a 10 year crediting period, averaging 38207 tCO₂e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

The project will hence be recommended by SGS for registration with the UNFCCC.

Signed on Behalf of the Validation Body by Authorized Signatory



Signature:

Name: Siddharth Yadav

Date: 23rd December 2010

2. Introduction

2.1 Objective

Soham Mannapitlu Power Private Limited has commissioned SGS to perform the validation of the project: Mannapitlu Small Hydel Project with regard to the relevant requirements for Clean Development Mechanism (CDM) project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

2.2 Scope

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

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

2.3 GHG Project Description

The project activity involves generation of clean electricity using hydro power. Three numbers of 5 MW generators have been installed. The total installed capacity is 15 MW. The power produced will be evacuated to southern grid Mangalore Electricity Supply Company Limited (MESCOM) which will displace an equivalent amount of electricity that would have been generated by the grid which uses predominantly fossil fuels for its generation thereby reducing GHG emissions.

2.4 The Names and Roles of the Validation Team Members

Assessment Team	Role
Sathis Kumar	Lead Assessor
Senthil Kumar	Assessor and Local Assessor
Sanjay Banerjee	Sectoral Scope Expert
Abhishek Mahawar	Financial Expert

Technical Review Team	Role
Kaviraj Singh	Technical Reviewer
Ajoy Gupta	Sectoral Scope Expert

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project document version 01 dated 10/08/2008 and the subsequent versions 1.1 to 1.6 and final version 1.7 dated 17/12/2010. The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2

The site visit was performed on 25/11/2008 and 26/11/2008 by the validation team and findings are attached in Annex 1 with this document.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Manual; Version 1.1 (EB 51). It serves the following purposes:

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

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

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

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

3.3 Findings

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

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

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

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

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

A Forward Action Request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

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

3.4 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team. Findings can be raised at this stage and client must address them within agreed timeline.

4. Validation Findings

4.1 Approval

The Host country for this project is India. The LoA from the DNA of India was not attached so **CAR#1 was raised**. The LoA from the DNA of India (Ministry of Environment & Forest, Government of India) dated 12/01/2009 with F.No.4/25/2008-CCC was provided by the PP (Ref. /5a/). The DNA of India, DNA Address, and contact person was referred from <http://cdm.unfccc.int/DNA/index.html#/> and was found to be consistent with the LOA. The copy of the LOA provided to the validation team was found to be consistent with the original LOA. Hence the LOA provided was found to be authentic. The DNA has confirmed that (1) India has ratified the Kyoto Protocol in August 2002. (2) Participation is voluntary (3) The project contributes to sustainable development in India. The name of the PP and the title of the project as mentioned in the PDD version 01 and the LoA were found to be consistent. The LoA provided does not mention any validity period for the approval. Hence the LoA was found in compliance with the CDM guidelines and found to be acceptable.

This project activity was initially owned by the Bobba Group. But the project activity implementation was subsequently ceased. Then the project was taken over by Soham Renewable Energy India Pvt Ltd on 28th February 2008. The project activity is being implemented under the name of M/s. Soham Mannapitlu Power Pvt Ltd. Although Soham Renewable Energy India Pvt Ltd took over Bobba Aviation Services Pvt Ltd on 28/02/2008 itself the change of name was not completed immediately. Hence the initial HCA was received in the name of M/s Bobba Aviation Services Private Limited. The change of name of the company was done subsequently from Bobba Aviation Services Private Limited to Soham Mannapitlu Power Pvt Ltd (See section 4.3 of this report below for further details). Then Soham Mannapitlu Power Private Limited has approached the Indian DNA to issue a new LoA with the changed name of the company. The revised LoA dated 29/06/2009 (Ref. /5b/) was then submitted by the PP to the DOE. The revised LOA from the Indian DNA has approved M/s Soham Mannapitlu Power Pvt Ltd (SMPPL) to participate in the project. The DNA in its revised LOA has confirmed that (1) India has ratified the Kyoto Protocol in August 2002. (2) Participation is voluntary (3) The project contributes to sustainable development in India. Name of the PP and title of the project as mentioned in the PDD and the LoA were found to be consistent. Hence the LoA (Ref. /5b/) submitted for the project activity was found in conformance with the requirement of VVM version 1.1 para 45 to 48. The LoA does not contain any additional specification of the project activity as indicated in the VVM para 50. **CAR #1 was closed**.

4.2 Participation Requirements

The PP is listed in a tabular form in section A.3 of the PDD and the information in section A.3 of the PDD was found to be consistent with the details provided in Annex 1 of the PDD. The host Party for this project is India. India has ratified the Kyoto Protocol on 26th August 2002 and is allowed to participate in CDM projects (Weblink: <http://maindb.unfccc.int/public/country.pl?country=IN>). Bobba Aviation Services Private Limited has been approved by the Indian DNA to participate in this project. The same was verified from the LoA from the DNA of India (Ministry of Environment & Forest, Government of India) 12/01/2009 with F.No.4/25/2008-CCC.

As explained above in section 4.1 of the report, the PP has submitted the revised HCA and the revised HCA (Ref. /5b/) has approved the participation of M/s Soham Mannapitlu Power Pvt Ltd (SMPPL) in the project activity. **CAR#02 was raised** to submit the MOC for the project. The PP provided the MOC after which **CAR #2 was closed**.

No Annex I Party has been identified in the PDD and therefore no further LoA was available. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CER can be transferred to an Annex I Party, a LoA needs to be submitted.

4.3 Project Design Document including Project Description

This project activity is electricity generation from hydro power. Three numbers of 5 MW generators have been installed. The total installed capacity is 15 MW. The installed capacity of 15 MW has been validated from the technical clearance for the project activity accorded by KREDL (Ref./30/) and also from the power purchase agreement (Ref./34/). The power produced will be evacuated to Mangalore Electricity Supply Company

Limited (MESCOM) which is part of the southern grid of India that will displace an equivalent amount of electricity that would have been generated by the grid which uses predominantly fossil fuels for its generation thereby reducing GHG emissions. The project activity belongs to Type-I (Renewable Energy Projects) as it is generating electricity from hydro energy and comes under category D (Grid connected renewable electricity generation) as it supplies electricity to the grid. The project activity is being implemented under the name of M/s. Soham Mannapitlu Power Private Limited – SMPPL. The geographical co-ordinates of the project activity are 13°01'47" N (Latitude) and 75°03'33"E (Longitude) as confirmed from the technical clearance accorded by KREDL for the project activity (Ref./30/). The technology details as given in section A.4.2 of the PDD has been referred from the DPR (Ref./17/). The description of the project given in the PDD sufficiently covers all the elements of the project and does provide a clear picture of the nature of the project.

The implementation of the project activity was originally started by Bobba Group under Bobba Aviation Services Pvt. Ltd. But the project was subsequently ceased. Soham Renewable Energy India Pvt Ltd was offered to take up the partly constructed hydro plant by Bobba Group in "as is" condition. Then Soham Renewable Energy India Pvt Ltd has carried out an internal technical feasibility study (Ref./9/) to gauge the status of the project activity. This was validated from the internal technical feasibility study report dated 31 October 2007, wherein the technical team of Soham Renewable Energy India Pvt Ltd and a third party (Hydro Tech Consultants, Bangalore) was part of the inspection team that has done the technical feasibility study.

The technical feasibility study report has been presented to the Board of Soham Renewable Energy India Pvt Ltd. The minutes of the meeting of the Board of Directors of Soham Renewable Energy India Pvt Ltd dated 04/12/2007 was provided by the PP. From the minutes of the meeting it was confirmed that the Board had discussed the following. The project is about 80% complete and to finish the remaining work and make the project operational, a high incremental cost has to be borne by Soham Renewable Energy India Pvt Ltd which will make the returns from the project very poor. The Board has also expressed its apprehension of getting the necessary finance from the bank to complete the project because of the high cost. The Board has taken a decision to get the project registered under CDM to get the CDM revenue as already done for Mahatma Gandhi Project (Ref./33/). Considering the CDM revenue the board has then finally approved to take the necessary steps for the take over of the Bobba Aviation Services Pvt Ltd power project and also get the project registered under CDM and also decided to undertake a financial feasibility study. The financial feasibility study was conducted by Soham Renewable Energy India Pvt Ltd and the financial feasibility report (Ref./11/) dated 04/01/2008 was checked for the same.

The share purchase agreement was then signed on 28/02/2008 which has been considered as the start date of the project activity. However, the share transfer was completed only in April 2008 (Share transfer, resignation of Bobba Group Directors from the board of Bobba Aviation Services Pvt Ltd, and Soham Renewable Energy India Pvt Ltd directors getting inducted to the Board of Bobba Aviation Services Pvt Ltd, etc., took place only vide the Closing Memorandum dated 26.04.2008) after which Bobba Aviation Services Private Limited was officially owned by Soham Renewable Energy India Pvt Ltd. The Board Resolution dated 26th April 2008 (Ref./12 b/) further has strengthened the need for CDM to sustain the project activity.

Although the Bobba Aviation Services Pvt Ltd came under the control of Soham Renewable Energy India Pvt Ltd on 26/4/2008 completely, the name of the company was not changed immediately. The project activity is being implemented under the name of M/s. Soham Mannapitlu Power Pvt Ltd by Soham Renewable Energy India Pvt Ltd. The change of name was done on 07/11/2008. This was validated from the Certificate issued by the Registrar of Companies (Ref./28/), Karnataka, Ministry of Corporate Affairs, Government of India. The name of the company was changed from Bobba Aviation Services Private Limited to Soham Mannapitlu Power Private Limited.

Hence when version 01 of the PDD was webhosted for ISHC, the name of the PP in section A.3 of the PDD was mentioned as Bobba Aviation Services Pvt. Ltd and the LoA was provided in the name of Bobba Aviation Services Pvt Ltd. Subsequently when the name transfer was done in November 2008, the PP name in section A.3 of the PDD has been changed to Soham Mannapitlu Power Pvt Ltd. After this name change the PP has approached the Indian DNA to issue a revised LoA in the name of Soham Mannapitlu Power Pvt Ltd.

The DOE has entered into contract with the PP on 21st May 2008 by which time the company is wholly owned by Soham Renewable Energy India Pvt Ltd. But as already informed though the company was wholly owned by Soham Renewable Energy India Pvt Ltd when the DOE entered into contract in May 2008, the name of the company was still Bobba Aviation Services Pvt Ltd and hence the name of the company in the validation contract with the DOE was mentioned as Bobba Aviation Services Pvt Ltd. The name of the company was changed from Bobba Aviation Services Pvt Ltd to Soham Mannapitlu Power Private Limited in November

2008 and not the ownership. The ownership was changed in Feb 2008 itself when the share purchase agreement was signed. Hence the project is in conformance with EB50 annex 48 para 7 & 8 as the PP has not changed right from the date when the DOE entered into contract to till date.

4.4 Eligibility as a Small Scale Project

The project applies the small scale methodology AMS I.D version 15 which falls into the small scale project categories as per Appendix B of the simplified modalities and procedures for small scale CDM project activities. Under category I of small scale project activity the project activity involve installation of hydro project with a total capacity of 15 MW which is equal to 15 MW applicable under this category. The installed capacity of 15 MW has been validated from the (1) technical clearance for the project activity accorded by KREDL (Ref./30/), (2) Power purchase agreement (Ref./34/), (3) The certificate given by the equipment supplier (Ref./35/). All these reference sources confirms that the installed capacity of the project as 15 MW. As per the methodology, the eligibility limit for a small-scale CDM project activity is 15 MW. But it is not clear from the methodology whether the applicability limit has to be applied for the rated capacity of the turbine or the generator. In the case of the project activity the total capacity of the turbine was more than 15 MW but the total capacity of the generator was exactly 15 MW. Hence it was not clear whether the project is eligible to use the small scale methodology or not. Then the PP had applied for a clarification with CDM SSC WG. The CDM SSC WG (**SSC-338**) has clarified that the eligibility limit is based on rated capacity of generator (Please refer

http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_7ME1VFU0A1RKC8M3XUJGE07FBIWYT

). Therefore the project activity correctly fits into the categories of small scale project activity and is eligible to use simplified modalities and procedures for small-scale CDM project activities.

The project activity is not a debundled component of a large scale project activity as there is no registered small scale CDM project or a request for registration by the same PP in the same project category and technology/measure or registered within the previous two years; and whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point as checked from UNFCCC website (Project Search Interface <http://cdm.unfccc.int/Projects/Validation/index.html>) and as per the discussion during site visit.

4.5 Applicability of selected methodology to the project activity

This is a small scale project which uses the approved methodology AMS ID, Version 15, EB50: Grid connected renewable electricity generation. The project activity belongs to Type-I (Renewable Energy Projects) as it is generating electricity from hydro energy and falls under category D (Grid connected renewable electricity generation) as it supplies electricity to the grid. As per the methodology applicability condition "This category comprises renewable energy generation units, such as photovoltaic, 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." The project activity generates renewable electricity generation using hydro power that supplies electricity to the grid. The project activity qualifies as a small scale project as the total installed capacity is only 15 MW which is equal to 15 MW applicable for these projects. The project activity results in a new reservoir i.e. it results in a small pool of water created by putting up a Gated Weir Structure for the purpose of diverting the water into water conducting system to convey water to Turbines. This was confirmed during the physical inspection completed during the site visit. This was confirmed from the calculation performed in line with the formula given in project emission section of ACM0002 version 10. The area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m²) was checked from the plant layout diagram (ref./40/) and the installed capacity of the project is 15 MW. Installed capacity of the hydro power plant before the implementation of the project activity (W) is zero since it is a new hydro power plant. Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m²) is also zero as it is a new reservoir. Hence the power density as per the formula provided in equation 5 of ACM0002 version 10 is 220.56 W/m². The power density of the power plant is therefore greater than 4 W/m².

The project fulfils all the applicability conditions of the methodology AMS ID version 15. As the project involves generation of clean electricity using hydro power the project is not expected to generate any other GHG emissions within the project boundary and expected to contribute more than 1% of the overall average emission reductions and which is not covered in the applicable methodology. But to be conservative the PP is

monitoring the usage of DG set and in case if it is used the same will be deducted as project emissions while calculating the emission reductions from the project.

4.6 Project Boundary

As per the methodology the project boundary encompass the physical, geographical site of the renewable generation source. Accordingly the project boundary has been defined in the PDD which includes the physical and geographical site of the renewable energy source. The project boundary has been correctly identified as per the applicable project category. The southern grid of India has been correctly identified for calculation of electricity emission factor as the project displaces an equivalent amount of electrical energy from the Karnataka grid through Mangalore Electricity Supply Company Limited (MESCOM) which comes under the Southern Grid as per latest CEA Data (Version 03) available at the time of webhosting of the PDD for ISHC. (Ref:

<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>).

4.7 Baseline Selection and Additionality

According to the approved methodology AMS-I.D. version 15, paragraph 10, the baseline emissions are the product of electrical energy baseline expressed in kWh of electricity produced by the renewable generating unit multiplied by an emission factor and it has been correctly identified.

For the electricity displaced, the emission coefficient has been calculated in accordance with provisions under category I.D. The grid emission factor has been calculated using the combined margin (CM) approach, consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system'. The combined margin has been fixed ex-ante as 0.85 tCO₂/MWh and is fixed throughout the crediting period.

4.7.1 Additionality

As per the Attachment A to Appendix B of the simplified modalities and procedures for small scale CDM project activities and the latest guidance of EB35 Annex 34 "Non-binding best practice examples to demonstrate additionality for SSC project activities", the PP has demonstrated that the project activity would not have occurred due to (1) Investment Barrier. The barriers presented and the evidences checked are discussed in detail below.

4.7.2 Prior Consideration of the Clean Development Mechanism

As per section C.1.1 of the PDD Version 01 dated 10/08/2008, the project start date was 28/2/2008. **CAR#3 was raised** to provide proof of the start date, operational lifetime, CDM awareness and to demonstrate serious CDM consideration for the project. In response, the PP replied that this project was initially owned by Bobba Group under Bobba Aviation Services Private Limited. The construction of the project was started in the year 2004. However, due to project cost escalation during construction, the project financials were affected. The consortium of lending banks (Andhra Bank and UTI bank) has refused to further fund the project due to the cost escalation (Ref./24/ & Ref./29/) and non payment of loan instalments. As a result, the project implementation was halted (Ref./24/). At this juncture, Soham Renewable Energy India Pvt Ltd proposed to take over the project activity from Bobba Group and recommence its implementation. Soham Renewable Energy India Pvt Ltd group had already implemented a hydro project under the CDM which is already a registered CDM hydro project (Ref no. 0516, <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1152709432.89/view>).

The complete details about how the CDM has been considered seriously for the project are already explained under section 4.3 of the validation report above.

The date on which the share purchase agreement was signed i.e. 28/02/2008 has been considered as the start date of the project activity. The start date chosen was found appropriate for the project activity as explained below.

As per glossary of CDM terms version 05, "The CDM EB has noted that there may be circumstances in which an investment decision is taken and the project activity implementation is subsequently ceased. If such project activities are restarted due to consideration of the benefits of the CDM the cessation of project implementation must be demonstrated by means of credible evidence such as cancellation of contracts or revocation of government permits."

The above definition is applicable to the project activity. Soham Renewable Energy India Private Limited took over the project in “as is” condition from Bobba Group and re started the construction. The first formal document to be signed by the Soham, following which they could initiate any action with regard to the project activity, was the share purchase agreement. Therefore, the date of signing of the share purchase agreement (Ref. /10/) has been considered as the start date of the project activity. This is the earliest date on which the project participant has committed to expenditures related to the re-start of the implementation of the project activity. Hence the chosen start date was found appropriate and accepted by the validation team.

As stated above, the project activity was initially owned by Bobba Group. However due to lack of funds, Bobba Group was not able to continue the work on the project. Bobba was not able to pay the vendors and contractors involved in the project. Even the interest due to the banks was not able to be paid by Bobba. These were validated from the letter from contractor and the minutes of the meeting of the bank which has provided the loan for the project (Ref. /24/). Due to the inability to arrange the additional finance required for the completion of the remaining work, Bobba decided to sell the project in ‘as is’ condition. But Bobba cannot terminate the contract with contractors because they have not paid the amount due to the contractors. Then Soham being in the renewable energy sector and having a registered CDM hydro project (UNFCCC project number. 0516) decided to take over the project after conducting the due diligence.

After the completion of due diligence, Soham took over the project by signing the share purchase agreement with Bobba. Soham in the share purchase agreement has also agreed to take over the loan liabilities to banks, Unsecured Loans to Repay creditor and other liabilities and dues to be paid to vendors/contractors signed by Bobba. As agreed in the share purchase agreement, Soham has then settled the dues to vendors/contractors and also got the no objection certificate from the vendors to execute new contracts with vendors to restart the work. So the project has restarted only after Soham took over the project by considering CDM benefits. Although the share transfer was completed only in April 2008, start date considered for the project is the earliest date on which the Soham has made the commitment by entering into a share purchase agreement to restart the project by considering CDM benefits.

The existing contracts for Sri Saravana Engineering Works, Techno Power India, Shakthi Constructions, M.S. Melanta, P.C. Samuel Engineering Contractors, etc were terminated. The termination of the existing contracts was validated from the receipts of full and final settlement made to the existing contractors by Soham (Ref. /36/). It was also cross-checked from the No-Objection Certificates issued by the contractors that their existing contracts have been terminated and the existing contractors had no objection if Soham acquires the company since the full and final settlement is made to them (Ref. /36/). It was further cross-checked that Soham entered into fresh contracts for completion of the remaining work. All the new contracts are duly validated by the validation team (Ref. /37/). The condition of the project that it was in stalled and semi-complete stage at time of acquisition by Soham is also clearly mentioned in the 16th audited annual report of the company (Ref. /42/). .

The validation of the start date is in line with the definition to prove the project activity was ceased, “*If such project activities are restarted due to consideration of the benefits of the CDM the cessation of project implementation must be demonstrated by means of credible evidence such as cancellation of contracts or revocation of government permits.*” As per this guideline cancellation of contracts is one of the credible evidence to show the cessation of the project.

Hence, it was concluded by the validation team that the start date has been demonstrated as per the definition of start date provided in CDM Glossary version 5.

While the project implementation and transfer of shares was taking place, negotiations and correspondences with CDM consultants have been done simultaneously. As per EB49 annex 22 guidance continuing and real actions has to be taken to secure CDM status for the project in parallel with project implementation. The project was not yet commissioned at the time of the site visit and the PP has been taking necessary steps for the successful implementation of the project. As per EB49 annex 22 guidance the PP had the awareness of CDM prior to project start date as they already have a registered CDM project (Ref/33/). Then from the start date of the project on 28/02/2008, the PP had entered into a contract with a CDM consultant (Ref. /14/) on 02/06/2008 and with a DOE for Validation Services on 25/06/2008 (Ref./25/) and the PDD was uploaded on UNFCCC website for ISHC on 01/10/2008.

To sum up, the following chronology of events are provided again;

October 2007 – Soham Renewable Energy India Pvt Ltd and Hydro Tech Consultants carry out a site visit to study the condition of the project before take over. Soham Renewable Energy India Pvt Ltd and Bobba Group have meetings and discussions to arrive at the project cost.

November 2007 – An IRR based on the site visit is worked upon, based on the additional investment required and publicly available data from the KERC order. It reveals a poor return.

December 2007 – Board takes a decision to further conduct a detailed financial assessment.

January 2008 – A detailed financial assessment is carried out, which improves the IRR of the project after considering CDM revenue.

February 2008 – Board provides formal go ahead for the takeover considering CDM revenue. The share purchase agreement is signed between Soham Renewable Energy India Pvt Ltd and Bobba Group (Start date of project activity).

April 2008 – All transactions completed, project fully owned by Soham Renewable Energy India Pvt Ltd. Only from this date onwards could Soham Renewable Energy India Pvt Ltd initiate any action regarding the project.

June 2008 – CDM consultant officially appointed (though correspondence with CDM Consultant was going on from March 2008) and the DOE appointed.

October 2008: PDD was uploaded on UNFCCC website for GSC

Thus as per para 8a of EB49 Annex 22 guidance since there is less than two years of gap between the documented evidence it has been concluded that there is serious CDM consideration for the project activity.

CAR #3 was thus closed.

4.7.3 Identification of alternatives (if applicable)

The project activity applies the approved methodology AMS ID version 15 and as per the methodology in the absence of the project activity 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 and no further analysis is required to identify the alternatives.

4.7.4 Investment analysis (if applicable)

In line with VVM para 110 (a), the validation team has conducted a thorough assessment of all the parameters and assumptions used in the IRR calculation and also checked the accuracy and suitability of the parameters in the context of the project activity. In addition to this, the financial calculation has been reviewed by our internal financial expert to confirm the correctness of the calculation (VVM para 110(d)) and also to confirm that the relevant accounting practices in India has been followed. Apart from the primary source of data, the validation team has further cross checked the key parameters with independent sources of data like relevant statutory electricity regulatory commission orders which are publicly available and also with invoices to check the suitability of the data used in the IRR calculation which is in line with VVM para 110(b). The PP has not used any value in the IRR calculation from FSR for this project and hence VVM para 112 is not applicable for the project activity.

The explanation provided below describes how the financial calculation carried out for investment analysis is accurate in line with VVM para 110.

The excel spread sheet for investment analysis and sensitivity analysis calculation along with documentary evidence for all the input values/assumptions used in the investment analysis were not available during desk review of the version 01 of the PDD, thus **CAR #4 was raised** to get the details. As explained in section 4.3 of the report above the project was taken over by Soham Renewable Energy India Pvt Ltd in “as is” condition from Bobba Aviation Services Pvt Ltd. The project was ceased and restarted after consideration of CDM revenue. Hence as per Glossary of CDM terms investment analysis used to demonstrate additionality shall comply with the requirements of paragraph 7 of the “Guidance on the assessment of investment analysis” (version 02). As per the guidance of para 7 of EB 51 annex 58 “In the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM the investment analysis should reflect the economic decision making context at point of the decision to recommence the project. Therefore capital costs incurred prior to the revised project activity start date can be reflected as the recoverable value of the assets, which are limited to the potential

reuse/resale of tangible assets. Also as per the foot note 1 available in page 2 of that guidance “Capital expenditures should be included not at the original investment costs but at the market fair value at the point of the decision to proceed with the investment, demonstrating the value through assessments done by chartered specialists”.

Project Cost:

The hydro plant was initially owned by Bobba Group. The project activity was partially constructed by Bobba during the year 2007. Due to lack of funds the project activity was ceased. Soham then decided to take over the project by signing a share purchase agreement, wherein they would buy the project from Bobba in an “as is” condition and complete the rest of the construction work. The share purchase agreement describes all the costs in detail which would be payable by Soham (i.e. Share Purchase Consideration, Loans from Banks, Unsecured Loans to Repay creditor and other liabilities and Interest dues on Bank loans) before taking full control of the project activity. These costs were duly validated by the assessment team. Hence the costs payable by Soham as per share purchase agreement (Ref. /10/) reflect the total recoverable value by resale of the existing assets of the project activity and the same is included in the validation report. This was further cross checked from different sources like independent Chartered Accountant Certificate (Ref. /8/), Audited Annual Report as at 31.03.2008 (Ref. /41/). This is in line with foot note 1 of EB51 annex 58 which states that expenditures should be included not at the original investment costs but at the market fair value at the point of the decision to proceed with the investment, demonstrating the value through assessments done by chartered specialists. Hence, the assessment team concluded that the validation of recoverable value of the existing assets of the project activity is in accordance with paragraph 7 of EB 51 Annex 58.

The investment analysis has been validated considering the cost to be paid to Bobba to acquire the project and the additional costs required for project completion. Prior to the take over the following activities were carried out to assess the technical and financial aspects of the project.

1. Soham carried out a technical feasibility study (Ref. /9/) to gauge the status of the project activity. This technical feasibility study was conducted in October 2007, where the technical team of Soham and a third party (Hydro Tech Consultants, Bangalore) was part of the inspection team. As validated from the technical feasibility study report, the members of the inspection team has visited the site and analysed the project activity which was partly constructed. The technical study report clearly details out the process of assessment and the basis of the results. The team also cross checked the DPR (as prepared by Ms Design Group, Bangalore for Bobba) and presented their results, which has been provided in the report. Therefore, the technical feasibility study was based on the DPR and the actual conditions at the site. The concluding remarks of this study clearly state that there would be an increased cost to take over and complete the project. They have suggested that the same can be included in the decision while take over of the company. Further, they have also indicated an approximate incremental cost required for this take over and completion. This was validated from page number# 7 of the technical feasibility study (Ref. /9/). Soham has been in the hydro sector for several years and are involved in setting up of several hydro projects (<http://www.sohamenergy.in/thesohamstory.html>) and has a team of technical experts (personnel with over 20 – 30 years of hydro expertise in the team) they would be in a position to gauge the condition of the project activity. The analysis revealed that there was ample amount of work to bring the project to a proper shape, apart from the remaining construction activity.
2. Further a independent Chartered engineer study dated 28 December 2007 (Ref. /20/) has clearly indicated the additional costs associated with the pending activity towards completion of the project cost.
3. The share transfer agreement was then signed on 28/02/2008 – start date of the project activity.

The breakdown of the total investment costs -

- a) The investment cost assumed in the IRR calculations is –

Break-up of project cost	Units	Amount
Land	Rs in Lakhs	41.77
Power plant civil works	Rs in Lakhs	4926.62
Hydro mechanical equipment	Rs in Lakhs	894.23
Electromechanical equipment	Rs in Lakhs	2,839.06

Power evacuation	Rs in Lakhs	1,088.15
Preliminary, pre-operative expenses	Rs in Lakhs	366.4
Total	Rs in Lakhs	10,156.23
Note: 1 million = 10 Lakhs		

- b) The additional cost to be incurred till COD has been validated from the Chartered Engineer Certificate (Ref. /20/) and further cross checked from sources like Technical Feasibility Study report (Ref. /9/), Additional loan requisition to Bank (Ref. /13/) and the budgetary head wise estimate of the balance work (Ref. /26/) to complete the project. More over Project cost is one of the parameter subjected to sensitivity analysis.

The detail breakdown of the total project cost, during take over and additional costs estimated to complete the project is given below

Description	Initial Cost	Additional Cost after Re-start	Total on Completion	IDC Allocation	Total
Project Land	27.62	8.00	35.62	6.15	41.77
Civil Works	3,594.94	606.55	4,201.49	725.14	4,926.62
Hydro Mech Works	666.61	96.00	762.61	131.62	894.23
Electro Mech Works	1,689.12	732.07	2,421.19	417.87	2,839.06
Power Evacuation	429.94	276.93	706.87	122.00	828.87
Fee Paid to Govt. Depts	206.12	15.00	221.12	38.16	259.28
Pre-opt & Project.Mgt Exp.	297.47	15.00	312.47	53.93	366.40
Interest During Construction	1,294.87	200.00	1,494.87	-	-
Total	8,206.69	1,949.54	10,156.23	1,494.87	10,156.23

Hence the project cost is in line with para 7 of EB51 annex 58 guidance.

The project cost for the project activity (INR 67.708 million / MW) is higher compared to other hydro projects of similar size (As referred from KERC order (Ref./16/) the capital cost varies from Rs.390 lakhs to Rs.450 lakhs per MW. The Commission notes that the project cost of mini-hydel projects varies depending upon the location of the project, type of the scheme such as 'run of the river', canal based etc). The high project cost has been one of the main reasons for the project getting stopped in the middle after which it has been restarted after the consideration of the CDM. As the project has been taken over by Soham in "as is" condition, there were several activities pending to complete the project construction which escalated the capital cost. Following were some of the activities undertaken by Soham after taking over the project from Bobba.

1. De-watering and de-silting the entire power house and only then start re-work. Not only did this escalate the cost but it also led to a lot of re-engineering and re-structuring of the plant. Beginning

- with the chipping off of bad concrete, using shear connectors to increasing the thickness on both sides of the end walls was the re-construction that was involved.
2. Re construction of wall (one of the row walls of the power house constructed was almost bent and required immediate re construction). Now, a new power house wall against the existing wall will be constructed, to ensure no load on this wall.
 3. The usual practice for any small hydro project is to include one trash rack, one set of service gates and a common stop log gates for the entire project. However, for this project two trash racks, two sets of stop log gates and two sets of service gates have been installed. These have been designed in the interest of emergency preparedness in case of floods. This has involved an additional cost for Soham.
 4. One unit of the Turbo Generator had to be purchased.
 5. Pending electrical work / pooling station work etc.

The technical team and financial team have estimated that additional cost of about 18 to 20 crores would be required to complete the construction of the project. This has been validated from the technical feasibility report prepared during take over of the project. (Ref. /9/) and the independent Chartered Engineer certificate (Ref. /20/).

The Karnataka Electricity Regulatory Commission (KERC), through their Tariff Order dated 18 January 2005, have stated that the cost per MW for hydro projects in Karnataka is 390 Lakhs. This is a very conservative cost and the validation team has referred several other documents mentioned below apart from KERC order which indicate that the project cost for hydro projects are typically in the range of 5 – 6 Crores / MW. Further, the KERC order was dated 2005 and the project activity was taken over during the year 2008. Therefore, the escalation factor would also have to be applied into the capital cost provided by KERC.

Following are some of the publicly available literature which indicate the cost per MW for typical hydro projects,

1. As per the Boving Fouress (Ref. /44/) presentation at the Renewable Energy India 2008 Expo, it has clearly indicated that there has been a steep increase in capital costs of Small Hydro projects in India. As referred from page 17 of the presentation, the typical capital costs for the years 2003, 2005, 2007 and 2008 have been compared.

Cost per MW	INR in Crore / MW (as indicated in the Boving Fouress paper)	Project activity cost per MW
2003	3.9	--
2005	4.2	--
2007	5.0	--
2008	6.0	6.67 (based on share purchase agreement and additional costs required to complete project construction) signed on 28 February 2008.

2. A consultation paper presented to the Tamil Nadu Electricity Regulatory Commission (Ref. /45/) states the following –

As per page 11 of the consultation paper there is a wide variation ranging from Rs 3 Crores to Rs 6.5 Crores per MW in capital cost adopted by different Commissions. Hence, the Commission addressed MNRE and IREDA to furnish the reasonable capital cost for SHP projects. The Chairman and Managing Director of IREDA in his letter dated 31-03-2009 has stated that the capital cost for the capacity up to 5 MW varies from Rs.6.20 – 6.95 Crores per MW and the MNRE in their letter dated 30-03-2009 have stated that the average capital cost is in the range of Rs.6.00 – 6.50 Crores per MW. Further, as per the manual on development of small hydro electric projects published in 2009 by Central Board of Irrigation & Power (CBIP), the project cost is in the

range of Rs.5.00 – 7.00 Crores per MW. The Central Electricity Regulatory Commission (CERC) in their Terms and Conditions for Tariff determination from Renewable Energy Sources Regulations, 2009, have adopted the following capital cost for Small Hydro Project, which is inclusive of all capital work including plant and machinery, civil work, erection and commissioning, financing and interest during construction, and evacuation infrastructure up to inter-connection point. In response to the Commission's subsequent letter, IREDA has stated in their letter dated 26-05-2009 that the project cost of SHP upto 5 MW in the plains varies from Rs.5.82 Crores/MW to Rs.6.76 Crores/MW.

3. In an interview Prof Damodaran, June 2008 (energy consultant to UNIDO) (Ref. /46/) has stated that the capital cost for small hydro projects in India is about 7 crore per MW.

The assessment team also checked some of the Project registered with the UNFCCC for typical capital cost of hydro projects

Start Date	Capital Cost	Capacity	UNFCCC Registration Number
February 2004	4.70 Crores / MW	4 MW	Registration Number 3761, capital cost higher than that of KERC Order 2005 of 3.90 Crores / MW
February 2006	6.5 Crores / MW	3 MW	Registration Number 3434
September 2004	6.04 Crores / MW	22 MW	0516
March 2005	5.83 Crores / MW	9 MW	Registration Number 1575, capital cost higher than that of KERC Order 2005 of 3.90 Crores / MW
April 2006	5.67 Crores / MW	10 MW	0958

Therefore, it was concluded by the validation team that the cost per MW considered for the project activity (given the specific circumstances in the project such as delay, re construction, clearance of vendor and bank dues) is within the range of other hydro projects during the time of take over (2008).

Furthermore, the actual project cost that has been incurred until 31st March 2010 works out to be approximately INR 106 crores. Please refer the audited balance sheet of the company as at 31st March 2010 (Ref. /43/). Therefore, the capital cost value input considered in the IRR sheet was found to be conservative.

The above justification provided on the per MW project costs, have been sourced from publicly available documents. Further the actual cost incurred towards the completion of the project activity is clearly reflected in the audited balance sheet and is consistent with the value used in the PDD. Hence the project cost has been validated in line with VVM v1.1 para 110 (b) by cross checking the project cost against publicly available sources.

Also project cost is one of the parameter subjected to sensitivity analysis and even with -10% variations the project return is still below the benchmark.

Plant Load Factor (PLF)

The PLF considered for this project activity is 34.38% which is based on the DPR (Ref./17/) prepared by a consultant contracted by the Bobba Aviation Services Pvt Ltd who was the initial owner of the project. The same PLF of 34.38% has been provided to KREDL by Bobba Aviation Services Pvt Ltd (Ref./30/) to get the technical clearance for the project activity. As per EB 48 annex 11 guidelines, the PLF provided to government for implementation approval is acceptable. KREDL is the nodal government agency authorised to provide technical clearance for renewable energy projects in the state of Karnataka where the project activity is located. KREDL (Govt. of Karnataka organisation) has mentioned in their technical clearance letter (Ref./30/) for establishment of the project activity, that the estimated energy generation from the project activity is 45 Million units (PLF is around 34.25%). Since the project has been taken over by Soham Mannapitlu Power Private Limited in "as is" condition the same PLF as estimated by Bobba Aviation Services Pvt Ltd has been used. This was found appropriate and thus accepted.

But to further cross check whether the chosen the PLF is appropriate or not, KERC order (Ref./16/) was checked. KERC has only suggested a normative PLF of 30% for all mini-hydel projects. Thus the PLF chosen for the project i.e.34.38% is conservative and thus accepted. An auxiliary consumption of 0.5% has been considered as suggested by KERC and hence the same is accepted.

O & M Cost

The O&M expenses (1.5% of project cost); Escalation in O & M cost (5%) has been taken as suggested by KERC and the same was checked from KERC order (Ref. /16/) and found appropriate. KERC is an autonomous body set up by the Government of Karnataka. KERC regulates all aspects of the electricity sector in the state of Karnataka where this project activity is located. Full functions and powers of KERC can be found from <http://www.kerc.org/english/index.htm> I. Hence the input values taken from KERC can be considered as conservative and authentic as it publishes these data after a wide consultation with the different stakeholders involved.

Tariff:

The tariff of Rs. 3.60/- per kWh has been considered for the project activity additionality argument. Power Purchase Agreement was signed between KPTCL and Bobba Power Projects in the year 2004. However, with the developments of the project and the delay in completion, the PP was looking at the possibility of sale of electricity to a third party through the open access system. The PP has started negotiation with some private parties who are willing to off-take the power generated in the project. A tariff of Rs. 3.60/- per kWh has been offered by Tata Power Trading Limited (Ref./38/). The same tariff as offered by Tata Power trading has been used in the IRR analysis. This tariff rate was again compared with the KERC (Ref./16/) suggested tariff which is Rs. 2.80 / kWh and hence the chosen tariff is on the higher side which is conservative and hence accepted. The PP further clarified that to sell power to a third party, prior approval from KPTCL must be sought before sale to the third party. When the PP approached KPTCL in this regard, the sale to third party was turned down and the PP has been asked to abide by the original PPA with KPTCL that was signed by Bobba Power Projects (Ref./34/) in the year 2004. Soham Mannapitlu Power Private Limited has now appealed to KERC in this regard. KERC has provided an interim judgement (Ref/31/) and has provided the interim tariff order for the project activity and in the order it is mentioned that the tariff for power generated will be Rs. 2.90/- per kWh. Hence from the above discussion it is clear that the tariff chosen for the financial calculation i.e. INR 3.60/kWh is higher and thus conservative.

Other Input Values:

Moratorium period is not included in the analysis because the moratorium period has already elapsed for the project. The PP was asked to clarify the importance of repairs and maintenance cost. The PP clarified that it has been a practise at Soham Renewable Energy India Pvt Ltd to include a reserve and refurbishing fund to compute repairs and maintenance cost. A financial analysis of one of their other hydro project (Ref. /27/, /33/) was provided to show us the allocation of reserve and refurbishing fund. The validation team confirmed that in the other project also a refurbishing fund of 0.05% and a reserve fund of 0.5% has been considered. Although it was the practice of the PP to include separate repairs and maintenance cost apart from regular O & M cost, the validation team was not able to find out this type of separate cost in other similar hydro projects as checked from KERC tariff orders^{/16/}. Finally the PP has removed the removed the repair and maintenance cost from IRR calculation. This was accepted as it is a conservative approach as this cost is on the expense side.

Subsidy has been correctly considered in the calculation as given by MNRE erstwhile MNES (Ref. /18/). The percentage contribution of debt and equity in the project has been ascertained based on the independent Chartered Accountant certificate (Ref. /8/). This project activity has been financed by consortium of banks (namely Andhra Bank and Axis Bank). The prime lending rate (PLR) of Andhra Bank is 14% and Axis Bank is 14.75% as confirmed from the individual bank letter (Ref./15/) to the PP and among these two, the lowest (14%) has been considered as the interest on term loan for the project activity. Depreciation has been considered based on companies act and income tax and minimum alternate tax has been taken as per IT act. The financial analysis has been performed for a period of thirty years which is the life time of the project. The life time of the project has been ascertained based on Letter from a Chartered Engineer (Ref./32/). The financial analysis has been checked and it follows the relevant guidance of EB51 annex 58 regarding the "Guidance of Assessment of Investment Analysis". Based on the above input values the project IRR comes to about 11.58%. The IRR calculation has been reviewed by our internal financial expert and found appropriate.

Benchmark Selection:

The PP has chosen project IRR as the financial indicator. Project IRR is one of the accepted indicators in project appraisal and hence the same was accepted. As per para 12 of Annex 58 of EB 51, local commercial lending rate is an appropriate benchmark for project IRR. Hence it is confirmed that the type of benchmark used is appropriate to the type of IRR applied as required by VVM version 1.1, para 111 (a). This project activity has been financed by consortium of banks (namely Andhra Bank and Axis Bank). The prime lending rate (PLR) of Andhra Bank is 14% and Axis Bank is 14.75% as confirmed from the individual bank letter (Ref./15/) and among these two the lowest i.e. the conservative one (14%) has been considered as the benchmark for the project activity. But after Soham Renewable Energy India Pvt Ltd took over the project for the completion of the remaining work in the project, they have approached the same banks for a loan. But the banks refused to provide further loan for the project. Then the PP has approached the syndicate bank for the loan and it has provided the loan necessary for the completion of the project (Ref./39/). The Syndicate Bank in its letter has confirmed that the rate of interest will be 13.75% or the rate of interest charged by other consortium banks whichever is higher. Hence the benchmark of 14% considered for the project is conservative. No risk premium has been applied for the benchmark which is again conservative approach. Hence VVM para 111 (b) is not applicable.

VVM para 111(c) is not applicable for the project activity as the benchmark used is not an internal company benchmark. As per EB51 annex 58 para 13, the benchmark for the project has been calculated based on publicly available data sources as this project can be developed by an entity other than the PP and the benchmark used has been clearly validated by the DOE as explained above.

Thus the benchmark calculated for the project activity (14%) was found in line with VVM version 1.1 para 111.

Hence the project IRR of 11.58% is below the benchmark return of 14%. The PP was asked to clarify how the project IRR computed as 12.35% in version 01 of PDD has come down to 11.58% in the final PDD. The PP clarified that in the version 1 of the PDD, the value of IRR was based on a tariff of Rs 4/kWh which results in an IRR of 12.44%. The IRR of 12.35% as mentioned in the PDD version 1 was a typographical error. The Rs.4 / kWh tariff based IRR computed was a best case scenario (i.e., the maximum tariff that could be assumed). At the time of publishing of the PDD for GSC, Soham Mannapitlu Power Private Limited has not signed any power purchase agreement. Hence for IRR computation the best possible tariff of Rs.4/kWh has been assumed. But there was no supporting document for this tariff. Hence the tariff was revised to 3.60 as per the offer given by Tata power Trading Ltd.(Ref./38/). Please refer above for the validation of tariff and how the assumed tariff of Rs.3.60/kWh is appropriate for the project. Also the separate repairs and maintenance cost which was considered in the version 01 of the PDD has been removed in the final version of the PDD. The following are the major changes in the parameters compared to version 01 of the PDD and the final PDD.

Parameter	Value as per PDD published for GSC	Value as per Final PDD	Reason for Difference and acceptance
Total Project Cost (Million INR)	1015.623	1015.623	No difference
Per MW cost (Million INR)	66.7	67.7	Typo. (This was accepted because the total project cost is same. Only the per MW cost mentioned in description section under section B.5 of version 01 of PDD was wrongly mentioned as 66.7 million INR which was a typo)
Repairs and Maintenance Cost (Million INR)	1.862	-	This cost has been removed in the final PDD. This is conservative as this cost is on the expense side of the project.
Reserve Fund & Refurbishing Fund (% of project cost)	0.05 0.50	-	This fund has been removed in the final PDD. This is conservative as this cost is on the expense side of the project.

Tariff (INR/kWh)	4	3.6	Please refer the validation report above under the head "Tariff" for justification.
IRR without CDM	12.35%	11.58%	The reason for the difference in IRR is due to the fact that the tariff is different and the Repair and Maintenance, reserve and refurbishing fund have been removed. With these differences the IRR was supposed to be 12.44% (at Tariff INR 4 and including R&M, reserve fund & refurbishing cost), but due to a typo was mentioned as 12.35% in the published PDD.
Benchmark	14.75%	14%	Lending institution is a consortium of banks - Andhra Bank (14%) and Axis bank (14.75%). As a conservative approach, the lower BPLR has been chosen.

Thus it is evidenced that the project is not financially feasible without some financial incentive, such as CDM revenues. The PP also has analysed the project considering the CDM revenue; with these expected revenues, the project IRR improves to 14.24%. Hence it is evidenced that it is critical for the project to get the CDM revenue in order to make the project financially feasible.

Para 17 of Annex 58 of EB 51 states, "Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation (all parameters varied need not necessarily be subjected to both negative and positive variations of the same magnitude)".

Hence sensitivity analysis has been carried out with +10% and -10% variation for the project cost, PLF, O&M cost and tariff. The validation team is of the opinion these are the key parameters which will have an impact on the additionality of the project. Also the range of variation applied for sensitivity is also appropriate. However even after varying these key parameters by $\pm 10\%$ the project is not able to cross the benchmark return.

Hence it can be concluded that the project is not financially attractive without CDM. This is the most important barrier among the various barriers presented. After satisfactory reply to all the points raised regarding financial analysis for the project, **CAR #4 was closed**.

Hence the project was found additional based on the investment barrier faced by the project activity.

4.7.5 Barrier analysis (if applicable)

The other barriers presented in version 01 of the PDD were not found prohibitive enough and the project has been concluded as additional based on the investment barrier faced by the project activity.

4.7.6 Common practice analysis

Being a small scale project the additionality has been demonstrated as per the Attachment A to Appendix B of the simplified modalities and procedures for small scale CDM project activities and further guidance given in EB35 Annex 34 "Non-binding best practice examples to demonstrate additionality for SSC project activities" and hence common practice analysis has not been performed.

4.8 Application of Baseline Methodology and Calculation of Emission Factors

As per the approved methodology the baseline emissions due to the project has been correctly calculated as the product of the net electricity supplied to the grid and the grid emission factor as per the combined margin approach. The project exports electricity to the Karnataka grid which falls under the Southern grid of India. The grid emission factor of Southern grid has been calculated using CEA data "CO2 Baseline Database for the Indian Power Sector" Version 03. The CEA database is an official publication of the Government of India for the purpose of CDM Baselines. In order to facilitate adoption of authentic baseline emissions data and also to ensure uniformity in the calculations of CO2 emission reductions by CDM project developers, Central Electricity Authority (CEA), in cooperation with GTZ CDM-India, has compiled a database containing the necessary data on CO2 emissions for all grid-connected power stations in India. CEA intends to update the

database at the end of each financial year. The database has been developed in accordance with the CDM methodologies / tools like “Tool to calculate the emission factor for an electricity system“. The database can be accessed online at <http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>. The grid emission factor calculated ex-ante (0.85 tCO₂/MWh) has been fixed for the entire crediting period. The grid emission factor was found to be consistent with the CEA data. The CO₂ emission factor of diesel has been taken from IPCC 2006.

As per the methodology project emissions from water reservoirs of hydro plants needs to be accounted as per procedures described in latest version of ACM0002. As per equation 4 of ACM0002 version 10, if the power density of the project is greater than 10 W/m² then project emissions from water reservoir is zero. The power density calculation has been checked and is greater than 10 W/m² and hence project emissions from water reservoir are not accounted. However to be on the conservative side the PP has considered project emissions on account of DG sets which are provided to meet the emergency requirements in the power house. The formula used for calculating the ex-post estimation of the project emission was not correct. **CAR #5 was raised** to correct the formula used for project emissions due to DG sets. In response, the PP has corrected the formula as per the EB-41 annex 11 guidelines. Hence **CAR #5 was closed**. There are no leakages associated with this project as no energy generating equipment has been transferred from another activity or the existing equipment has not been transferred to another activity as it is a new installation and the same was verified from the purchase order of main equipments.

4.9 Application of Monitoring Methodology and Monitoring Plan

As per the methodology “Monitoring shall consist of metering the net electricity supplied by the project activity to the grid.” In line with this the monitoring plan does include monitoring of the total electricity supplied by the project to the grid, Total electricity imported from the grid by the project activity and both these parameters will be measured using calibrated tri vector meters. From this the net electricity generated by the project will be calculated as the difference of export and import from the project. The emission reduction calculation will be based on this net electricity generation. All these three parameters namely export, import and net electricity generation can be cross checked against the invoices and payment receipts. Apart from this monitoring also includes fuel consumption of DG set. In case the DG set is operated the fuel consumption will be monitored and will be included as project emissions.

In section B.7.2 of the PDD, description of measurement methods and procedures, QA/QC procedure given for FHSD was not clear. Hence **CL #6 was raised**. In response, the PP has corrected the measurement methods and the QA/QC procedures and included the same in the revised PDD. Hence **CL#6 was closed**.

Training of monitoring personnel was not mentioned in the PDD Version 01, **CL #7 was raised**. In response, the PP mentioned that employees have been trained in-house personnel (Ref. /21/). To gain experience, the trainees are first posted in the other hydro project plants. After gaining hands on experience on the operation of hydro plants, they will be transferred to the project activity. Apart from this training, various member of the CDM team will be trained time to time according to the departmental needs. Same was included in the revised PDD version 1.3. **CL #7 was closed** after receiving satisfactory reply.

4.10 Environmental Impacts

As per the Host Country requirement there is no need to conduct EIA study for this project (Ref./22/). As per the EIA notification of 14th September 2006, the project does not fall under either Category A or Category B of the said notification. The same was cross checked with the Ministry of Environment and Forest EIA notification dated 14/09/2006.

4.11 Local Stakeholder Comments

A local stake holder meeting was conducted on 6th June 2008 at Mannapitlu and it is before the web hosting of the PDD for ISHC. Personal invitations were sent to the local representatives before 15 days of the meeting (Ref. /23/). The attendance sheet of the list of participants in the stake holder meeting and written feed back of the stake holders was checked at the time of site visit by the validation team and confirmed that the PP has taken sufficient feed back from the stake holders and no major negative feed back was observed. The PDD also briefly summarise the comments received from the stake holders and since there was no major negative concern from the stake holders no further action is required from the PP. Same was verified

with some of the stake holders during the site visit. All the relevant stake holders have given their consent for the setting up of the project and hence due care has been taken by the PP to consult the local stake holders in the process.

5. Comments by Parties, Stakeholders and NGOs

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

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

The Project Design Document for this project was made available on the UNFCCC website <http://cdm.unfccc.int/Projects/Validation/DB/FWN1MR7VDA2D399NNMTRXQLVOPG0AL/view.html> and was open for comments from 01/10/2008 until 30/10/2008. Comments were invited through the UNFCCC CDM homepage

5.2 Compilation of all Comments Received

Comment Number	Date Received	Submitter	Comment
1	NA	NA	NA

5.3 Explanation of How Comments Have Been Taken into Account

No comments were received during the web hosting period.

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
25/11/08 and 26/11/2008	Mr. B. N. Venkatesh Murthy	Senior Manager	CDM Consideration, Baseline, Additionality, Environmental Impacts, Emission reduction Calculations, Stakeholder Consultation, Monitoring Plan
	Mr. Vithal M Navade	Manager	
	Mr. V Rajesh Kumar	Manager	
	Ms. Priya	CDM consultant	Emission Reduction calculations, Financial Analysis

7. Document References

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

- /1/ PDD version 01 dated 10/08/2008 (used for ISHC in the first web hosting period)
- /2/ PDD version 1.1 dated 24/02/2009
- /3/
 - a. PDD version 1.2 dated 27/03/2009
 - b. PDD version 1.3 dated 05/05/2009
 - c. PDD version 1.4 dated 10/06/2009
 - d. PDD version 1.5 dated 17/02/2010
 - e. PDD version 1.6 dated 29/03/2010 (Submitted with initial RFR)
- /4/ PDD version 1.7 dated 17/12/2010 (Submitted after request for Review from UNFCCC with RfR)
- /5/
 - a) HCA letter dated 12/01/2009 with ref.no:4/25/2008-CCC given by Ministry of Environment & Forests, the Indian DNA
 - b) HCA letter dated 29/06/2009 with ref.no:4/25/2008-CCC given by Ministry of Environment & Forests, the Indian DNA
- /6/ Modalities of Communication
- /6/ Emission Reduction Calculation Sheet Version 02
- /7/ Investment Analysis Excel sheet

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

- /8/ Chartered Accountant Certificate (Mr. Narasimha Murthy, Chartered Accountant, M.No:214628) dated 18/10/2008 for %debt & %equity contribution in the project and break up of the project cost as on 31-03-2008.
- /9/ Technical Assessment Study Conducted on 31/10/2007
- /10/ Share Purchase Agreement dated 28/02/2008 considered for start date
- /11/ Financial feasibility study report dated 04/01/2008
- /12/
 - a. Board note minutes for Soham Renewable Energy India Private Limited, dated 4th December 2007
 - b. Board Note minutes for Soham Renewable Energy India Private Limited, dated 26th April 2008
- /13/ Letter to Syndicate bank for additional fund 26/05/2008
- /14/ Engagement of Consultant dated 02/06/2008
- /15/ PLR of Andhra bank Letter dated 16/2/2008 with ref.No.099/1/Bobba from Andhra Bank and Axis bank letter dated 15/2/2008 with ref.no: AXB/BLR/CR/5647/2007-08
- /16/ KERC guidelines for project cost, PLF, O & M charges, Auxiliary Consumption (KERC order dated 18/01/2005 In the matter of Determination of Tariff in respect of Renewable Sources of Energy)
- /17/ DPR of Mannapitlu Mini Hydel Scheme by Design Group Project Consultants (P) Ltd. dated March 2003 for Bobba Power Projects.
- /18/ MNRE Subsidy announced by MNES vide circular number 14(5) / 2003-SHP dated 29/7/2003
- /19/ Draft PPA between Bobba Aviation Services Pvt Ltd and TATA Power Trading Company Limited for discussion in December 2007
- /20/ Chartered Engineers Certificate, Ref no SR/8745/PIR/07 dated 28/12/2007
- /21/ Attendance Sheet for training details
- /22/ Ministry of Environment and Forest, Government of India - EIA Notification dated 14 September 2006
- /23/ Local stakeholders meeting invitation and attendance sheet
- /24/ Minutes of Bank Consortium Meeting held on 23/07/2007 for additional funds for completing the

project

- /25/ Contract with DOE for Validation Services dated 25/06/2008
- /26/ Cost estimate for the completion of the balance work
- /27/ Appraisal report on Mahatma Gandhi Hydro Electric Tail Race Project
- /28/ Fresh Certificate of Incorporation Consequent upon Change of Name; C.C.NO. 220/2009-10, SRN A 65611378 dated 21-07-2009, Issued by Registrar of Companies, Karnataka
- /29/ Andhra Bank Letter no 099/1/Bobba/120 dated 25/05/2005
- /30/ Letter from Karnataka Renewable Energy Development Limited for technical clearance for the project activity. Ref No KRED/06/mannapitlu/2003/1017 dated 04/07/2003.
- /31/ KERC order for tariff. Ref No N/38/09 dated 10th September 2009 in the Case No. OP 27/2009 between Soham and KPTCL
- /32/ Letter from Chartered Engineer Ref. 8767/09 dated 19/03/2009
- /33/ UN0516: Mahatma Gandhi Hydro Electric Tail Race Hydro Power Project of APPL, India (Weblink: <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1152709432.89/view>)
- /34/ Power Purchase Agreement between Karnataka Power Transmission Corporation Limited and Bobba Power Projects dated 26/11/2004.
- /35/ Certificate given by Jyoti Ltd for the capacity of the generator (two numbers) and Purchase order No.SREPL/Mannapitlu/PO-006 for the third generator dated 18/3/2008 issued to T.D. Power Systems
- /36/
 - a. Deed of settlement dated 20.3.2008 signed by M/s. Saravana Engineering Works with M/s. Bobba Power Projects and M/s. Soham Renewable Energy Pvt. Ltd.
 - b. Settlement to Techno Power India dated 14.3.2008
 - c. Settlement to Shakthi Constructions (Civil Engineers and Contractors) dated 14.3.2008
 - d. Full and Final Settlement dated 13/3/2008 to Prabhakar Shetty
 - e. Full and Final Settlement dated P.C.Samuel, Engineering contractors dated 13/3/2008
- /37/ Partial List of Work Orders issued by Soham after the take over of the project.
 - a. Work Order SREPL/Mannapitlu /WO - 001 dtd 26.02.2008 to Mr. N.C. Reddy, Bangalore
 - b. Work order SREPL/Mannapitlu/WO - 002 dt 12.03.2008 issued to M/s. Shakthi Constructions
 - c. Work order SREPL/Mannapitlu/003 dtd 05.03.2008 issued to Ummayya Constructions
 - d. Work order SREPL/Manna/Site PO / 3 dtd 09.05.2008 issued to Vishwas Fabricators & Shutters
 - e. Work order SREPL/Mannapitlu/Site WO/04 dt. 12.05.2008 issued to Nethravathi Pump Services
 - f. Work order SREPL/Mannapitlu/WO / 006 dt. 18.03.2008 to M/s TDPS Pvt. Ltd.,
 - g. Work order SREPL/Mannapitlu/WO/008 dt. 25.03.2008 to Techno Power India
- /38/ Tariff offer letter dated 11th Dec 2007 from Tata Power Trading Company Limited
- /39/ Letter of sanction of term loan from Syndicate Bank with Ref.No. SL227/0461/2009 dated 05/03/2009.
- /40/ Mannapitlu MHS: General Arrangement of the Scheme, Drawing No. DG/MNPTL/C/001 (R1) by Design Group Project Consultants (P) Ltd. dated 18/12/2004.
- /41/ Audited Annual Report as at 31 March 2008
- /42/ Audited Annual Report as at 31 March 2009
- /43/ Audited Annual Report as at 31 March 2010
- /44/ Presentation by Boving Fouress titled "Small Hydro Power business Proposition, Industry Challenges and Policy Framework" (http://portal.unesco.org/geography/en/files/10588/12277798775K_C_Ashok.pdf/K%2BC%2BAs_hok.pdf)
- /45/ TNERC consultative paper on "Procurement of power from small hydro power" (<http://tnerc.gov.in/Concept%20Paper/2010/Consultative%20Paper-Smal%20hydro%20CP%20FC.pdf>)
- /46/ <http://www.thehindubusinessline.com/2008/06/17/stories/2008061750030700.htm>

/47/ Letter dated 14/11/2007 from Shakthi Constructions

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A.1 Annex 1: Local Assessment

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for **Mannapitlu Small Hydel Project**

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

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
Check the Host Country Approval (HCA)	HCA obtained from DNA of India. Corrected HCA needs to be submitted with change of PP name	HCA letter dated 12/01/2009 with ref.no:4/25/2008-CCC given by Ministry of Environment & Forests the Indian DNA	Pending CAR #1 Corrected HCA received and is ok. Car #1 closed
Check the modalities of communication	MoC has been provided by PP and is as per guidelines	MOC	Pending CAR #2 MoC received as per new format. Hence CAR #2 closed.
Check the usage of public funding	Chartered Accountant certificate has been provided for not using the public funding	Letter from the Chartered Accountant dated 18/10/2008	Y
Documentary proof for the project technology stating that, this project will not be substituted by other or more efficient technologies within the project period needs to be submitted.	PP has provided the self declaration letter	Declaration letter	Y

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
PDD has not discussed anything regarding the initial training needed to work as presumed during the project period. PDD has not discussed about the provisions made to meet the training and maintenance needs of the project activity.	Training procedures was incorporated in the revised PDD version 1.1	PDD version 1.1 and the attendance sheet for the training programme	CL # 7 CL# 7 was closed
Check the project boundary	Checked during site visit	Site visit	Y
Check Proof for life of the project	Chartered Engineers certificate has been checked for life time of the project activity	Letter from the chartered Engineer, Ref no 8767/09 dated 19/03/2009	Y
Check the evidence and documentary proof for rated capacity and other specifications and manufactures data	Rated capacity was cross checked with the chartered engineers certificate	Letter from the chartered Engineer, Ref no 8767/09 dated 19/03/2009	Y
Check Power Purchase Agreement between Electricity Authority and Project Proponent.	This was initially executed by Ms Bobba aviation services private limited. Now Soham is going for private party	Draft PPA	Y
Check Energy secretariat Enhancement order	Energy Secretariat enhancement order for the capacity of plant	Energy Secretariat enhancement order no ED 242 NCE 2003, dated 7 th May 2003	Y
Check Ownership details	Now soham renewable energy is the owner for this project	Share Purchase Agreement dated 28/02/2008	Y
Check documentary evidence regarding Project Additionality to substantiate Investment Barrier and Other Barriers as given in PDD	Investment analysis spread sheet has been provided	All the input values were checked from DPR, KERC guidelines and Chartered Accountant certificates	Y

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
Check the availability of monitoring instruments at site and provide QA/QC policy for the same	Plant is under construction. No monitoring equipments available during site visit.	Site visit	Y
Check the excel spreadsheet for Emission Reductions calculations and financial analysis along with Traceability of data used for calculation.	Basis for PLF has been checked from DPR	DPR	Y
Check the local stakeholder consultation documents (Media of communication, minutes of meeting, comments, etc)	Local stake holder process has been cross checked with the invitation, attendance sheet, and the feedback from local stakeholders	Copy of invitation, Site visit	Y
Check the EIA conducted for project activity or if EIA is not required as per host country legislation a detail reference of the same, under which EIA is not required for the project activity.	EIA for this project activity is not required	MOEF letter no J-21011/15/2005-IA.I dated 05/10/2005	Y

A.2 Annex 2: Validation Checklist

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

Requirement	Reference	Comments	Conclusion/C ARs/ CLs
<p>1. All Parties involved have approved the project activity</p> <p>1.1. Has the DNA of each Party involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval which confirms</p> <p>1.1.1. The country is a Party to the Kyoto Protocol</p> <p>1.1.2. Participation is Voluntary</p> <p>1.1.3. The Host Party confirming that the proposed CDM project activity contributes to sustainable development of the country Non-Annex 1 Party shall submit a letter of approval</p> <p>1.1.4. It refers to the precise proposed CDM project activity title in the PDD being submitted for registration</p>	<p>Annex 3, Clean Development Mechanism, Validation and Verification Manual, Version 01 (from this point forwarded referenced as VVM) - 49a-d /54a-b/125</p> <p>Paragraph 37 CDM Modalities and procedures</p>	<p>As per section A.3 of PDD the party listed is India. India has ratified the Kyoto protocol on 26th August 2002 and is allowed to participate. The web link is http://unfccc.int/parties_and_observers/parties/items/2109.php .</p> <p>The project activity is likely to contribute to sustainable development in India. The letter of approval from the DNA of the host country needs to be submitted.</p>	<p>CAR # 1</p> <p>LOA submitted and is as per guidelines.</p> <p>PP name is not consistent with PDD. PP has applied for change in ownership in the awarded HCA.</p> <p>CAR #1 is open.</p> <p>Revised HCA received and the PP name is consistent with PDD. CAR #1 is thus closed.</p>

Requirement	Reference	Comments	Conclusion/CARs/CLs
<ul style="list-style-type: none"> The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above 	VVM Para. 49/54	Pending CAR #1 The letter of Approval is unconditional.	Pending CAR #1 CAR #1 closed out
2. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30 days, and the project design document and comments have been made publicly available	VVM Para. 128 Marrakech Accords, CDM Modalities, §40	The Project Design Document for this project was made available on the UNFCCC website http://cdm.unfccc.int/Projects/Validation/DB/FWN1MR7VDA2D399NNMTRXQLVOPG0AL/view.html Starting date 01/10/2008 and closing date: 30/10/2008 Number of comments received: nil	Y
The project design document is in accordance with the applicable CDM requirements for completing PDDs.	VVM Para. 57 Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The latest version (Version 03) of SSC PDD has been correctly used and the template of the PDD has not been altered.	Y



Requirement	Reference	Comments	Conclusion/CARs/CLs
The project participants shall submit a letter on the modalities of communication (MoC) before submitting a request for registration	EB-09 F_CDM_REG form	MoC needs to be submitted.	CAR #2. MOC has been provided with new PP name and it will be closed once the revised HCA is received. CAR #2 is open. CAR #2 is closed as revised HCA is submitted.

Table 2PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	VVM Para.56 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	The title of the project activity is "Mannapitlu Small Hydel Project". The title is able to identify the unique CDM activity.	Y
A.1.2. Is there an indication of a revision number and the date of the revision?	VVM Para.56 PDD section A.1	DR	PDD version 01 dated 10/08/2008	Y
A.2. Description of the Project Activity				
A.2.1. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately?	VVM Para.59 PDD section A.2 see also A.4, A.4.3 and B.3	DR	This project activity is generating electricity from hydel energy. Three numbers of 5 MW generators have been installed. S type horizontal full Kaplan turbines are used. The total installed capacity is 15 MW. The power produced will be evacuated via 110 kV double circuit line to southern grid Mangalore Electricity Supply company Limited (MESCOM) which will displace an equivalent amount of electricity that would have been generated by the grid which uses predominantly fossil fuels for its generation thereby reducing GHG emissions.	Y
A.2.2. Does the information provide the reader with a clear understanding of the proposed CDM activity?	VVM Para.60 PDD section A.2 see also A.4, A.4.3 and B.3	DR	Yes the PDD describes the project activity clearly	Y
A.2.3. Is all information provided consistent and in compliance with the actual situation or	VVM Para.64 PDD section A.2 see also A.4,	DR	It will be checked during the site visit	Pending At the time of site visit

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
planning?	A.4.2 and B.3			the project activity was under construction. Y
A.2.4. Is all information provided consistent with details provided in further chapters of the PDD?	VVM Para.64 PDD section A.2	DR	Yes the information provided is consistent with the further chapters of PDD.	Y
A.3. Project Participants				
A.3.1. Is the table required for the indication of project participants correctly applied?	VVM Para. 51 PDD section A.3	DR	The table indicating the project participants is correctly applied.	Pending CAR #1 CAR#1 is closed
A.3.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	VVM Para. 51 PDD section A.3	DR	The information is consistent with the details provided in Annex-1.	Pending CAR #1 CAR#1 is closed
A.4. Technical Description of the Project Activity				
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the	VVM Para.64 PDD section A.4	DR	Yes, the information provided in section A.4.1 of PDD is sufficient for the location of the project activity at the site. The information in PDD has been cross checked at the time of site visit and the location matches as per PDD. The coordinates of the project has been confirmed from the KREDL technical clearance for the project.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
site(s)? Are the latitude and longitude of the site indicated (decimal points)				
A.4.2. Does the proposed CDM project activity involve the alteration of existing installations or process?	VVM Para.64 PDD section A.4	DR	The project activity is a new installation and does not involve any alterations to the existing system.	Y
A.4.3. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	VVM Para.64 PDD section A.4	DR, SV	It will be checked during site visit	LAC Y
A.4.4. Is the category(ies) of the project activity correctly identified?	VVM Para.64 PDD section A.4	DR	The project activity belongs to Type-I (Renewable Energy Projects) as it is generating electricity from hydro energy and comes under category D (Grid connected renewable electricity generation) as it supplies electricity to the grid	Y
A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?	VVM Para.64 PDD section A.4	DR, SV	It will be checked during site visit	Y
A.4.6. Is the table required for the indication of projected emission reductions correctly applied?	VVM Para.64 PDD section A.4	DR, SV	Yes the table indicating the projected emission reductions is correctly applied.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A.5. Debundling				
A.5.1. Is the small-scale project activity a debundled component of a large scale project activity	VVM Para. 134c	DR	The project activity is not a debundled component of large scale project activity as the project activity does not fulfill the conditions to be considered for debundling.	Y
A.5.2. If the project is a debundled component of a larger project, does the larger project fall within the limits for small-scale CDM project activities	VVM Para. 134c	DR	N/A	Y
A.6. Public Funding				
A.6.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?	PDD section A.4.4	DR	As per the PDD, there is no public funding involved in this project activity. Documentary evidence needs to be provided.	LAC Y
A.6.2. Is all information provided consistent with details provided by further chapters of the PDD (in particular annex 2)?	PDD section A.4.4	DR	Yes the information is consistent in Annex 2 of PDD	Y
A.6.3. In case of public funding from Annex I Parties is it confirmed that such funding does	PDD section A.4.4	DR	N/A	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
not result in a diversion of official development assistance				
B. Baseline and Monitoring Methodology				
B.1. Choice and Applicability				
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	VVM Para.68 PDD section B.1	DR	Yes the project uses approved methodology AMS 1D version 13.	Y
B.1.2. Has the methodology (incl. the tools) been altered from the original version as referenced in the PDD?	VVM Para.69 PDD section B (B.1-B.2)	DR	The approved methodology AMS 1D version 13 has been used without any alteration.	Y
B.1.3. Does the project activity qualify as small scale project?	VVM Para. 134a	DR	The project activity qualifies as small scale project as the total installed capacity is 15 MW which is not more than 15 MW applicable for these projects.	Y
B.1.4. Is the category(ies) of the project activity correctly identified in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities?		DR	The project activity belongs to Type-I (Renewable Energy Projects) as it is generating electricity from hydro energy and comes under category D (Grid connected renewable electricity generation) as it supplies electricity to the grid.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.5. Is the selected simplified methodology applicable to the project activity in the PDD?	VVM Para.75/66a/68/73 PDD section B (B.1-B.2)	DR	As per the methodology AMS ID "This category comprises renewable energy generation units, such as photovoltaics, 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." Since the project generates renewable electricity using hydro power that will supply the electricity to the Grid. Also the total installed capacity is only 15 MW. Hence the selected methodology AMS ID is applicable for the project.	Y
B.1.6. Does the project activity conform to one of the approved small-scale categories?	VVM Para. 134b	DR	Yes the project activity confirms to Type-I, Category-D(Grid connected renewable electricity generation) as the project supplies the generated electricity to Grid.	Y
B.1.7. Is the project activity a bundle of several small scale activities and if so does it contain any sub-bundles?		DR	The project activity is not a bundled project.	Y
B.1.8. If the project activity is a bundle of several small scale activities, does the sum of the total bundle (including any subbundles) fall within the limits for small scale projects		DR	N/A	N/A

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.9. If the project activity is a bundle of several small scale activities, has the form with information related to the bundle been submitted and is it correctly used		DR	N/A	N/A
B.1.10. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVM Para.75/66b/68 PDD section B (B.1-B.2)	DR	Yes the PDD has discussed the applicability criterion of the approved methodology and it confirms to it	Y
B.2. Project Boundary				
B.2.1. Are all emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified and described in a complete and transparent manner? Is there information on GHG emissions in proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to	VVM Para.79/76 /67a PDD section B.3	DR	The project boundary has been correctly applied as per the methodology AMS ID. For the baseline emission calculation the southern grid has been included in the project boundary as the project activity exports power to the Karnataka grid through Mangalore Electricity Supply Company Limited (MESCOM) which comes under the southern grid of India.	Y

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

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.3. Identification of the Baseline Scenario				
B.3.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	VVM Para.67b.80/82/86 PDD Section B.4/B.5	DR	According to the approved methodology the baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO ₂ e/kWh) and it has been correctly identified.	Y
B.3.2. Are all tools/procedures in the methodology correctly applied to identify the most reasonable baseline scenario? This includes all potential realistic and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	VVM Para.81/82/86a- d/83/84 PDD Section B.4/B.5	DR	The most likely baseline scenario will be continuation of current scenario .i.e. the additional power is supplied by current generating stations and/ or new stations coming up in the grid.	Y
B.3.3. Is the choice of the baseline compatible	VVM Para.86b-	DR	Combined margin(CM) has been considered for the baseline emission factor and it has been calculated as 0.855 tCO ₂ /MWh. All the values has been taken from CEA Version	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
with the available data?	c/95 PDD Section B.4/B.5		03, which is authentic.	
B.3.4. Is conservativeness addressed in the way of identifying the baseline?	VVM Para.90 PDD Section B.4/B.5	DR	The baseline emission factor has been taken from CEA data, which is authentic and conservative.	Y
B.3.5. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	VVM Para.90/91 PDD Section B.4/B.5	DR	Yes the selected baseline represent the most likely baseline scenario	Y
B.3.6. Is there a verifiable description of the baseline scenario? Does this include a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM Para.86e/85 PDD Section B.4/B.5	DR	The baseline grid emission factor has been calculated using Central Electricity Authority (CEA) of India data. The data used is authentic and verifiable.	Y
B.4. Additionality				
B.4.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and	VVM Para.67d/95 PDD Section B.1/B.4/B.5	DR	It is a SSC project and additionality has been demonstrated as per Attachment A to Appendix B of simplified modalities and procedures for SSC projects	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
by following all the required steps?				
B.4.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD? Are all steps followed in a transparent manner?	PDD Section B.1/B.4/B.5	DR	It is a SSC project and additionality has been demonstrated as per Attachment A to Appendix B of simplified modalities and procedures for SSC projects	Y
B.4.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency to all available data and documentation?	VVM Para.93/91 PDD Section B	DR	The supporting documents for investment barrier, technological barrier and other barriers have been provided	Y
B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project? If the project activity start date is prior to the validation is it discussed how the CDM was	VVM Para.102b PDD Section B.5	DR	As per section C.1.1 of PDD the project start date is 28/2/2008. As the project has started before validation provide proof of serious CDM consideration for the project activity.	CAR #3 CAR #3 is closed out.

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
taken into account in the decision to go ahead with the project activity				
B.4.5. If an investment analysis has been used, has it been shown that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?	VVM Para. 106, 107, 109 112a-c PDD Section B.5	DR	The project IRR has been used. The project IRR is less than the benchmark return	Y
B.4.6. If a benchmark is used, is it ensured that it is selected in accordance with the requirements of the tool /methodology and it represents standard returns in the market (not linked to the subjective profitability expectation or risk profile of a particular project developer).	VVM Para. 110 PDD Section B.5	DR	<p>The project has demonstrated barrier using investment barrier. PP has to produce the spread sheet for investment analysis and also sensitivity analysis. Also justify using documentary evidence the correct usage of input values used for the investment analysis.</p> <ol style="list-style-type: none"> Justify using documentary evidence the correct usage of input values used for the investment analysis. Traceability of data is not possible from the IRR sheet submitted. Please provide the revised consolidated IRR sheet with original cost, escalated cost and total cost. The project has been financed by banks other than Axis bank also. Justify, how the Axis bank BPLR has been taken as benchmark for this project. Cost per MW mentioned in the PDD is not matching with the IRR sheet Please provide the pending documents for chronology given in section B.5 of PDD <p>Basis for BPLR needs to be provided</p>	<p>CAR #4 Andhra bank PLR has been taken as a benchmark for this project activity.</p> <p>CAR #4 was closed.</p>

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.4.7. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?	VVM Para. 114 115a-b/116 PDD Section B.5	DR	The project has demonstrated barrier using investment barrier. PP has to produce the spread sheet for investment analysis and also sensitivity analysis. Also justify using documentary evidence the correct usage of input values used for the investment analysis.	Pending CAR #4. CAR #4 was closed.
B.4.8. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVM Para. 105 PDD Section B.5	DR	Yes the discussion on additionality is consistent with all plausible and credible baseline scenarios	Y
B.4.9. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity. Do they also abide by the same applicable laws and legislations?	VVM Para. 105 PDD Section A.4.2/B.5	DR	Yes in the absence of the project activity the equivalent amount of electricity would have been generated by the grid connected power plants and they comply with same laws and regulations applicable to the project activity	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.4.10. Has it been shown that the project is not common practice?	VVM Para. 119a/b PDD Section B.5	DR	Common practice analysis is not required as per guidelines since it is a SSC project	Y
B.4.11. What are the key distinctions between the project activity and any similar projects that are widely used as common practice?	VVM Para. 118, 119c/d PDD Section B.5	DR	Common practice analysis is not required as per guidelines since it is a SSC project	Y
B.5. Application of the Simplified Methodology				
B.5.1. Has the simplified methodology been applied correctly for determining baseline emissions ?	VVM Para. 91d PDD Section B (B.6.1 -B.71)	DR	As per the approved methodology AMS ID, version 13 the baseline emission has been correctly applied by multiplying the kWh produced by the renewable generating unit and the emission coefficient of the grid calculated as combined margin consisting of build margin and operating margin.	Y
B.5.2. Has the simplified methodology been applied correctly for determining project emissions ?	VVM Para. 90/91d PDD Section B (B.6.2-B.71)	DR	There is a 100 kVA DG set available for back up, in case of power failure. Emission due to DG set will be included in the ER calculation	Y
B.5.3. Has the simplified methodology been applied correctly for determining leakage ?	VVM Para. 91d PDD Section B (B.6.2 -B.71)	DR	There will be no leakage associated with the project activity as the energy generating equipment has not been transferred from another activity.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.5.4. Where applicable, has the simplified methodology been applied correctly for the direct calculation of emission reductions ?	VVM Para 88/91d PDD Section B (B.6.2 -B.71)	DR	Emission reduction will be the difference between baseline emissions and project emissions.	Y
B.5.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they been properly justified and are they correct?	VVM Para.89/90/91 PDD Section B (B.6.2 -B.71)	DR	Combined margin approach has been used for the calculation of grid emission factor	Y
B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5-C	DR	Uncertainties in the GHG emission estimate has been explained in the PDD	Y
B.6. Ex-ante Data and Parameters Used				
B.6.1. Are the data provided in compliance with the methodology?	VVM Para. 91/67c PDD Section B.6.3B.6.4	DR	The ex-ante data provided is in compliance with the methodology. The grid emission factor for the southern grid of India from CEA data and CO ₂ emission factor for diesel taken from IPCC 2006 has been used.	Y
B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVM Para. 91a/b PDD Section B.6.3/B.6.4	DR	The data has been taken from Central Electricity Authority (CEA) which is authentic, reliable and publicly available.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.6.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	The most recent data available as on date has been used.	Y
B.6.4. Is all the data appropriate and correctly applied to the CDM project activity?	VVM Para. 91c PDD Section B.6.3/B.6.4	DR	Yes the data are appropriate and correctly applied	Y
B.6.5. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed, correct, and will they result in conservative estimates?	VVM Para. 90 PDD Section B.6.3/B.6.4	DR	The grid emission factor calculated ex-ante will be fixed through out the crediting period and the same has been calculated from CEA data which is authentic and publicly available	Y
B.7. Calculation of Emissions Reductions				
B.7.1. Has the simplified methodology been applied correctly for determining emission reductions ?	VVM Para. 91d PDD Section A.4.3/B.6	DR	Emission reduction calculation formula and project emission due to diesel consumption mentioned in Page 20 of PDD is not as per the EB-41 annex 11 guidelines.	CAR #5 PE by DG set has been correctly used. CAR #5 was closed.
B.7.2. Are the emission reduction calculations documented in a	VVM Para. 91e PDD Section B.6	DR	emission reduction calculations documented in complete and transparent manner	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
complete and transparent manner?				
B.7.3. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	PDD Section B.6	DR	For projection the potential electricity that can be generated in the project has been estimated whereas in verification stage actual electricity generated will be measured and used for emission reduction calculation.	Y
B.7.4. Is the calculation of the emission reduction correct?	VVM Para. 91e PDD Section B.6	DR	Emission reduction calculation are correctly applied in the spread sheet	Y
B.8. Emission Reductions				
B.8.1. Is the form/table required for the indication of projected emission reductions correctly applied?	PDD Section A.4.3/ Section B.6	DR	Yes the table indicating the projected emission reduction is correctly applied.	Y
B.8.2. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	PDD Section A.4.3/ Section B.6	DR	The schedule of implementation is not available in PDD. Need to check during site visit.	pending Y
B.9. Monitoring Methodology				
B.9.1. Does the monitoring methodology provide a consistent approach in the context of all	VVM Para. 67e PDD Section B.7-	DR	All the required parameters for emission reduction calculation are monitored.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
<p>parameters to be monitored and further information provided by the PDD?</p> <p>Are all parameters and data that are available at validation consistent with the simplified methodology. Has this data been interpreted and applied correctly?</p>	B.8 see also Annex 4			
B.9.2. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?	PDD Sections B and C	DR	Yes the monitoring methodology is consistent with the choice of option for monitoring both baseline and project emissions. Combined margin approach has been used for the calculation of grid emission factor.	Y
B.10. Data and Parameters Monitored				
B.10.1. Does the monitoring plan in the PDD comply with the simplified methodology? Provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project	VVM Para. 91a/91d/121/79 PDD Section B.7-B.7.2	DR	For FHSD and EG _{DG,y} description of measurement methods and procedures, QA/QC procedure is not clear. Please clarify Significance of the parameter EG _{DG,y} is required	CL #6 QA/QC procedure has been corrected and project emission were calculated as per

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
boundary during the crediting period?				IPCC guidelines CL#6 was closed.
B.10.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the simplified methodology applied?	PDD Section B.7-B.7.2/B.6.2	DR	The project GHG indicators are reasonable and are in conformance to the approved methodology.	Y
B.10.3. Will it be possible to determine the specified project GHG indicators?	PDD Section B.6.2-B.8	DR	All the parameters of GHG indicators are measurable and can be verified.	Y
B.10.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	PDD Section B.6.2-B.7.1	DR	Pending CL # 6	Pending CL # 6 was closed
B.10.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	PDD Section B.6.2-B.7.1	DR	Since all the parameters are directly measured using standard calibrated meters the data will be of high quality with less chance for errors.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.10.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	PDD Section B.5-B.7.2	DR	Yes the monitoring approach is in line with current good practices.	Y
B.10.7. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	PDD Section B.6.2-B.7.1	DR	As per methodology there are no project emissions associated with the project activity. But a DG set is being used for emergency purposes. The fuel consumption by the DG set is being monitored and is included in the monitoring plan. If it is used in later stages the same will be included as project emissions. The formula is correctly applied to calculate the project emissions.	Y
B.11. Quality Control (QC) and Quality Assurance (QA) Procedures				
B.11.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	VVM Para. 121 Refer to all data within the PDD Inc. B.6.2-B.7.1	DR	Yes all the data being monitored under goes QA/QC procedure. A CDM team has been formed for monitoring and review of all the parameters that are being monitored.	Y
B.11.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	Refer to all data within the PDD Inc. B.4/B.7.2/Annex 4	DR	Since joint meter reading will be taken for calculation, and all the meters will be periodically calibrated. So, there is no uncertainty in the GHG emission estimates	Y
B.11.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of	VVM Para 121	DR	Pending CL# 6	Pending CL #6 was closed.

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
high quality data?				
B.11.4. Is it ensured that data will be bound to national or internal reference standards?	VVM Para. 86d	DR	Yes the data will be bound to national standards as it is monitored using standard calibrated meters	Y
B.11.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions?	VVM Para. 19	DR	Since, the net energy export by the project activity is verified and readings will be taken jointly with the PP, there is very less chance of over estimation of net electricity exported. Similarly the baseline emission factor data is taken from CEA which is again a statutory body under Government of India. Hence there will be less chance for over estimation of emission reduction.	Y
B.12. Operational and Management Structure				
B.12.1. Is the authority and responsibility of project management clearly described?	PDD Section B.8/Annex 1	DR	Yes the authority and responsibility of project management is clearly defined. The daily generation report will be sent to General Manager, Partner through Manager.	Y
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.8/Annex 1	DR	The responsibility of monitoring, measurement of all the data has been defined and is available in Annex 4 of PDD.	Y
B.12.3. Are procedures identified for training of monitoring personnel?	PDD Section B.8/Annex 1	DR	Needs to be checked during the site visit	CL # 7 Details of the training procedure were given. CL #7 was closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.13. Monitoring Plan (Annex 4)				
B.13.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	VVM Para. 122a	DR	The monitoring plan has been developed specifically for this project activity and is reflecting in Annex-4.	Y
B.13.2. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?	VVM Para. 122b	DR	Yes, the monitoring plan describes all the measures to be implemented for monitoring all the parameters.	Y
B.13.3. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	VVM Para. 122b	DR	Yes the monitoring plan provide information about the monitoring equipment to be used for data monitoring	Y
B.13.4. Are procedures identified for calibration of monitoring equipment?	VVM Para. 122a-c	DR	Yes, Mechanical department team will be in charge for calibration of meters as per the standard procedure	Y
B.13.5. Are procedures identified for maintenance of monitoring equipment	VVM Para. 122a-c	DR	Yes, Mechanical department team will be in charge for maintenance of monitoring equipments and installations	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
and installations?				
B.13.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	VVM Para. 122a-c	DR	Yes procedure has been identified for day to day records handling.	Y
B.13.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems?	VVM Para. 122a-c	DR	Yes procedures have been identified. Export and import can be cross checked with invoice submitted to State Electricity Board. Procedure for monitoring data adjustment is available in annex 4 of PDD	Y
B.13.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	VVM Para.122a-c	DR	Yes internal audit is done for the data monitored for this project activity.	Y
B.13.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	VVM Para. 122a-c	DR	Review meeting will be scheduled once in a month for first year and once in three month thereafter.	Y
B.13.10. Describe the ability of	VVM Para.	DR	As the project is the supply of electricity to the grid, the most important parameter for	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
the project participants to implement the monitoring plan.	122c		the calculation of emission reduction is the net electricity supplied to grid. As per regulatory requirement this is mandatory to monitor this parameter.	
B.14. Baseline Details				
B.14.1. Is there any indication of a date when determining the baseline?	PDD Section B.8/Annex 3	DR	The date of completing the baseline is 10/08/2008.	Y
B.14.2. Is this consistent with the time line of the PDD history?	Also see revision history of the PDD	DR	Yes it is consistent with the timeline of PDD history.	Y
B.14.3. Is all data required provided in a complete manner by annex 3 of the PDD?	PDD Annex 3	DR	Yes all the data has been completely provided in Annex-3 of PDD.	Y
C. Duration of the Project / Crediting Period				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	VVM Para. 102a-c PDD Section C.1.1/C.1.2	DR	As per PDD the start date of the project activity is 28/02/2008 and the operational lifetime is 30 years.	Y
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	VVM Para. 102a PDD Section C.2/C.2.1/C.2.2	DR	Fixed crediting period of 10 years has been chosen for the project activity. It is also mentioned that the start date for crediting is 01/11/2010 or registration date with UNFCCC.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
C.1.3. Does the project's operational lifetime exceed the crediting period	VVM Para. 102a PDD Section C.1.2/C.2.1.1/C.2.1.2	DR	Yes the project's lifetime is greater than the crediting period.	Y
C.1.4. Does the start date indicate whether this is a new project activity or a pre-existing project activity?	VVM Para. 102a/ 98 PDD Section C.1.1/C.2.1.1	DR	It is a pre-existing project activity as the start date is before 2nd August 2008	Y
D. Environmental Impacts				
D.1.1. Does the project comply with environmental legislation in the host country?	VVM Para. 131/134d PDD section D	DR	As per PDD, the project complies with the environmental legislation in the host country.	Y
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVM Para. 131 PDD section D	DR	There are no major environmental impacts because of the project activity and all necessary approvals have been obtained from statutory authorities for the project.	Y
D.1.3. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	VVM Para. 131 PDD section D	DR	PDD states that as per MOEF requirements, EIA study need not be carried out for mini hydel projects less than 100 Crores do not require environmental clearance under EIA.	Y
D.1.4. Will the project create any adverse environmental effects?	VVM Para. 131	DR	The project will not create adverse environmental impacts as it is a small scale hydro project.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
	PDD section D			
D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVM Para. 131 PDD section D	DR	The project does not lead to any transboundary environmental impacts	Y
D.1.6. Have identified environmental impacts been addressed in the project design?	VVM Para. 131 PDD section D	DR	As there is no major environmental impacts associated with the project, the same is not assessed in PDD	Y
E. Stakeholder Comments				
E.1.1. Have relevant stakeholders been consulted?	VVM Para. 128a PDD Section E.1	DR	Yes the relevant stakeholders were consulted and is available in E.1 of PDD	Y
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVM Para. 128a PDD Section E.1	DR	Invitations were sent to the for the representatives in the local region	Y
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVM Para. 128b PDD Section E.1	DR	Yes stakeholder consultation is described transparently in PDD	Y
E.1.4. Is a summary of the stakeholder comments received provided?	VVM Para. 128b PDD Section E.2	DR	As per PDD there were no negative comments from the stake holders and all are positive.	Pending Y
E.1.5. Has due account been taken of any	VVM Para.	DR	There were no negative comments from the stake holders and all are positive.	Y



Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
stakeholder comments received?	128b PDD Section E.3			

References

Reference ID	Title / Description	Comments
1.	PDD version 01 dated 10/08/2008	Web hosted PDD
2.	Approved methodology AMS 1D	Methodology AMS I D Version 13 dated 14/12/2007
3.	CEA database User guide Version 03	Used for calculating the ex-ante grid emission factor
4.	PDD version 1.1 dated 10/08/2008	Intermediate version
5.	PDD version 1.2 dated 24/02/2009	Intermediate version
6.	PDD version 1.3 dated 05/05/2009	Submitted for RFR
7.	HCA letter	HCA dated 12/01/2009 with ref.no:4/25/2008-CCC given by Ministry of Environment & Forests the Indian DNA
8.	Modalities of Communication	MOC as per the EB 45 guidance
9.	Emission Reduction Calculation Sheet	Emission reduction formula and values were cross checked
10.	Site Visit	Site visit conducted on 25/11/2008
11.	Audited Balance Sheet	For cost break up
12.	Share Purchase Agreement dated 28/02/2008	Considered for Start date of the project
13.	Board Note minutes for Soham Renewable Energy India Private Limited, dated 26 th April 2008	CDM consideration
14.	Letter to Syndicate bank for additional fund 26/05/2008	CDM consideration
15.	Engagement of Consultant dated 02/06/2008	CDM consideration

Reference ID	Title / Description	Comments
16.	PLR of Andhra bank and Axis bank	Used for investment analysis benchmark
17.	KERC guidelines	for O & M charges, Auxiliary Consumption
18.	DPR	PLF has been referred for investment analysis
19.	MNRE Subsidy	Subsidy received from MNES for investment analysis

A.3 Annex 3: Overview of Findings

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	5	2	0

Date:	25/11/2008			Raised by:	Sathis Kumar/ Senthil Kumar	
Type:	CAR	Number:	# 1	Reference:	Table 1	
Lead Assessor Comment:						
Provide Letter of Approval from the DNA of Host Country (India)						
Project Participant Response:				Date: 23/02/2009		
The Host Country Approval meeting was conducted on the 16th of October, 2008, and HCA obtained in January 2008. Please refer attachment 1.						
Documentation Provided by Project Participant:						
Host country approval						
Information Verified by Lead Assessor:						
Project proponent name and title of the project activity						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 14/03/2009		
CAR #1 is closed.						
Acceptance and Close out by Lead Assessor:				Date: 14/03/2009		
Lead Assessor Comment:						
CAR #1 is re opened. (22/04/2009)						
PP name mentioned in Version 1.2 of PDD dated 27/03/09 is not consistent with the HCA.						
Project Participant Response:				Date: 5/06/2009		
The project activity was initially under the ownership of Bobba Aviation Services Private Limited. Due to several reasons (as indicated in the PDD), Soham Renewable Energy India Private Limited, took over the project from Bobba. The project is now under the ownership of Soham Mannapitlu Power Pvt Ltd (which is a wholly owned subsidiary of Soham group). The proponent has now applied for a "change of ownership" in the awarded HCA. The revised HCA will be submitted to the DOE as soon as the proponent receives it from the MoEF.						
Documentation Provided by Project Participant:						
No documents provided						
Information Verified by Lead Assessor:						
-						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/06/2009		
CAR #1 will be closed once we receive the revised HCA						
Project Participant Response:				Date: 21/07/2009		
Revised HCA						
Documentation Provided by Project Participant:						
Revised HCA dated 29 June 2009						
Information Verified by Lead Assessor:						
The revised HCA was checked and it conforms with all the requirement of CDM						
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 01/08/2009		
CAR is closed as the revised HCA is found ok as per CDM guidelines.						

Date:	25/11/2008	Raised by:	Sathis Kumar/ Senthil Kumar
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Type:	CAR	Number:	# 2	Reference:	Table 1
Lead Assessor Comment:					
Provide the letter for Modalities of communication					
Project Participant Response:				Date: 23/02/2009	
The Modalities of Communication has been submitted to the DOE. Please refer attachment 2.					
Documentation Provided by Project Participant:					
Modalities of communication and the revised PDD version 1.1 dated 24/02/2009					
Information Verified by Lead Assessor:					
Modalities of communication format					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 13/03/2009	
CAR #2 is open. Modalities of communication format are not consistent as per EB 45 annex 60.					
Project Participant Response:				Date: 27/03/2009	
The Modalities of Communication has been submitted as per EB 45 annex 60. Please refer attachment no 14.					
Documentation Provided by Project Participant:					
Modalities of Communication – dated 23 March 2009					
Information Verified by Lead Assessor:					
MoC					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 22/04/2009	
CAR #2 is open. Name of the entity mentioned in the MoC is not consistent with HCA					
Project Participant Response:				Date: 05/06/2009	
The MOC contains the present name of the proponent – Soham Mannapitlu Power Pvt Ltd.					
Documentation Provided by Project Participant:					
MoC					
Information Verified by Lead Assessor:					
PP name in MOC					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 06/06/2009	
MOC is as per latest format as per CDM EB guidance. CAR 02 is closed.					
Acceptance and Close out by Lead Assessor:				Date: 06/06/2009	

Date:	25/11/2008		Raised by:	Sathis Kumar/ Senthil Kumar	
Type:	CAR	Number:	# 3	Reference:	B 4.1
Lead Assessor Comment:					
<p>a. As per section C.1.1 of PDD the project start date is 28/2/2008. But, in page 15 of PDD, it is mentioned that the project started during 2003 and the project activities completely stopped due to non release of funds, after considering the CDM benefits the project is restarted. Since the project activities is restarted due to consideration of the benefits of the CDM the cessation of project implementation must be demonstrated by means of credible evidence such as cancellation of contracts or revocation of government permits. Also, justify with documentary evidence that CDM was critical in reviving the project.</p> <p>b. The project participant must indicate awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project.</p> <p>c. The project participant must indicate, by means of reliable evidence, that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation</p>					
Project Participant Response:				Date: 23/02/2009	
<p>a. As mentioned in the PDD, the project was earlier owned by another management (Bobba Aviation Services Private Limited). The construction of the project was started in the year 2004. However, due to project cost escalation during construction, the project financials were affected. The lending banks refused to further fund the project due to the cost escalation and non payment of loan instalments. As</p>					

a result, the project implementation was halted. Please refer Attachment 3

At this juncture, Soham proposed to take over the project activity from Bobba and recommence its implementation. Since Soham had already implemented a hydro project under the CDM; they assessed the viability of the project activity considering CDM benefits, which made it a viable proposition. A feasibility report was prepared and presented to the Board of Directors, who approved the takeover considering CDM benefits. Please refer attachment 4. Due to the increased costs, CDM benefits are crucial for the sustenance and re-construction of the project. Soham already has a registered CDM hydro project and with this prior experience were confident that with CDM revenue it would be possible to revive this project.

Subsequently, transfer of shares from Bobba took place – Please refer Attachment 5 for details. Then, Soham Renewable Energy India Pvt Limited took over Bobba Aviation Services Pvt Limited.

- b. Awareness of CDM: Soham has a registered CDM hydro project (Ref no. 0516, registered on 30, September 2006 - <http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1152709432.89/view>)

While mobilising funds for the project, Soham had to mention to the banks that the project activity will be taken through the CDM route. This provided an assurance to the banks and they were confident and were willing to fund the project activity.

Soham took over Bobba Aviation on 28, February 2008 (Attachment 6). While the project implementation and transfer of shares was taking place, negotiations and correspondences with CDM consultants were being carried out simultaneously. Further, Soham could officially initiate the CDM process only after the share transfer from Bobba was completed. A chronology of events has been provided for better understanding. Please refer attachment 7.

28, February 2008	Share Purchase Agreement (Between Bobba and Soham)
26, April 2008	Soham - Bobba Board officially came into force and Soham completely took over Bobba (complete transfer of shares)
2, June 2008	CDM Consultant appointed

Documentation Provided by Project Participant:

- Minutes of Bank Consortium Meeting
- Feasibility study report by Hydro Tech Consultants, Bangalore
- Board note for CDM consideration
- Share purchase agreement

Information Verified by Lead Assessor:

Serious CDM consideration and applicability of start date.

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 14/03/2009

CAR #3 is open.

- Please provide documentary evidence for halting of project implementation and duration of the halting period.
- Documentary evidence for decision made by Bobba aviation services for selling the project and decision made by Soham to take over the project.
- Feasibility study report doesn't mention about CDM consideration, provide any third party document for CDM consideration
- Provide documentary evidence other than board note for serious CDM consideration as per EB 41 annex 46
- Provide any documentary proof for cancellation of contracts or revocation of government permits (refer glossary_CDM_v04)
- Documentary evidence for Soham's consideration of CDM revenue for mobilisation of funds and bank's CDM consideration while sanctioning the loan.
- Documentary evidence to show Soham's negotiation with consultant

8. Documentary evidence for complete take over by Soham.

Project Participant Response:	Date: 27/03/2008
<ol style="list-style-type: none"> Please refer to the summary of the construction delays in the PDD version 1.1 (Section B.5). The sequence of events has been clearly demonstrated. Further, the reasons for halting construction work (Banks refusing to fund the project) has been submitted to the DOE. Please refer the minutes of the Bank Consortium (Attachment No. 3). The minutes of meeting at Bobba group for selling Bobba Power Projects to Soham has been submitted to the DOE. (Please refer attachment No. 15) Since, Soham has a prior experience in CDM, they were aware of the modalities of the CDM process. Once they started communications with Bobba group, they started corresponding with CDM consultants for the same. Please refer attachment No. 16 (a – e). For Soham to acquire Bobba, they had to not only buy the assets but also had to take into account the loans taken by Bobba group for this project activity. Therefore, Soham had to apply for an additional loan for the extra costs towards completion of the construction of the project activity. The CDM benefits were considered while applying for the loan. Therefore, this makes it very clear that CDM was seriously considered for reviving the project activity. Please refer attachment 17. When the Bobba Group was handling the construction of the project activity, there was an issue with the Forest Clearance that led to disruption in the construction (please refer Section B.5 of the PDD). Once, another forest clearance was obtained construction was resumed. (Please refer attachment 11 a, and the Forest Clearances submitted to the DOE during validation site visit). Due to issues with the civil contractors, their contracts were cancelled and new contractors were hired during the Bobba phase of construction (please refer 11 b) There has been no instance of any revocation of Government Permits for this project activity. The loan applied for the incremental cost has not yet been sanctioned. However, please refer to the letter from the lending bank (Syndicate Bank) which states that CDM revenue was considered for mobilization of funds and the Bank's CDM consideration. Please refer attachment 17. Please refer the e-mail correspondences with the CDM consultant during acquisition of the Bobba project by Soham. Please refer attachment 16. The Share Purchase Agreement between Bobba and Soham was signed on 28 February 2008. However, the complete transfer of shares took place on 25 April 2008 (Deed of confirmation). Please refer to the attachment 18. 	
Documentation Provided by Project Participant:	
<ol style="list-style-type: none"> Attachment No 3 – Minutes of Bank Consortium dated 28.07.2007 Attachment No 4 - Technical Assessment Report dated 31.10.2007 Attachment No. 5 – NOC from Banks dated 17.03.2008 Attachment No. 6 – Share Purchase Agreement dated 28, February 2008 Attachment No. 7 – Contract with CDM Consultant dated 2, June 2008 Attachment No. 15 – Minutes of Meeting (Bobba Group) dated 25 April 2008 Attachment No. 16 (a – e) – E-mail correspondence with CDM consultants Attachment No. 17 – Letter from lending bank 23 March 2009 Attachment No. 11 (a – b) – Construction work halted (forest clearance 3 May 2005), new contractors hired (16 January 2006) Attachment No. 18 – Complete Share Transfer (Bobba to Soham) dated 25 April 2008 	
Information Verified by Lead Assessor:	
Serious CDM consideration	

Reasoning for not Acceptance or Acceptance and Close Out:		Date: 22/04/2009	
<p>CAR #3 is open.</p> <p>As per the definition of start date (refer glossary_CDM_v04), projects in which an investment decision is taken and the project activity implementation is subsequently ceased. If such project activities are restarted due to consideration of the benefits of the CDM the cessation of project implementation must be demonstrated by means of credible evidence such as cancellation of contracts or evocation of government permits.</p> <p>CDM consideration for this project activity is after the start date of the project activity. (Board note dated 26th April 2008). Provide the documentary evidence for serious CDM consideration before the start date.</p> <p>Letter from bank is dated on 28/03/2009. Please provide the proof for approaching the bank for loans by considering the CDM benefit.</p>			
Project Participant Response:		Date: 05/06/2009	
<p>As mentioned in the PDD, the start date for this project activity is the date of signing of the Share Purchase Agreement between Soham Group and Bobba Aviation Services Pvt Ltd. Further, the complete transfer of shares only took place in April 2008, following which the project became a fully owned subsidiary of Soham Group. The extracts of the minutes of meeting of the Board meeting of Soham has been submitted to the DOE. Please refer attachment No. 27</p> <p>The loan application for the completion of the project activity indicates that CDM revenue was seriously considered for financial viability and sustenance of the project activity. Please refer attachment No. 28</p>			
Documentation Provided by Project Participant:			
<p>Minutes of Meeting of Soham Group dated 4 December, 2007.</p> <p>Loan Application dated 26 May 2008.</p>			
Information Verified by Lead Assessor:			
Start Date of the project activity			
Reasoning for not Acceptance or Acceptance and Close Out:		Date: 06/06/2009	
<p>The start date chosen is as per the date on which share purchase agreement was signed. This is date on which Soham has committed to take over the project and start the project again. Hence the start date chosen is found ok. CAR 3 is thus closed.</p>			
Acceptance and Close out by Lead Assessor:		Date: 06/06/2009	

Date:	25/11/2008	Raised by:	Sathis Kumar/ Senthil Kumar		
Type:	CAR	Number:	# 4	Reference:	B.4.6

Lead Assessor Comment:					
<p>f. Justify using documentary evidence the correct usage of input values used for the investment analysis.</p> <p>g. Traceability of data is not possible from the IRR sheet submitted. Please provide the revised consolidated IRR sheet with original cost, escalated cost and total cost.</p> <p>h. The project has been financed by banks other than Axis bank also. Justify, how the Axis bank BPLR has been taken as benchmark for this project.</p> <p>i. Cost per MW mentioned in the PDD is not matching with the IRR sheet</p> <p>j. Please provide the pending documents for chronology given in section B.5 of PDD</p>					
Project Participant Response:			Date: 23/02/2009		
<p>The values have been used as per the Audited Balance Sheet (Attachment 8) and the estimated additional costs (attachment 9). The total project cost for this project activity will be the cost incurred while the share transfer and the estimated cost that is needed to complete the construction of the project activity. The sum of the two has been considered as the total project cost.</p> <p>a. The revised IRR sheet has been submitted to the DOE. The break up of the total cost, along with the traceability has been included in the IRR workings. Please refer attachment 13 (a – f).</p> <p>b. The funds for this project activity has been mobilised from a consortium of banks (Andhra Bank and Axis Bank).</p>					
			BPLR		

Andhra Bank	14%
Axis Bank	14.75%

Therefore, the conservative BPLR has been chosen as an appropriate benchmark. The documents have been submitted to the DOE. Please refer attachment 10.

- c. The cost per MW has been revised in the PDD version 1.1
- d. The pending documents for the chronology has been submitted to the DOE – please refer Attachments 11 (a – d).

Documentation Provided by Project Participant:

1. Revised IRR Sheet
2. Andhra bank & Axis bank letter for PLR
3. Letter from forest department for halting the activities
4. letter from the contractor for starting the construction work
5. letter form the contractor for stopping the construction work

Information Verified by Lead Assessor:

Input values in IRR sheet, Andhra bank PLR

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 14/03/2009

CAR #4 is open.

1. Cost breakup details are not available in Attachment 8 (Audited balance sheet). Provide documentary evidence for the same.
2. Auditors statement for promoters contribution, term loan, projected cost till completion of the project activity
3. Moratorium period of 2 years was not considered in the repayment of term loan
4. In IRR, column C of Project cost brake up sheet links is not traceable.
5. copy of DPR
6. copy of PPA
7. O & M cost is already included. Repairs and maintenance cost needs to be removed
8. O & M charges should be considered after commencing the operations
9. sensitivity analysis is not available in the revised IRR sheet
10. Proof for life time of the project

Project Participant Response:

Date: 27/03/2008

1. The certificate from the Chartered Accountant clearly provides the break up of the project cost. Please refer attachment No 19.
2. The Auditors statement containing the financial details (promoter's contribution, term loan and project cost till completion of the project activity) of the project activity of has been submitted to the DOE. Please refer attachment No 19.
3. The Moratorium period had already elapsed for this project activity. Hence, the repayment period must start from Year 1 itself.
4. The estimated incremental cost towards completion of the project activity has been submitted to the DOE. Please refer attachment No 20 and 9.
5. The requested salient features of the project activity (from DPR) have been submitted to the DOE. Please refer attachment No 21.
6. The PPA has not yet been signed. The off taker is yet to be decided. The tariff of Rs. 3.60 per unit has

been based on quotations from power purchasers. Please refer attachment No 22.

7. The repairs and maintenance cost has been included as per the financial analysis of Soham. It has been a practise at Soham to include Reserve and Refurbishing fund to compute repairs and maintenance. Please refer the financial assessment of their earlier project activity (attachment 23)
8. The values for O&M have been considered from Year 1 to Year 30 (entire lifetime of the project activity from the start of the project) and not Year 0 (which would have been before commencement of the project activity).
9. The sensitivity analysis has been incorporated as part of the main IRR sheet.
10. The proof for lifetime of the project activity has been submitted to the DOE. Please refer attachment No 24.

Documentation Provided by Project Participant:

1. Attachment No. 8 – Audited Balance Sheet dated 31/03/08
2. Attachment No. 9 – Estimated Cost Sheet
3. Attachment No. 13 a - Working capital – CERC (page 44 – 45)
4. 13 b - O&M, Auxiliary Consumption, Escalation in O&M – KERC guidelines
5. 13 c - Depreciation under Companies Act
6. 13 d - Plant Load Factor – DPR
7. 13 e - MNRE Subsidy
8. 13 f - Interest repayment (loan sanction document of Andhra bank and Axis (UTI) Bank)
9. Attachment No. 10 – BPLR of Andhra Bank
10. Attachment No. 11 (a – d) – Pending Documents of Chronology
11. Attachment No. 19 - Chartered accountant certificate – Project Cost details
12. Attachment No. 20 - Incremental project cost details
13. Attachment No. 21 - DPR – salient features of project activity
14. Attachment No. 22 - Quote from Power Purchaser
15. Attachment No. 23 - PPA – terms and conditions
16. Attachment No. 24 - Proof for reserve and refurbishing fund

Information Verified by Lead Assessor:

Cost break up from the audited balance sheet
working capital has been verified from CERC order
O & M , auxiliary consumption has been verified from KERC guidelines
Subsidy by MNRE
PLF from DPR

Reasoning for not Acceptance or Acceptance and Close Out:

Date: 22/04/2009

1. Turbine rated output mentioned in the PDD version 02 is not consistent with the DPR.
2. Please provide the proof for tariff considered. Attachment 22 is Terms and Condition only.
3. As per EB 41 annex 45 (Para 7) the investment analysis should reflect the economic decision making context at point of the decision to recommence the project. Therefore capital costs incurred prior to the revised project activity start date can be reflected as the recoverable value of the assets, which are limited to the potential reuse/resale of tangible assets
4. The tax Rate applicable should be in accordance with the project conceptualization date. (Tax Rates were different during 2007-08 – IT Rate = 33.66% and MAT = 11.22%)

5. Sensitivity analysis for $\pm 10\%$ PLF and -10% O & M is not correct
6. Please justify how the O & M Charges considered for this project activity is reasonable? CERC order value is for new projects only.
7. As per CERC order, O & M charges should be considered from second year onwards. In IRR sheet, O & M charges have been considered from 1st year onwards.
8. Both O & M cost and repairs and maintenance cost has been considered through out the lift time of the project. Please justify

Project Participant Response:
Date: 05/06/2009

1. The turbine output mentioned in the PDD has been referred from the Chartered Engineer's certificate – please refer attachment no 24.
2. The proponent had started negotiations with power purchasers for this project activity. Hence, the initial quote offered by the power purchaser (Tata Power) has been considered for IRR computation. The Draft PPA has been submitted to the DOE, please refer attachment no. 29.
3. As per the guidelines, the project costs prior to the start date (reconstruction) needs to be considered at the market fair value. The financial feasibility conducted prior to the take over has been submitted to the DOE. Please refer attachment No. 30.
4. The Tax rates have been modified accordingly.
5. The sensitivity analysis has been made consistent.
6. The CERC order mentions that a O&M cost is applicable to new projects. This project activity is still under construction and is expected to be commissioned by the end of 2009. Therefore, O&M costs are applicable to this project activity.
7. The IRR does not consider the Year 0, where the project has not yet commissioned. The parameter year 1 indicates the first year of operation of the project activity. Therefore, the O&M costs are applicable from the first year of operation.
8. The project activity has a lifetime of 30 years, and will involve an O&M and R&M. As per the CERC Order, 'Operation and Maintenance Expenses' or 'O&M Expenses' means the expenditure incurred in operation and maintenance of the generating station, including part thereof, including the expenditure on manpower, repairs, spares, consumables, insurance and overheads; Therefore, it is evident that these costs will be applicable as long as the plant is in operation.

Documentation Provided by Project Participant:

1. Draft PPA dated December 2007
2. Financial Feasibility Study dated 4, January 2008.

Information Verified by Lead Assessor:

Turbine output from the chartered Engineers certificate
Tariff from draft PPA
Tax rates in IRR sheet
Sensitivity analysis
O & M expenses in IRR sheet

Reasoning for not Acceptance or Acceptance and Close Out:
Date: 06/06/2009

Rated turbine out put is taken from the Chartered Engineer certificate. Tax rates were corrected in the IRR sheet. O & M charges were taken from the CERC guidelines. Sensitivity analysis has been corrected. CAR # 4 was closed.

Acceptance and Close out by Lead Assessor:
Date: 06/06/2009

Date:	25/11/2008		Raised by:	Sathis Kumar/ Senthil Kumar		
Type:	CAR	Number:	# 5		Reference:	B7.1
Lead Assessor Comment:						

Emission reduction calculation formula and project emission due to diesel consumption mentioned in Page 20 of PDD is not as per the EB-41 annex 11 guidelines.					
Project Participant Response:			Date: 23/02/2009		
The revised emission reduction calculation formula and project emissions due to diesel consumption have been revised as per EB-41 annex 11 guidelines.					
Documentation Provided by Project Participant:					
Revised PDD version 1.1 dated 24/02/2009					
Information Verified by Lead Assessor:					
Project emission calculation					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 14/03/2009		
CAR #5 is open. Please mention the units for all the parameters in project emission calculation.					
Project Participant Response:			Date: 27/03/2009		
The project emissions would be due to the use of diesel oil in the DG set, during emergency situations. The units for the same have been included in the PDD.					
Documentation Provided by Project Participant:					
PDD Version 1.3					
Information Verified by Lead Assessor:					
Project emissions by DG set					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 22/04/2009		
CAR #5 is open. Units are not consistent in the Project emissions formula					
Project Participant Response:			Date: 05/06/2009		
The units for project emissions have been made consistent in the PDD version 1.2.					
Documentation Provided by Project Participant:					
PDD version 1.2					
Information Verified by Lead Assessor:					
Project emissions equations by DG set has been checked in the revised PDD.					
Reasoning for not Acceptance or Acceptance and Close Out:			Date: 06/06/2009		
Units are now consistent with the project emission equations. CAR # 5 was closed.					
Acceptance and Close out by Lead Assessor:			Date: 06/06/2009		

Date:	25/11/2008	Raised by:	Sathis Kumar/ Senthil Kumar		
Type:	CL	Number:	# 6	Reference:	B 10.1

Lead Assessor Comment:					
<p>a. For FHSD and $EG_{DG,y}$ description of measurement methods, QA/QC procedure is not clear. Please clarify</p> <p>b. Please justify the significance of the parameter $EG_{DG,y}$.</p>					
Project Participant Response:			Date: 23/02/2009		
<p>a. The revised monitoring details along with QA/AC procedures have been incorporated in the PDD version 1.1.</p> <p>The clarification is as below - The DG set will serve as a back up and will not be in use regularly. Tube gauge on the diesel tank will be used to measure the amount of diesel consumption. This parameter will be measured in litres from BASPL records whenever in use and the data would be archived and maintained in standard log books for at least 2 years after the end of crediting period. Standard tube gauge calibrated and certified by the manufacturers will be used. Hence, will not require regular calibration. Bi-annual maintenance of the tube gauge will be conducted by BASPL, wherein the accuracy will be ensured.</p> <p>b. The DG set of 100 kVA capacity is for emergency purposes, for instance when the grid fails, as a back</p>					

up. Therefore, when in use the emissions will contribute to project emissions, even though very negligible. Therefore, the emissions will be accounted for as project emissions when in use and will be included in the emission reduction calculations.					
Documentation Provided by Project Participant:					
Revised PDD version 1.1 dated 24/02/2009					
Information Verified by Lead Assessor:					
QA/QC procedure for diesel consumption					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 14/03/2009	
CL #6 is closed. QA/QC procedure is clearly explained in the revised PDD					
Acceptance and Close out by Lead Assessor:				Date: 14/03/2009	

Date:	25/11/2008	Raised by:	Sathis Kumar/ Senthil Kumar		
Type:	CL	Number:	# 7	Reference:	B 12.3

Lead Assessor Comment:					
Training procedures for monitoring personnel are not addressed in the PDD					
Project Participant Response:				Date: 23/02/2009	
Currently, six people have been recruited for the project activity. These employees have been trained in-house by BASPL. To gain experience, the trainees are first posted in the other hydro project plants. After gaining hands on experience on the operation of hydro plants, they will be transferred to the project activity. Another six members are to be recruited once the current batch has completed training. Apart from this training, various member of the CDM team will be trained time to time according to the departmental needs. Please refer attachment 12. The details have been included in the PDD version 1.1					
Documentation Provided by Project Participant:					
Revised PDD version 1.1 dated 24/02/2009 and the attendance sheet for the in-house training programme					
Information Verified by Lead Assessor:					
Training procedures in PDD					
Reasoning for not Acceptance or Acceptance and Close Out:				Date: 14/03/2009	
CL #7 is closed. In house training programme was conducted for the employees and the same was checked by their attendance sheet					
Acceptance and Close out by Lead Assessor:				Date: 14/03/2009	

A.4 Annex 4: Team Members Statements of Competency

Statement of Competence

Name: **Kumar, Sathis** SGS Affiliate: **SGS India**

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
<i>Sub scope(s): Combined heat and Power & Waste Heat, Biomass Electricity Utilization</i>	
2. Energy Distribution	<input type="checkbox"/>
<i>Sub scope(s):</i>	
3. Energy Demand	<input type="checkbox"/>
<i>Sub scope(s):</i>	
4. Manufacturing	<input type="checkbox"/>
<i>Sub scope(s):</i>	
5. Chemical Industry	<input type="checkbox"/>
<i>Sub scope(s):</i>	
6. Construction	<input type="checkbox"/>
<i>Sub scope(s):</i>	
7. Transport	<input type="checkbox"/>
<i>Sub scope(s):</i>	
8. Mining/Mineral Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
9. Metal Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
<i>Sub scope(s):</i>	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
<i>Sub scope(s):</i>	
12. Solvent Use	<input type="checkbox"/>
<i>Sub scope(s):</i>	
13. Waste Handling and Disposal	<input type="checkbox"/>
<i>Sub scope(s):</i>	
14. Afforestation and Reforestation	<input type="checkbox"/>
<i>Sub scope(s):</i>	
15. Agriculture	<input type="checkbox"/>
<i>Sub scope(s):</i>	

Approved Member of Staff by: **Siddharth Yadav** Date: **28/10/2009**

Statement of Competence

Name: **Kumar, Senthil** SGS Affiliate: **SGS India**

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
<i>Sub scope(s): Combined heat and Power & Waste Heat and Biomass Electricity Utilization</i>	
2. Energy Distribution	<input type="checkbox"/>
<i>Sub scope(s):</i>	
3. Energy Demand	<input type="checkbox"/>
<i>Sub scope(s):</i>	
4. Manufacturing	<input type="checkbox"/>
<i>Sub scope(s):</i>	
5. Chemical Industry	<input type="checkbox"/>
<i>Sub scope(s):</i>	
6. Construction	<input type="checkbox"/>
<i>Sub scope(s):</i>	
7. Transport	<input type="checkbox"/>
<i>Sub scope(s):</i>	
8. Mining/Mineral Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
9. Metal Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
<i>Sub scope(s):</i>	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
<i>Sub scope(s):</i>	
12. Solvent Use	<input type="checkbox"/>
<i>Sub scope(s):</i>	
13. Waste Handling and Disposal	<input type="checkbox"/>
<i>Sub scope(s):</i>	
14. Afforestation and Reforestation	<input type="checkbox"/>
<i>Sub scope(s):</i>	
15. Agriculture	<input type="checkbox"/>
<i>Sub scope(s):</i>	

Approved Member of Staff by: **Siddharth Yadav** Date: **27.11.2009**

Statement of Competence

Name: **Banerjee, Sanjay** SGS Affiliate: **SGS India**

Status

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

Scopes of Expertise

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

Approved Member of Staff by: **Siddharth Yadav** Date: **28/10/2009**

Statement of Competence

Name: Mahawar, Abhishek SGS Affiliate: SGS India

Status

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

Scopes of Expertise

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

Approved Member of Staff by: Siddharth Yadav Date: 12/11/2009

Statement of Competence

Name: Singh, Kaviraj

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input type="checkbox"/>
<i>Sub scope(s):</i>	
2. Energy Distribution	<input type="checkbox"/>
<i>Sub scope(s):</i>	
3. Energy Demand	<input type="checkbox"/>
<i>Sub scope(s):</i>	
4. Manufacturing	<input type="checkbox"/>
<i>Sub scope(s):</i>	
5. Chemical Industry	<input type="checkbox"/>
<i>Sub scope(s):</i>	
6. Construction	<input type="checkbox"/>
<i>Sub scope(s):</i>	
7. Transport	<input type="checkbox"/>
<i>Sub scope(s):</i>	
8. Mining/Mineral Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
9. Metal Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
<i>Sub scope(s):</i>	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
<i>Sub scope(s):</i>	
12. Solvent Use	<input type="checkbox"/>
<i>Sub scope(s):</i>	
13. Waste Handling and Disposal	<input checked="" type="checkbox"/>
<i>Sub scope(s): Landfill gas, Wastewater and sludge treatment, Composting</i>	
14. Afforestation and Reforestation	<input type="checkbox"/>
<i>Sub scope(s):</i>	
15. Agriculture	<input type="checkbox"/>
<i>Sub scope(s):</i>	

Approved Member of Staff by:

Siddharth Yadav

Date:

16/12/2009

Statement of Competence

Name:

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	<input checked="" type="checkbox"/>
<i>Sub scope(s): Hydro, Wind, Combined heat and Power & Waste Heat, Biomass Electricity Utilization</i>	
2. Energy Distribution	<input type="checkbox"/>
<i>Sub scope(s):</i>	
3. Energy Demand	<input type="checkbox"/>
<i>Sub scope(s):</i>	
4. Manufacturing	<input type="checkbox"/>
<i>Sub scope(s):</i>	
5. Chemical Industry	<input type="checkbox"/>
<i>Sub scope(s):</i>	
6. Construction	<input type="checkbox"/>
<i>Sub scope(s):</i>	
7. Transport	<input type="checkbox"/>
<i>Sub scope(s):</i>	
8. Mining/Mineral Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
9. Metal Production	<input type="checkbox"/>
<i>Sub scope(s):</i>	
10. Fugitive Emissions from Fuels (solid, oil and gas)	<input type="checkbox"/>
<i>Sub scope(s):</i>	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	<input type="checkbox"/>
<i>Sub scope(s):</i>	
12. Solvent Use	<input type="checkbox"/>
<i>Sub scope(s):</i>	
13. Waste Handling and Disposal	<input type="checkbox"/>
<i>Sub scope(s):</i>	
14. Afforestation and Reforestation	<input type="checkbox"/>
<i>Sub scope(s):</i>	
15. Agriculture	<input type="checkbox"/>
<i>Sub scope(s):</i>	

Approved Member of Staff by:

Date: