

VALIDATION REPORT

Badarpur Energy Private Limited (BEPL)

6 MW Biomass Based Power Project in Assam by BEPL

SGS Climate Change Programme

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03/12/2009		CDM.VAL1009	
Project Title:			
6 MW Biomass based power project in Assam by BEPL			
Organisation:		Client:	
SGS United Kingdom Limited		Badarpur Energy Private Limited (BEPL)	
Publication of PDD for Stakeholders Consultation			
Commenting Period:		20/06/07 to 19/07/07 (in version 10 of AMS I.C)	
Re webhosting Period		23/05/08 to 21/06/08 (in version 13 of AMS I.C)	
First PDD Version and Date:		Version 01, 01/06/2007	
Final PDD Version and Date:		Version 1.3, 03/09/2009	
Summary:			
<p>Badarpur Energy Private Limited (BEPL) has commissioned SGS to perform the validation of the project: 6 MW Biomass based power project in Assam by BEPL</p> <p>Methodology Used: AMS I.C</p> <p>Version and Date: version 13, valid from 28/03/08 to 07/04/09 (Initially PDD was uploaded with version 10, valid from, 18/05/07 to 05/07/07 and due to expiry of version 10, it is re web hosted by applying version 13)</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 report and the annexed validation describes a total of 14 findings which include:</p> <ul style="list-style-type: none"> • 10 Corrective Action Requests (CARs); • 03 Clarification Requests (CLs); • 01 Forward Action Requests (FARs); and <p>All findings have been closed satisfactorily. The project is recommended to the CDM Executive Board with a request for registration</p>			
Subject:		Document Distribution	
CDM Validation			
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Abbreviations

APCB	Assam Pollution Control Board
BEPL	Badarpur Energy Pvt Ltd
BVCL	Barak Valley Cement Limited
CAR	Corrective Action Request
CDM	Clean development mechanism
CDM	EB CDM Executive Board
CER	Certified Emission Reduction
CL	Clarification Request
DOE	Designated Operational Entity
DNA	Designated National Authority
DPR	Detailed Project Report
DSCL	DCM Shriram Consolidated Limited
EIA	Environmental Impact Assessment
FAR	Forward action request
GHG	Greenhouse gas(es)
HCA	Host Country Approval
INR	Indian Rupees
IPCC	Intergovernmental Panel on Climate Change
kg	Kilo Gram
kJ	Kilo Joule
LoA	Letter of Approval
LOI	Letter of Indent
MoC	Modalities of Communication
NCV	Net Calorific Value
NOC	No Objection Certificate
ODA	Official Development Assistance
PP	Project Participant
PDD	Project Design Document
UNFCCC	United Nations Framework Convention on Climate Change

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1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Badarpur Energy Private Limited (BEPL) to perform a validation of the project: 6 MW Biomass Based Power Project in Assam by BEPL in India.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual version 1 and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The project activity is a renewable energy generation project based on renewable biomass and displaces electricity from a coal based power plant that would have been installed in the absence of project activity. The proposed project is using the conventional steam-power cycle. The pressure and temperature of the boiler are 45 kg/cm² and 430 Deg C respectively. A 32 TPH travelling grate boiler is installed in the plant; the two turbines (with 3 MW capacities each) with total capacity of 6 MW extraction-condensing turbine. 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.C version 13. 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 455,500 tCO₂e over a 10 year crediting period, averaging 45,550 tCO₂e annually^{3/}. 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: 7th December 2009

2. Introduction

2.1 Objective

'Badarpur Energy Private Limited (BEPL)' has commissioned SGS to perform the validation of the project: '6 MW Biomass based power project in Assam by BEPL' with regard to the relevant requirements for Clean Development Mechanism (CDM) project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

2.2 Scope

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

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

2.3 GHG Project Description

The proposed project activity involves installation 6 MW biomass based power project in the state of Assam of India thus displacing power from a coal based power plant. Biomass combustion is considered GHG neutral and hence power displacement through the project activity shall help in reduced emissions in power generation. The proposed project shall use the conventional steam-power cycle. A 32 TPH travelling grate boiler is installed in the plant; the pressure and temperature of the boiler are 45 kg/cm² and 430 Deg C respectively. Two turbines 3 MW capacities each are installed, both the turbines are of extraction-condensing type turbine. For handling ash generated in the boiler due to combustion of biomass electrostatic precipitator is also installed, this will help in preventing environmental pollution due to ash generated in the power plant.

2.4 The Names and Roles of the Validation Team Members

Name	Role	Affiliate
Ramkrishna Patil	Lead Assessor	SGS India
Ravi Kant Soni	Local Assessor	SGS India
Sandeep Kurmi	Sectoral scope expert	SGS India
Abhishek Mahawar	Financial Expert	SGS India

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 01/06/2007 and the subsequent versions version 1.1 dated 14/05/2008, version 1.2 dated 05/01/2009 and version 1.3 dated 03/09/2009 (final version). The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2

The site visit was performed on 24/07/2007 by validation team (Vikrant Badve worked as LA till 13/08/2008). The findings during site visit were described under local assessment checklist under Annex 1 attached with this report.

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 dated 28 November 2008. It serves the following purposes:

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

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

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

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

3.3 Findings

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

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

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

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

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

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

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

3.4 Internal Quality Control

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

4. Validation Findings

4.1 Approval

The host Party for this project is India. India has ratified the Kyoto protocol on 26th Aug 2002. A Letter of Approval or Host Country Approval (HCA) from Indian DNA was not submitted by the project proponent. CAR (1) was raised asking project proponent to submit the Letter of approval from Indian DNA. Project proponent has received the Host country approval for the present project activity on 15 May 2007 issued by the Indian DNA (Ref: /7/). Project participant has submitted the Letter of Approval to the validation team. This letter was checked by the validation team with the original copy and the project activity name and project participant name indicated in the HCA and in section A.1 of the PDD was found same.

The LoA from DNA confirms that:

- i. The Government of India has ratified the Kyoto protocol on 26th Aug 2002
- ii. This is approval of voluntary participation in the proposed CDM project activity
- iii. The project contributes to Sustainable Development in India

It has been confirmed that LoA is unconditional with respect to party to the Kyoto Protocol, voluntarily participation, contribution towards sustainable development and title of the project activity. Thus Letter of Approval is in accordance with paragraphs 45-48 of the Validation and Verification Manual (VVM) and CAR (1) was closed.

4.2 Participation Requirements

The host Party for this project is India; India has ratified the protocol on 26th August 2002 and is allowed to participate in CDM projects. The participation has been verified through the web link (http://unfccc.int/parties_and_observers/parties/items/2109.php).

Project Design Document (PDD) mentioned Badarpur Energy Pvt. Ltd. as a project participant for the project activity and this participation has been approved in Letter of Approval by the Indian DNA (reference number 4/3/2007 –CCC dated 15/05/2007) and is accepted. No Annex I Party has been identified in the PDD and therefore no further Letter of Approval was available. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration.

The MoC letter as per the latest UNFCCC format was provided by the PP. The name of project participant and contact information are consistent with the PDD and is accepted.

The proposed CDM project has been web hosted in the UNFCCC website: <http://cdm.unfccc.int/Projects/Validation/DB/6JOXFNL9K39YJRLEJ3Q76Y9E790OWR/view.htm> for global stakeholder's process to invite comment as per the CDM requirements. As per the CDM EB guidelines the proposed CDM project has been web hosted from 20/06/2007 to 19/07/2007. Due to expiry of earlier version of methodology (AMS I.C version 10), the project has been re webhosted on the UNFCCC website: <http://cdm.unfccc.int/Projects/Validation/DB/4AP19LUQTLVDL6HU2J0B5K1ZAI09BT/view.html> for global stakeholder's process in version AMS I.C version 13 to invite comment as per the CDM requirements has been web hosted from 23/05/2008 to 21/06/2008.

4.3 Project Design Document including Project Description

As per CDM-SSC-PDD guidelines for completion of PDD, project participant did not mention the distance of the project activity from the nearest Airport, Railway station; National Highway and Town/City in section A.4.1.4 of PDD, thus CL #3 was raised. In response to CL#3 project participant submitted revised PDD including all relevant information's in section A.4.1.4 (Ref: /3/) these information's have been found inline with CDM-SSC-PDD guidelines for completion of PDD thus CL #3 was closed out.

Project proponent did not submit undertaking that the project technology used for the project activity will not substituted by other or more efficient technologies during the crediting period, thus CL #4 was raised. In response to CL #4 project participant submitted a letter of undertaking (Ref: /23/) which states that the

technology employed for the project activity would not be changed during the crediting period, the same has been checked and found satisfactory, thus CL #4 was closed out.

4.4 Eligibility as a Small Scale Project

The project activity is the generation of electricity for the users. The generated electricity has been used by project participant for the in house consumption and is following AMS I C methodology (version 13) is based on Appendix B of the simplified modalities and procedures for small-scale CDM project activities. The project activity consists of boiler with steam generating capacity 32 TPH and the steam will be produced at 45 kg/cm² and 440 Deg. C temperature (430 ± 10 Deg C). With this maximum design pressure and temperature, the enthalpy will be 3298 kJ/kg and the feed water enthalpy at 105 Deg.C is 439 kJ/kg. Considering all this, the maximum boiler output will be 25.4 MWh thermal which is less than the 45 MWh thermal. Thus the project activity is eligible as small scale project activity. Maximum “output” is defined as installed/rated capacity, as indicated by the manufacturer of the equipment or plant, disregarding the actual load factor of the plant. Same has been verified from the name plate data of the turbine and also cross checked from technical specification for the turbine/boiler mentioned in the Purchase Order copies (Ref: /17/) during the site visit and found satisfactory.

4.5 Applicability of selected methodology to the project activity

Project participant submitted the excel spreadsheet for the calculation of maximum output capacity. The maximum thermal output with rated capacity of all equipments has been considered for the calculations and the maximum thermal output due to project activity 25.4 MW thermal which is less than 45 MW thermal. Thus the project satisfied the applicability criteria for maximum output.

The project is a small scale CDM project activity and is based on Appendix B (Version No. 07 dated 28 November 2005) of the simplified modalities and procedures for small-scale CDM project activities. The project activity conforms to the, type: Renewable Energy Projects and confirms the eligibility criteria of approved baseline and monitoring methodology AMS I.C (Version 13, Scope 1; EB 38) applied to the small scale project activity. The revised PDD discussed all the applicability criteria of the applied methodology AMS I.C reference to the proposed CDM project activity with appropriate justification (Ref: /3/). The project activity uses the renewable biomass in the boiler and displaces the coal as a fossil fuel. The thermal generation capacity for the project is 25.4 MWthermal which is less than 45 MWthermal. The project activity is a new facility and does not involve any addition of renewable energy units at an existing facility. The same has been checked during site visit. Thus project activity follows the applicability of AMS I.C and is accepted.

4.6 Project Boundary

As per the guidelines mentioned in the approved methodology AMS I.C (version13) “The physical, geographical site of the renewable energy generation delineates the project boundary”. Project boundary mentioned in section B.3 as per PDD (Ref:/1/) was not clear also net power supplied by project activity was mentioned outside project boundary which is supposed to be a part of project boundary and biomass transportation was not mentioned in the project boundary. To address these issues CAR #12 was raised. In response to CAR #12 the project participant clarified that the leakage due to biomass transportation is expected lesser than what can be assumed for fossil fuel transportation in the baseline because the source of biomass is local region, therefore biomass transportation was not incorporated in project boundary. The same has been checked in revised PDD (Ref: /3/) and found satisfactory. The PP has considered biomass transportation outside the project boundary which is collected from nearby region. Given a fact that baseline fuel would have been transferred from a longer distance than biomass, on a conservative basis, the PP has considered leakage emission due to biomass transportation in leakage calculation and is accepted, thus CAR #12 was closed out.

4.7 Baseline Selection and Additionality

Additionality tool version 05.2 is not applicable for the proposed project activity

The project activity follows the small scale methodology AMS I C version 13 valid from 28th March 2008 for “Thermal Energy for the user with or without electricity” as per Appendix B of the simplified modalities and procedures for small-scale CDM project activities. The project activity generates electrical energy from renewable biomass and supplies the same for in house consumption replacing fossil fuel (coal) based electricity generation. The additionality of the project has been established by cost of electricity generation from baseline fuel (coal) and renewable biomass (project activity).

As per guidelines of approved baseline and monitoring methodology AMS-I.C (version 13, dated 28 March 2008) for renewable energy technologies that displace technologies using fossil fuels, the simplified baseline is the fuel consumption of the technologies that would have been used in the absence of the project activity times an emission coefficient for the fossil fuel displaced.

The coal based power plant has been selected as baseline for proposed project activity. It is mentioned in PDD that project participant would supply power from project activity to its group company BVCL^{/18/}. BVCL is a cement unit and prior to the project activity had been drawing power from the Assam State Electricity Board grid. CAR #8 was raised asking the clarification from PP about the following issues:

1. Baseline selected is coal based power plant, but the prevailing baseline scenario was electricity from grid, appropriate evidences supporting that baseline would be coal based power plant was not submitted
2. How Para 19 – 23 of the methodology AMS I C version 13 has been taken into consideration for the project activity.
3. As per the methodology the specific fuel consumption of all types of fuels needs to be fixed ex-ante during the validation and consumption of each type of biomass and fossil fuel shall be monitored. Clarification is required in PDD section B.6 on how emission reductions were calculated in view of para 19 – 23 of methodology
4. Project participant did not about clarify the conservativeness of heat rate (Heat rate design and heat rate actual) considered.
5. Project participant did not incorporate the NCV of biomass in monitoring plan.

In response to CAR #8 project participant's clarification as:

1. The state of power in the state of Assam is awful. There was a demand and supply gap of approx. 18 million kWh in the state; this is verified through report from North-Eastern Regional Load Dispatch Centre (NERLDC) available with the link (http://www.nerlhc.org/mis/Annual%20Report_2005-06.pdf). There have been heavy power cuts in the state of Assam in 2005-06, the North Eastern Regional Electricity Board (NEREB's) annual report for 2005-06 gives information on monthly power cuts in the Assam (Ref: http://www.cea.nic.in/god/reb/nerpc/AnnualReport_2006_literature.pdf) The situation of power is not getting any better and this has direct impact on the industry performance in the region. Also It is observed that the gap between supply and demand is continuing in the region and in the state of Assam in year 2007-2008 and 2008-2009 and the same is checked from Annual Administrative Report of 2008-09 from Central Electricity Authority, Northern Region Power Committee, Shillong which gives energy requirement (demand) and energy consumed (supply) (http://nerpc.nic.in/Reports/Annual%20Administrative%20Report/Annual%20Report%20%20of%20NERPC%20for%202008-09_final.pdf, section 2.4 page 8) and is accepted. As the power situation is erratic in the state, PP considered putting up a power plant which could meet the power requirement of the cement plant of the group company. Now the options available to the group were either to go for a coal based power plant or to go for biomass fired one. Based on the economics of the two (Ref: /11/) though coal based option was found to be more attractive, PP decided to do the project activity due to the availability of CDM benefit to the project. The alternatives for the project activity have been discussed in section 4.7.3 of the report.
 - i) Para 19: All types of fuels including biomass and fossil fuels that can be used are part of PDD monitoring plan. Project emissions shall be calculated based on fossil fuel combustion. The same is mentioned in section B.7.1 of the PDD. Also section B.6.1 has mentioned formula used for project emission estimations.
 - ii) Para 20: The project activity envisages use of rice husk in the project activity and the specific biomass consumption for the biomass comes out to be 1.45 kg/ kWh. The same estimation has been checked through the Financial analysis excel spreadsheet provided by PP. The same value shall be used to arrive at the power generation which would eventually be used in emission reduction estimations as per Para 23 of methodology
 - iii) Para 21: As the fossil fuel consumed, if any, in the project activity is being considered part of project emissions, segregation of energy output for the fossil fuel part would not be required.

- iv) Para 22: All types of fuels are monitored as detailed out in the monitoring plan.
 - v) Para 23: Each year this can be validated and accordingly the conservative figure is used for estimation of emission reductions.
2. Specific energy consumption in the baseline has been included and not the specific fuel consumption considering a recent clarification from SSC WG in its WG meeting 17(Ref: http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_CZP1QQIB765IY7IT10J6OXEF4KO_WDF)
 3. The heat rate has been calculated based on the design values of quantity of steam and steam quality required for generation of power at rated capacity of 6 MW. It may be noted that, boiler efficiency is considered at 100% which is the most conservative. This heat rate shall be compared each year with actual plant heat rate and the value leading to lower value of emission reduction shall be used. The actual plant heat rate shall be calculated based on actual gross power generation and fuel energy input (based on quantity and calorific value of all biomass combusted). In the monitoring plan, PP had already included monitoring of quantity of biomass used. Besides, calorific value of biomass shall also be monitored and same has been included in the revised monitoring plan. In case actual heat rate is more than the design heat rate then actual power generation in the project activity shall be considered for emission reduction calculations. In case actual heat rate is less than the design heat rate which also means that the project plant performs better than the design, then power generation shall be corrected for design heat rate. This shall be done multiplying the actual power generation with the correction factor. Correction factor shall be the ratio of actual heat rate to design heat rate.
 4. The NCV of biomass has included as monitoring parameter in the revised monitoring plan of the revised PDD. The NCV of all biomass types will be monitored.

Clarifications provided by the PP have been cross checked and found acceptable, thus CAR #8 was closed out.

4.7.1 ***Additionality***

Additionality of the project activity has been established as per the guidelines suggested in Attachment A to Appendix B. The project has adopted the Investment barrier to discuss the additionality of the present project activity. The investment barrier calculates comparison of cost per unit energy (INR/kWh) supplied for different fuels. The detail analysis of the investment analysis is discussed in below section 4.7.4 of the report

4.7.2 ***Prior Consideration of the Clean Development Mechanism***

The project participant has prior knowledge of CDM and project participant has invited CDM advisory services on 20/09/2004(Ref: /21/). The CDM was considered seriously as evident from the Board resolution dated 01/06/2005. The purchase order for turbine was released on 08/06/2005, this date has been considered as the start date of project activity (Ref:/17/). The PDD was submitted to the DOE on 11/06/2007 for validation. The evidences to justify the gap have been submitted by project participant and mentioned in chronology as per section B.5 of revised PDD (Ref: /3/).

PP seriously considered the CDM benefits before implementation of the project. Following trail of events regarding the project implementation demonstrates this. The entire chronology is tabulated as below

Activity	Date
PP sent letter inviting consultation on proposed project to CDM advisor	20/09/2004
Reply from CDM advisor on the queries raised by PP	23/09/2004
Proposal submitted by advisors on providing project consultancy and CDM advisory	01/11/2004
LOI to advisors on technical and CDM advisory	20/11/2004
Contract signed with technical partner – DSCL for carrying out detailed project study	06/01/2005
Acceptance of offer for CDM advisory	22/02/2005

Proposal from another DOE for validation	24/04/2005
Proposal from another DOE for validation	17/05/2005
Proposal from SGS for validation	18/05/2005
Board Resolution for the project	01/06/2005
PO raised for Turbine- Project Start date	08/06/2005
PO raised for Boiler	10/06/2005
Letter sent to Chief Executive Officer – Cachar Electrical Circle, Assam State Electricity Board regarding to local stakeholder consultation	30/07/2005
Letter to Mr. Ashish Dey, Secretary Gharoa (NGO), regarding to local stakeholder consultation	05/08/2005
Letter of endorsement of project from Rotary Club of Badarpur	05/10/2005
NOC from Badarpur Town Committee	08/10/2005
Document submitted to DNA post meeting	21/10/2005
NOC from Assam Pollution Control Board	04/08/2006
Proposal from DOE	Jan 2007
Resubmission of project to DNA	30/03/2007
HCA from DNA	15/05/2007
Engagement of DOE	11/06/2007
Plant commissioning	April 2008

Regarding to seriousness of CDM consideration following issue (discussed under CAR #11) were raised:

1. Project participant did not provide the evidences of prior knowledge of CDM before conceptualization of project activity and evidences of communication with EVI in 2004 as per chronology of events.
2. There is a time gap of two years between the project conceptualization and project submitted for validation, project participant did not submit the appropriate evidences to justify the delay

In response to CAR #11 project participant submitted the copy of letter to CDM adviser dated 20/09/2004. Copy of email dated 23/09/2004 and copy of proposal dated 01/11/2004 has been checked. The acceptance letter dated 20/11/2004 from the PP referring to this proposal has been submitted. PP received the proposal for the validation from different DOEs in April and May 2005. After Board resolution, the purchase orders have been released for the boiler and turbine in and within four months the project is presented to MoEF for host country approval. However the PP did not receive NOC from APCB which is important to DNA for Host Country Approval. Project activity receives the NOC from APCB on 04/08/2006 and the PP had resubmitted the project activity for HCA approval. The PP received the HCA on 15/05/2007. PP has appointed the DOE on 11/06/2007. The project activity is commissioned on April 2008. Thus project participant has done parallel actions to secure the CDM status while implementing the project activity. It is observed from above table that there is less than two years gap between the documented evidence, thus it is concluded that continuing and real actions were taken to secure the CDM status for the project activity as per Annex 22 of EB 49 and is accepted. Thus the gap between the project conceptualization and appointment of DOE is justified and is accepted. Thus CAR#11 was closed out.

The project participant has not submitted the evidence for the start date of project activity and it is not clear whether the start date is earliest real action for the project activity, Thus CAR 06 was raised and in response to CAR 06, the PP has revised the start date as 08/06/2005, which is the purchase order for the turbine. By releasing the purchase order, the PP is committed for the expenditure. This is the earliest real action for the project activity and is accepted as per para 67 of EB 41.

4.7.3 Identification of alternatives (if applicable)

The PDD has identified the different alternatives for the project activity. Technically feasible alternatives for power generation available to the PP were:

- Installation of a coal based power generation unit
- Installation of fuel oil based DG set(s)
- Installation of gas based power plant
- Implementation of project activity without CDM benefits
- Import from the grid

The above alternatives are analysed based on fuel availability in the region and lowest cost of power generation has been selected as the baseline to the project activity.

It is demonstrated that implementation of project activity without CDM benefits can not be a baseline option because project activity faces the barrier of high levelized cost of electricity generation other than not being the most financially attractive option.

Though the natural gas is available in the state of Assam, the pipeline network was not available at the site. The same has been checked during site visit. Thus installation of gas based power plant is not the feasible alternative for the project activity.

Barak Valley Cement limited (BVCL), a group company of BEPL had faced a lot of problem due to unreliable power situation, and thus BEPL has decided to set up the captive power plant and fed to the Cement plant. Thus the import from the grid was not feasible alternative to the project activity. Thus in baseline, the Project Participant identified two alternatives for power generation in the baseline scenario:

- Captive power generation based on coal
- Captive power generation based on fuel oil based DG sets

As per the Report of Expert Committee on Fuels for Power Generation, Central Electricity Authority (CEA), unit cost of power generation for fuel oil based DG sets it comes out to be INR 5.96/kWh and is always more than the unit cost of power generation based on coal INR 1.59/kWh. Thus, the cost of power generation for furnace oil is high as compare to coal (This indicates that use of furnace oil for power generation is not the baseline scenario. Thus captive power generation based on coal would have been the most realistic baseline scenario. This alternative complies with all applicable and enforced legislation.

4.7.4 Investment analysis (if applicable)

The additionality is demonstrated as the levelised cost comparison for the generation of electrical energy for project activity and baseline scenario. The levelised cost of electricity generation for baseline fuel (coal) and biomass is discussed below.

The cost comparison analysis described under the section B.5 of PDD was discussed with the project proponent. The assumptions used for the calculation of cost required per unit of energy are as follows

1. Biomass cost available to PP at the time of decision making (INR 900/MT) was verified from the letter received from M/s Tazuddin biomass supplier, dated 05/10/2004. The suitability of biomass cost at the time of final investment decision (08/06/2005) was also cross checked from the Detailed Project Report (DPR) issued by DSCL Energy Services Company Ltd dated 08/07/2005 (draft issued on 06/05/2005 as confirmed by DSCL). The price of the biomass mentioned in the DPR was the inference of the market price available at the time of investment decision making. The PP received the draft report from DSCL on 06/05/2005. The same cost is considered in project financials which is confirmed with DSCL and found appropriate. Hence the biomass fuel cost taken from the DPR (INR 900/MT) is accepted. The cost of coal was INR 1550/MT in year 2004 (this is checked from the Bill of coal supplier Gulab Chand Jain dated 09/04/2004 (no. C.G.J/19/04-05). However at the time of decision made in year 2005, the cost of coal was INR 1600/- and same is checked from the Invoice of the Hitech International Traders dated 11/05/2005. The variation in the coal cost has taken care in the sensitivity analysis.
2. The DPR has considered the 3000 kCal/Kg for estimation of fuel requirement and financial projections. The calorific value for the biomass fuel 3000 kCal/kg (ref: <http://www.indiasolar.com/cal-value.htm>) cross checked with available public information and is accepted. The calorific value of coal has been taken from the lab test report prior to the decision made. The calorific value of coal has been cross checked with IPCC 2006 data. This value is 6500 kCal/ kg. The calorific value (average 6800 kCal/Kg) has been cross checked with lab test report of May 2008 and found to be conservative and is accepted.
3. Efficiency of biomass based boiler (78%) has been taken from the Purchase order to Co-gent Engineers Private Limited and is accepted.

Based on the above data the cost required per unit of energy supplied has been calculated for coal and biomass and found that the cost per unit energy (INR/kWh) for the biomass is higher than that for the coal. The average cost per unit energy for biomass is INR 2.15/kWh and for coal is INR 1.84/kWh. The overall project cost (INR 21.62 lacs) has been taken from the DPR prepared by DSCL consultant. The same has been cross checked with actual project cost INR 37.22 lacs as certified by a third party, Chartered Accountant

Kumar Vijay Gupta and Co. and is accepted. The calculation and assumptions were provided in the financial analysis excel sheet which has been checked and found acceptable. The PP received the draft report from DSCL on 06/05/2005 prior to the conceptualization of the project activity. The same is confirmed through the letter from DSCL to the PP. The receipt of draft report to the PP has been cross checked through the confirmation mail to validation team dated 27/08/2009. The DPR is the inference of the draft report thus the all the input values of the financial data are available at the time of decision made for the project activity as per para 6 of Annex 45 of EB 41 and is accepted.

Biomass based thermal power plant's performance is further affected by varying moisture levels in it more during the season of rain. The Project participant would have to make proper arrangement to avoid such a situation.

The result of baseline scenario is as follow

Parameter	Average Cost of Power Generation (INR/kWh)
Baseline Scenario with coal as fuel	1.84
Baseline scenario with 10% increase in coal price	1.94

The variables like price of the biomass, plant load factor and project cost have the material impact on the analysis. Thus as per para 16 of the annex 45 of EB41, the sensitivity analysis for the project activity has been carried out for the project activity considering these factors; the price of biomass , plant load factor achieved in a biomass based power plant and project cost.

The calculations for the same were checked (Ref: /11/) and found acceptable. Thus the sensitivity analysis indicates that average cost of power generation for biomass is always higher than the baseline fuel coal. Therefore, the project activity is additional and not a business as usual scenario.

The result of sensitivity analysis is as below

Parameters & % variation	Average Cost of Power Generation (INR/kWh)		
	10%	0%	-10%
Change in Biomass rate	2.29	2.15	2.02
Change in PLF	2.08	2.15	2.25
Change in Capex (Project cost)	2.28	2.15	2.02

Also the project participant has not mentioned the appropriate start date for the crediting period, thus CAR 07 was raised and in response to that PP has mentioned appropriate date as 01/01/2010 or after the registration of the project with CDM EB (which ever is later) for the crediting period and is accepted. Thus CAR 07 was closed out.

4.7.5 Barrier analysis (if applicable)

UNFCCC simplified modalities seek to establish additionality of the project activity as per Attachment A to Appendix B, which listed various barriers, out of which, at least one barrier shall be identified due to which the project would not have occurred any way. Project participants identified following barriers for the proposed project activity: Investment Barrier, technological barrier and Other Barriers

Project participant has demonstrated levelized cost comparison for the baseline fuel and the project activity and same has been discussed in section 4.7.1 of the report.

In case of technological barrier it is stated that low pressure systems are less efficient than high pressure systems. Also due to presence of alkalis in biomass combustion of biomass containing alkalis requires frequent cleaning and stoppages; at high temperatures these alkalis start building up result poor heat transfer and lower overall efficiency. The research paper by Progress in Energy and combustion Science (published in Elsevier Science dated 28/01/2000) (Ref: /22/) has been checked as a reference to technological barrier.. However this technological barrier is not convincing and conclusive to demonstrate the additionality

4.7.6 Common practice analysis

Not applicable as PP has not mention common practice barrier in the final PDD.

4.8 Application of Baseline Methodology and Calculation of Emission Factors

The proposed CDM project activity uses the simplified baseline methodology AMS I.C, version 13 as the project activity involves generation of electrical power by using biomass and using the same for in house consumption. The power generation in the absence of project activity would have been in a coal based thermal power plant. The baseline emission factor has been estimated based on turbine specification data and 100% boiler efficiency in the baseline (Ref: /11/), this has been checked and found satisfactory

The approved methodology has been applied correctly for determining baseline emissions, project emissions and leakages .All the equations/parameters used for calculating baseline emissions and project emissions have been clearly identified and verified through revised PDD (Ref: /3/)

CAR #9 was raised in view of following issues:

1. Leakage has not been considered as per the “General guidance on leakage in biomass project activities, Version 02, EB 28”
2. “Biomass assessment report” and performance test reports of turbines was not submitted by PP.
3. Leakage due transfer of equipments did not considered by project participant while during site visit it was observed that the turbines used in the project activity were not new and thus leakage due to transfer of turbines must be accounted as per the methodology AMS I C
4. PDD did not incorporate the leakage on account of biomass non-availability and fossil fuel consumption in the project activity, also biomass availability and fossil fuel consumption is not included as monitoring parameters in section B.7.1 of PDD
5. The source of the density of diesel considered in leakage calculation was not clear

In response to CAR #9 project participant considered leakage as per “General guidance on leakage in biomass project activities, Version 02, EB 28” (Ref:/3/). It is clarified that in the absence of information from publicly available reports on biomass availability in the region from state or central Government agencies and/ or other institutions of repute, BEPL has carry out its own assessment through external experts Randhir Biswas and Associates. As per General guidance on leakage in biomass project activities, version 03(Annex 38 EB 47, para 18), PP has undertaken ex-ante, the biomass assessment at the start of crediting period. Also PP has submitted the Detail project report prepared by DSCL energy services Pvt. Ltd which mentions the availability of surplus biomass within 50 km radius good for 10 MW power generation (Ref: /20/). Thus the leakage is not applicable for the project activity. PP has purchased the old turbines from the shipyard and these turbines are not in application at the time of transfer or purchase. Thus equipment is not transferred from any other project activity. Project participant submitted performance test reports for turbines (Ref: /8/) mentioning that turbines have been tested for their performance and these are capable to run to their rated capacity. The revised PDD mentioned that the turbines proposed in the project activity are not transferred from any other project activity.

Leakage on account of biomass non-availability and fossil fuel consumption in the project activity has been included and biomass availability and fossil fuel consumption is included as monitoring parameters in section B.7.1 of revised PDD. The density of diesel was taken from Indian Oil Corporation Limited (IOCL) website <http://www.iocl.com/Products/DieselSpecifications.pdf> this has been verified and found acceptable. CAR #9 was closed.

PP has calculated the baseline emission factor (t CO₂/MWh) for the project activity. The boiler thermal energy output is converted to fuel energy input (KJ/hr) by considering 100% boiler efficiency. The specific energy consumption is calculated (kCal/kWh). The coal consumption (Kg/kWh) has been calculated by considering coal calorific value of 6500 kCal/Kg. The emission factor for coal is taken from IPCC default value (96.1 tCO₂/TJ). Thus the baseline emission factor for coal is 1.36 t CO₂/MWh and same will be fixed during entire crediting period. The design specific energy consumption for the project activity is 4348 kCal/kWh and taken from technology supplier. The emission factor for trucks has been calculated as 0.000481 tCO₂e/ km. The emission factor of Diesel (74.1 tCO₂/ TJ) and NCV of diesel (43 TJ/ 10³ tonne) is taken from IPCC default value. The diesel density (0.86 kg/lit) is taken from India Oil Corporation Limited.

The mileage of the diesel (5.7 km/litre) is taken from IPCC and is accepted. The emission factor for truck is fixed throughout the crediting period.

4.9 Application of Monitoring Methodology and Monitoring Plan

The monitoring methodology of AMS I.C, version 13 is correctly followed in the PDD version 1.2 and the required parameters of the monitoring plan are also inline to the applicable methodology. The monitoring methodology applies consistently the choice of the option selected for monitoring both of project and baseline emissions.

The findings regarding the baseline and monitoring methodology has been discussed in section B.7 of the report. As per PDD project participant did not mention about training requirement or responsible party for the training for the project activity, thus CL #5 was raised. In response to CL #5 project participant clarified that the plant is commissioned in April 2008.,trained and experience people would be working in the plant for safe operation and maintenance of the plant & machinery (Ref:/3/). Clarification by project participant regarding to training requirement found satisfactory, thus CL #5 was closed out

Project participant did not submit calibration certificates for equipments and monitoring procedure followed for the project activity, thus CAR #13 was raised. In response to CAR #13, during site visit project participant explained that the plant is a new facility still under construction and expected to be commissioned in year 2008. In actual the project activity is commissioned in April 2008 and same is checked form the performance test by Robarant Engineering Works Pvt. Ltd. on 25/04/2008. PP has mentioned the calibration procedure for the project activity and is accepted. Explanation provided by the project proponent is found acceptable; thus CAR #13 was closed out.

4.10 Environmental Impacts

Environment Impact Assessment study is not required for the project activity as per the regulations defined by Central Pollution Control Board in India (Ref:/12/).Project participant did not submit copy of consent to operate and establish the plant from Assam Pollution Control Board, thus CAR #10 was raised. In response to CAR #10 project participant submitted the copy of Consent to establish for the project activity (Ref: /13/) and clarify that Consent to operate is sought each year by PP from Pollution Control Board, Assam. First consent to operate was received for the year 2007-2008 which ended on 31st March 2008. PP has now applied for the renewal of the consent from PCB on 29/03/2008 (Ref: /16/). The consent to operate can be checked during verification and Forwarded Action Request 14 is raised for the same, thus CAR #10 was closed out.

The previous consent to operate is not valid now and PP has applied for renewal and still it is pending from pollution control board. Thus FAR #14 is raised to check the consent to operate for the project activity during first verification of the project activity.

4.11 Local Stakeholder Comments

Stakeholder consultation for the project activity has been conducted to account for the views of the people impacted either directly or indirectly due to the project activity. Following people were identified as local stakeholders

- Local NGO Gharoa
- Local gram panchayat, Debendranagar
- Badarpur Town Committee
- Rotary Club of Badarpur
- Deputy Commissioner, Karimganj District
- Assam Pollution Control Board

Project participant invited comments from people at all levels i.e. through meetings, consultation with Gram Panchayat representatives and district authorities. No adverse comment from stakeholders on the project activity received. The project proponent has submitted the copy of discussions with individual stakeholders;

the same was cross-checked by the local assessor during the site visit and documentation provided in support to local stakeholder consultation was accepted. PP has also provided a scan copy of communication with Mr. Ashish Dey, Secretary Gharoa (NGO) on 05/08/2005. The PP also got a letter of endorsement from Rotary Club of Badarpur on 05/10/2005. No Objection Certificate (NOC) was also received from Office of the Chairman – Badarpur Town Committee on 08/10/2005.

As per Section E.2 of the PDD mentions that project activity has positive impact on the local community. It was not clear whether the positive impacts mentioned is extract of the comments received from the local stakeholders or it is project proponent's view about the project activity, also project participant did not submit summary of stakeholders comment, thus CAR #2 was raised. In response to CAR #2, project proponent submitted the copy of discussions with individual stakeholders (Ref: /5/). The same was cross-checked by the validation team during the site visit and there were no negative comments received and found acceptable, thus CAR #2 was closed out.

5. Comments by Parties, Stakeholders and NGOs

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

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

The Project Design Document for this project was made available on the SGS website <http://cdm.unfccc.int/Projects/Validation/DB/6JOXFNL9K39YJRLEJ3Q76Y9E790OWR/view.html> and was open for comments from 20/06/2007 until 19/07/2007 but due to expiring of the methodology (AMS I.C version 10) the PDD for this project was re web hosted on the website in AMS I.C, version 13 <http://cdm.unfccc.int/Projects/Validation/DB/4AP19LUQTLVDL6HU2J0B5K1ZAI09BT/view.html> and open for the comments from 23/05/2008 until 21/06/2008. Comments were invited through the UNFCCC CDM homepage

5.2 Compilation of all Comments Received

There are five comments received for the project activity during the global stakeholder's consultation.

Comment Number	Date Received	Submitter	Comment
1	14/07/2007	Avdesh Dubey	The project is located in coal belt, having 6500 K Cal /Kg. The cost of coal considered @0.45 Kg/KWh as against 1.4 Kg of biomass. Considering the calorific value as 50% of the coal the biomass requirement will be 0.9 Kg per KWh. Since the project is based on surplus biomass thus the fuel cost will be negligible or may be within 0.5 Rs. On considering this project activity is most economical.
2	14/07/2007	Avdesh Dubey	There are no details about surplus availability of biomass, and how it will not lead to any leakage
3	14/07/2007	Avdesh Dubey	The project would not face any technology barrier as using rice husk in India is common practice.
4	14/07/2007	Avdesh Dubey	The power generation cost with 6 MW coal based power plant if is compared. Then it may be found that the surplus biomass based power plant is most economical based on which finance at concessional interest rate has been provided.
5	14/07/2007	Avdesh Dubey	The prevailing price lead to comprehension that the project may not be additional and is baseline. The DOE to check the correctness of claims.

5.3 Explanation of How Comments Have Been Taken into Account

Date:	14-07-07	Raised by:	Avdesh Dubey
No.:	01		
ISHC Comment		Date: 14-07-07	
The project is located in coal belt, having 6500 K Cal /Kg. The cost of coal considered @0.45 Kg/KWh as against 1.4 Kg of biomass. Considering the calorific value as 50% of the coal the biomass requirement will be 0.9 Kg per KWh. Since the project is based on surplus biomass thus the fuel cost will be negligible or may be within 0.5 Rs. On considering this project activity is most economical.			
Project Participant Response:		Date:18/07/07	

The complete analysis is provided to DOE with details. The data used is verifiable and transparent.			
LA response: Project participant has provided levelised cost analysis for assessment of most economical baseline scenario for the project activity. Appropriate evidences for cost of coal and biomass considered have been checked. conservativeness used in the estimation of baseline scenario was checked and found acceptable. The biomass availability and cost of the biomass has been checked through the DPR prepared by DSCL and is accepted. The coal is easily available in the region, thus baseline is the coal consumption for power generation. Comment was closed			
Date:	14-07-07	Raised by:	Avdesh Dubey
No.:	02		
ISHC Comment		Date: 14-0-07	
There are no details about surplus availability of biomass, and how it will not lead to any leakage			
Project Participant Response:		18-07-07	
The project is first such case in the region and so would not lead to any leakage. This has been discussed as per the "General guidance on leakage in biomass project activities, Version 02, EB 28". The region is a paddy rich area and a lot of biomass is available that has no competing use as on date.			
LA response: The biomass assessment mentioned in the DPR was checked and the same would be monitored during the project activity. Monitoring plan of the project activity was checked for the inclusion of biomass availability assessment and fossil fuel consumption. DPR has mentioned that the biomass is available in the region to produce the 10 MW power generation. The same would be monitored during the project activity Comment was closed.			
Date:	14-07-07	Raised by:	Avdesh Dubey
No.:	03		
ISHC Comment		Date: 14-07-07	
The project would not face any technology barrier as using rice husk in India is common practice.			
Project Participant Response:		Date:18-07-07	
Support in the form of documents and research papers are shared with DOE during validation suggesting that combustion of rice husk is not an easy proposition compared to conventional form of power generation.			
LA response: The research paper by Progress in Energy and combustion Science (published in Elsevier Science dated 28/01/2000) was provided by PP against the claim of technological barrier discussed in the PDD. However this technological barrier is not convincing and conclusive to demonstrate the additionality. Comment was closed.			
Date:	14-07-07	Raised by:	Avdesh Dubey
No.:	04		
ISHC Comment		Date: 14-07-07	
The power generation cost with 6 MW coal based power plant if is compared. Then it may be found that the surplus biomass based power plant is most economical based on which finance at concessional interest rate has been provided			
Project Participant Response:		18-07-07	
Detailed financial analysis sheets are provided to DOE for checking. These are transparent and verifiable			
LA response: The data and assumptions used in the financial analysis were checked with the evidences provided like coal cost, biomass cost, income tax rate, project capacity etc and found acceptable. It was found that cost of power generation for biomass is INR 2.15 /kWh and in case of coal is INR 1.84 /kWh. Thus levelized cost comparison indicates that coal based power plant is economical as compare to biomass based power plants. Thus the Comment was closed.			
Date:	14-07-07	Raised by:	Avdesh Dubey
No.:	05		
ISHC Comment		Date: 14-07-07	
The prevailing price lead to comprehension that the project may not be additional and is baseline. The DOE to check the correctness of claims.			
Project Participant Response:		Date:	
The project activity is additional due to high levelized cost of comparison as compare to baseline scenario			

LA response:

The baseline for the project activity is coal based independent power plant and the project activity is biomass based power generation. The additionality is demonstrated by comparing the levelized cost of electricity generation and it is found that levelized cost of electricity generation for biomass is higher than baseline coal. The evidences for the cost of fuel and calorific value have been checked for this calculation and are accepted. Due to high levelized cost of electricity generation, the project activity is not the baseline. Thus comment was closed.

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
24/07/2007	Atul Sanghal	Project Consultant	Project activity description, Baseline scenario, Emission reduction calculations, Financial analysis for additionality demonstration,
24/07/2007	Prahlad Chamaria	Project Proponent	Baseline scenario, Chronology of events for the project activity
24/07/2007	Anjan Katna	Project Consultant	Local stakeholder consultation for the project activity

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 01/06/2007 (this version was published for the international stakeholder consultation)
- /2/ PDD version 1.1,dated 14/05/2008 (this version was republished for the international stakeholder consultation due to expire of earlier version of methodology)
- /3/ Revised PDD version 1.2,dated 05/01/2009
- /3.1/ Revised PDD version 1.3,dated 03/09/2009,
- /4/ Board resolution dated 01/06/2005
- /7/ Host Country Approval, dated 15/05/2007(F.NO-4/3/2007-CCC)
- /9/ MOC, dated 30/04/2009

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):

- /5/ Stakeholders consultation meeting dated 28/12/2006,30/12/2006 and 15/01/2007
- /6/ Biomass suppliers letter, dated 05/10/2004
- /8/ Turbine PG Test report, dated 30/04/2004(ref:Rew/8430/Fbd)
- /10/ No ODA undertaking ,dated 17/07/2007
- /11/ Financial Analysis Excel sheet, dated 28/01/2009
- /12/ EIA notification by MoEF, dated 27/01/1994
- /13/ Consent to operate from 01/04/2007 to 31/03/2008 (Ref:NO/WB/2-II/T-1771/06-07/215/541)
- /14/ Coal bill, dated 09/04/2004 (Ref: Bill No. G.C.J/19/04-05), Invoice of the Hitech International Traders dated 11/05/2005
- /15/ Acceptance letter by PP regarding CDM consultancy, dated 22/02/2005 (Ref:Proposal:EVI/BPPL/CDM/01/21-Feb-2005)
- /16/ Application for consent renewal for year 2008-09,dated 29/03/2008(Ref:BEPL/PCB/2008-09/01)
- /17/ Purchase order for turbines dated 08/06/2005
- /18/ Memorandum of Understanding between BEPL and BVCL,dated 15/12/2005
- /19/ schedule XIV of IT Act for depreciation rate
- /20/ Detail Project Report prepared by DSCL ENERGY SERVICES, dated 08/07/2005
- /21/ Copies of mails regarding to CDM consideration
- /22/ The research paper by Progress in Energy and combustion Science (published in Elsevier Science dated 28/01/2000 for technological barrier
- /23/ Undertaking by PP regarding to no change in technology during crediting period
- /24/ Purchase order for boiler dated 10/06/2005
- /25/ A html web page for the Coal quality in Assam

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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 **6 MW Biomass based power project in Assam by BEPL**.

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?
Purchase order for the project activity	PP has provided the P.O. copies for the turbine and the boiler.	PO copy for turbine and boiler	Appropriate and accepted
Proof for project start date	PP has provided the P.O. copy of turbine which is the start date of the project activity.	P.O copy of turbine, dated – 08/06/2005	Appropriate and accepted
The chronology of planning and implementation of the project activity	PP has explained the whole chronology of planning and implementation of the project activity and provided the documents in support of.	Letters and saved copies of mails	Appropriate and accepted
No ODA involved	PP has provided the undertaking that No ODA was involved in the project activity.	Undertaking letter	Appropriate and accepted
Ownership	PP has the ownership right for the project activity.	Interviewed and site visit	Appropriate and accepted
Technical specification of the project activity	PP has provided the DPR copies and P.O. copies for the technical specification of the turbine and the boiler.	DPR copies and P.O. copies	Appropriate and accepted
Undertaking for no change in technology during the crediting period.	PP has provided an undertaking letter stating that the technology involved in the project activity will not change during the crediting period.	Undertaking letter	Appropriate and accepted
Extensive initial training and maintenance efforts	PP has provided the DPR copy which mentions the training and maintenance efforts for the project activity.	DPR copy	Appropriate and accepted
QA/QC procedures for data monitoring or ISO certificates for the company (if applicable) and personnel training programme, Operation & maintenance	The DPR copy provided by the PP reveals the operation and maintenance procedures.	DPR copy	Appropriate and accepted

Issue	Findings	Source/Mean of Verification	Further Action / Clarification / Information Required?
Regulatory approval (consent to operate and establish) for the project activity from Assam Pollution Control Board	PP provided a copy of approval letter	Copy of letter	Appropriate and accepted
Contract between Barak Valley Cement Company reg. purchases of Power from BEPL.	Copy of agreement between BVCL and BEPL submitted by PP	agreement copy	Appropriate and accepted
EIA of the project activity	Copy of notification from Ministry of Environment and Forest submitted	Notification from MoEF	Appropriate and accepted
Evidence for Biomass availability in the region	The DPR copy provided by the PP	DPR copy	Appropriate and accepted
Excel spreadsheet giving the investment analysis and sensitivity analysis for the project activity	Financial analysis sheet provided by PP	Financial analysis excel sheet	Appropriate and accepted
Excel spreadsheet giving baseline and project emission and leakage calculations for project activity	Financial analysis sheet provided by PP	Financial analysis excel sheet	Appropriate and accepted
Letter of Modalities of communication	Letter of undertaking of Modalities of communication submitted by PP	Undertaking	Appropriate and accepted

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>India has ratified the Kyoto protocol on 26th August 2002 and is allowed to participate.</p> <p>http://maindb.unfccc.int/public/country.pl?country=IN</p> <p>PP need to provide the Host country DNA approval letter for the proposed CDM project.</p>	<p>CAR 01</p> <p>HCA provided by PP. CAR 01 closed.</p>
The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above	VVM Para. 49/54	Letter of approval is unconditional	Y

Requirement	Reference	Comments	Conclusion/C ARs/ CLs
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 PDD was uploaded on following website for global stakeholder process: http://cdm.unfccc.int/Projects/Validation/DB/6JOXFNL9K39YJRLEJ3Q76Y9E790OWR/view.html Starting date :- 20/06/2007 Closing date:- 19/07/2007 Number of comments received: 05 Due to expire of earlier version of methodology PDD re web hosted for global stakeholder process on following website: http://cdm.unfccc.int/Projects/Validation/DB/4AP19LUQTLVLDL6HU2J0B5K1ZAI09BT/view.html Starting date :- 23/05/2008 Closing date: 21/06/2008 Number of comments received: 0	Y
3. The project design document is in accordance with the applicable CDM requirements for completing PDDs.	VVM Para. 57 Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The PDD is in conformance with the UNFCCC SSC PDD format	Y
4. 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	PP submitted the MOC letter.	Y

Table 2 PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	VVM Para.56 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	6 MW Biomass based power project in Assam by BEPL and the title is unique.	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	This is the version 1 of the PDD, dated 01/06/2007	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	Technical description along with details of the project activity is to be incorporated in section A.4.	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	SV	Information provide clear understanding of the proposed CDM activity	Y
A.2.3. Is all information provided consistent and in compliance with the	VVM Para.64 PDD section A.2	DR	all information provided consistent and in compliance with the actual situation or planning	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
actual situation or planning?	see also A.4, A.4.2 and B.3			
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	All figures and facts provided and mentioned in PDD is consistent.	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	Yes, the project participant correctly applied the required table. Name of the PP is Badarpur Energy Pvt. Ltd.	Y
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	Annex 1 provides the correct information	Y
A.4. Technical Description of the Project Activity				
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)? Are the latitude and longitude of the site indicated (decimal	VVM Para.64 PDD section A.4	DR	The project location is not clearly mentioned in the PDD The project activity is located in India /Assam. Karimganj : Longitude: 92°15' and 92°35' E Latitude : 24°15' and 25°55' N	CL 03 Y Detail location is mentioned. CL 03 was closed out

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
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	PP needs to submit undertaking no change in technology during the crediting period. The proposed CDM project is not involve the alteration of existing installations or process	CL 04 Y Undertaking is submitted. CL 04 was closed out.
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	Need to be checked during Site visit	Site visit Y
A.4.4. Is the category (ies) of the project activity correctly identified?	VVM Para.64 PDD section A.4	DR	The PDD mentioned that the proposed CDM project activity falls under scetoral scope 01, type – I, and project category is I.C Thermal Energy for the user with or without electricity.	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	To be checked during the site visit.	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	The table for emission reduction calculations correctly applied.	Y
A.5. Debundling				
A.5.1. Is the small-scale	VVM Para. 134c	SV	The PDD mentions that the project proponent does not have any other registered or	Site visit

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
project activity a debundled component of a large scale project activity			applied for registration CDM project activity in the 1 km area from the present project activity by same project participant within 2 years in same project category and technology. The same will be checked during the site visit.	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	SV	The project activity is not a de-bundled project activity as mentioned in the PDD. The same needs to be checked during the site visit.	Site visit 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	There is no public funding used in the project activity .The declaration letter for no ODA diversion has to be provided by PP during site visit	LAC/Site visit 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	Annex 2 of PDD says that no public funding has been used in the project activity.	Y
A.6.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development	PDD section A.4.4	DR	Declaration of no diversion has to be provided by PP.	LAC/Site visit Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
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	Project participant has used AMS I.C, which is an approved simplified methodology.	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 methodology AMS I.C has been applied correctly without any alteration from the original version.	Y
B.1.3. Does the project activity qualify as small scale project?	VVM Para. 134a	DR	The proposed CDM project activity is Type I: The capacity of the proposed project activity is 6 MW which dose not exceeds 15 MW. Same need to be verified from the name plate data/ technical specification data during the site visit.	Site visit 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 PDD mentioned the category of the project activity which has been correctly identified in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities.	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	PDD, section A.4.2. Discuss the applicability of the simplified methodology AMS I C, version 13. The proposed CDM project activity will generate electricity using biomass capacity of the project activity is below 45 MW thermal (25.4 MWthermal <45 MWthermal). Hence, the project applicability has been justified.	Y
B.1.6. Does the project activity conform to one of the approved small-scale categories?	VVM Para. 134b	DR	The proposed project activity confirm to AMS I C, under sectoral scope -01(Thermal Energy for the user with or without electricity) and justification for the applicability criteria has been mentioned in the PDD.	Y
B.1.7. Is the project activity a bundle of several small scale activities and if so does it contain any sub-bundles?		SV	The project activity is not a bundle of several small scale activities as per PDD. However, this is checked during site visit.	Site visit 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		SV	The same is checked during site visit.	Site visit Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
B.1.9. If the project activity is a bundle of several small scale activities, has the form with information related to the bundle been submitted and is it correctly used		SV	The same is checked during site visit.	Site visit. Y
B.1.10. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVM Para.75/66b/68 PDD section B (B.1-B.2)	SV	The PDD discuss all the applicability criteria of the applied methodology ANS I C, version 13, in relation to the proposed CDM project activity and provide the justification. However, the applicability criteria for the project activity need to be checked during the site visit.	Site visit. 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	VVM Para.79/76 /67a PDD section B.3	DR	Project boundary diagram mentioned in section B.3 is not clear. Net power is mentioned outside project boundary which is supposed to be a part of project boundary.	CAR # 12 Y CAR # 12 Closed.

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
are expected to 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	Not applicable	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	Subject to closer of pending CAR #12	Pending CAR 12 Y CAR 12 closed
B.2.4. Are the project's geographical boundaries and the project's system boundaries (components and facilities used to mitigate GHGs) clearly	VVM Para.76/79 PDD section B.3 also see section A.4.2	DR	Subject to closer of pending CAR #12	Pending CAR 12 Y CAR 12 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
defined?				
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	The identification of most likely baseline has been discussed in the PDD. The baseline selected is coal based power plant, but the prevailing baseline scenario was electricity from grid, kindly clarify and provide evidence that the baseline would be coal based power plant	CAR #8 Y CAR #8 closed
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	Pending CAR #8	CAR #8 Y CAR #8 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
B.3.3. Is the choice of the baseline compatible with the available data?	VVM Para.86b-c/95 PDD Section B.4/B.5	DR	This baseline is compatible with the available data.	Y
B.3.4. Is conservativeness addressed in the way of identifying the baseline?	VVM Para.90 PDD Section B.4/B.5	DR	The conservativeness is addressed for baseline selection.	Y
B.3.5. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	VVM Para.90/91 PDD Section B.4/B.5	DR	The selected baseline is the most likely alternative 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 scenario is verified.	Y
B.4. Additionality				
B.4.1. Does the PDD clearly demonstrate the additionality using the	VVM Para.67d/95 PDD Section	DR	The PDD in section .B.5. address the additionality as per the methodology.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
approach as specified in the methodology and by following all the required steps?	B.1/B.4/B.5			
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	PP has not used any Additionality tools.	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	PP needs to submit all evidences for the cost comparison.	CAR #11 Y CAR #11 closed.
B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project? If the project activity	VVM Para.102b PDD Section B.5	DR	Please justify the delay in preparation of PDD and submission of the same for validation with documentary evidences	CAR #11 Y CAR #11 closed.

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
start date is prior to the validation is it discussed how the CDM was taken into account in the decision to go ahead with the project activity				
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	Not applicable	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	Not applicable	Y

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	<p>A) Please provide the documentary evidence for serious CDM consideration by the project participant for the project activity.</p> <p>B) Investment barrier Raw Material Price and cost of generation to be justified. IRR calculation to be provided</p> <p>C) Technological Barrier Appropriate evidence supporting to barrier needs to be submitted by project participant</p> <p>D) Other Barriers Evidences needs to be submitted to justify other barriers</p>	CAR #11 CAR #11 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	The discussion on additionality is based on a comparison with realistic and credible alternatives which is the installation of the coal based power plant. Subject to closer of pending CAR #11	Pending CAR #11 Y CAR #11 closed
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	Pending CAR #11	Pending CAR #11 Y CAR #11 closed

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	Pending CAR #11	Pending CAR #11 Y CAR #11 closed
B.4.11. What are they 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	Pending CAR #11	Pending CAR #11 Y CAR #11 closed
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	The methodology AMS I C, version 13, has been applied correctly for determining the baseline emission but is not clear how the para 19 – 23 of the methodology AMS I C version 13 has been taken into consideration for the project activity	CAR #8 Y CAR #8 closed
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	Pending CAR #8	CAR #8 Y CAR #8 closed
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	Project participant needs to demonstrate the attachment C of appendix B for the biomass availability in the region	CAR 09 Y Surplus biomass is demonstrate

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
				d CAR 09 closed.
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	Pending CAR #8	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	The PDD has described the methodological choices as per applied methodology AMS I C, version 13.	Y
B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	PDD Sections B.5-C	DR	Pending CAR #8	Pending CAR #8 Y closed
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 data provided are in compliance with the methodology.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
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	All the data is derived from official data sources or replicable records and have these been correctly quoted.	Y
B.6.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	The vintage of the baseline data is correct	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, PP has applied all the data appropriately and correctly to the CDM project activity.	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		Yes data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately assessed conservatively	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	Excel sheet/ worksheet required for CERs calculation to ascertain that the emission reductions determined are in accordance with the methodology described.	CAR #8 CAR #8 closed
B.7.2. Are the emission	VVM Para. 91e	DR	Pending CAR #8	Pending

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
reduction calculations documented in a complete and transparent manner?	PDD Section B.6			Y closed
B.7.3. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	PDD Section B.6	DR	Pending CAR #8	Pending Y closed
B.7.4. Is the calculation of the emission reduction correct?	VVM Para. 91e PDD Section B.6	DR	Pending CAR #8	Pending Y closed
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	Table required for the indication of projected emission reductions applied correctly	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 same needs to be discussed during the site visit	Site visit Y
B.9. Monitoring Methodology				
B.9.1. Does the monitoring	VVM Para.	DR	The monitoring methodology has been applied correctly in representing all the	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
<p>methodology provide a consistent approach in the context of all 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>	<p>67e PDD Section B.7- B.8 see also Annex 4</p>		parameters to be monitored.	
<p>B.9.2. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?</p>	<p>PDD Sections B and C</p>	<p>DR</p>	<p>The monitoring plan has been applied correctly for monitoring of both project and baseline emission.</p>	<p>Y</p>
B.10. Data and Parameters Monitored				
<p>B.10.1. Does the monitoring plan in the PDD comply with the simplified methodology? Provide for the collection and archiving of all relevant</p>	<p>VVM Para. 91a/91d/121/79 PDD Section B.7- B.7.2</p>	<p>DR</p>	<p>the monitoring plan in the PDD comply with the simplified methodology</p>	<p>Y</p>

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?				
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	Not applicable	Y
B.10.3. Will it be possible to determine the specified project GHG indicators?	PDD Section B.6.2-B.8	DR	Not applicable	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	All the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan	Y
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	PDD Section B.6.2-B.7.1	DR	Yes 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	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
biases or intended or unintended changes in data records?				
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	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	Formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology	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	PP needs to submit QA/QC procedure The QA/QC procedures as mentioned in section B.7.1, B.7.2 and Annex 4 are found to be inline.	CL 05 Y CL 05 closed
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	There is less uncertainty levels for the parameters as the instruments are calibrated.	Y
B.11.3. Are quality control	VVM Para 121	DR	PP needs to submit QA/QC procedure	Pending CL

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?				05 Y CL 05 closed
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 or internal reference standards.	Y
B.11.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions?	VVM Para. 19	DR	The data provision will be free of potential conflicts of interests.	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	The authority and responsibility of project management has been clearly described in the PDD.	Y
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD Section B.8/Annex 1	DR	Annex 1 of PDD describes it.	Y
B.12.3. Are procedures identified for training of monitoring personnel?	PDD Section B.8/Annex 1	DR	The QA/QC procedure has not mentioned and training requirement is not discussed. The training of the monitoring personnel has been mentioned in section B.7.2. The	Pending CL 05

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
			detail procedure is mentioned in the PDD.	Y CL 05 was closed
B.13. Monitoring Plan (Annex 4)				
B.13.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	VVM Para. 122a	DR	The monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity.	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	The monitoring plan completely describes all measures to be implemented for monitoring all parameter required	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	The monitoring plan provide information on monitoring equipment and respective positioning	Y
B.13.4. Are procedures identified for calibration of monitoring	VVM Para. 122a-c	DR	Project participant need to provide copies of calibration certificates for the equipments used for measurement purpose	CAR #13 Y CAR #13

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
equipment?				closed
B.13.5. Are procedures identified for maintenance of monitoring equipment and installations?	VVM Para. 122a-c	DR	The maintenance and installation of monitoring equipments need to be checked during site visit	Site visit Y
B.13.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	VVM Para. 122a-c	DR	The data is monitored on day to day and monthly basis by the plant officials and the data has been archived in paper and/ or electronic form.	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	This need to be checked during site visit.	Site visit Y
B.13.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	VVM Para.122a-c	DR	PDD mentioned about procedures for internal audits. This need to be checked during site visit.	Site visit Y
B.13.9. Are procedures	VVM Para.	DR	This need to be checked during site visit.	Site visit

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
identified for project performance reviews before data is submitted for verification, internally or externally?	122a-c			Y
B.13.10. Describe the ability of the project participants to implement the monitoring plan.	VVM Para. 122c	DR	Subject to closer of pending CAR and CLs	Pending Y closed
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 completion of the baseline determination is 01/05/2007	Y
B.14.2. Is this consistent with the time line of the PDD history?	Also see revision history of the PDD	DR	This is consistent with the time line of the 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	All data required is provided in a complete manner by annex 3 of the 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	The evidence for the start date has not submitted. Yes the project start date is 10/06/2005 and the operational lifetime is 20 years .This is as per para 67 of EB 41.	CAR 06 Y Evidence is provided CAR 06 was closed.

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
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 selected for the project activity and it is reasonable. The date of the crediting period is not appropriate	CAR 7 Y Appropriate date is mentioned. CAR 07 closed out
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	The project operational life is expected to be 20 years which exceed the crediting period of 10 years.	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	The start date of the project activity 10/06/2005 which is before 2nd August 2008 and thus it is a pre –existing project activity.	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	Copy of Notification required that EIA is required by Host party.	CAR #10 Y CAR #10 Closed.
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently	VVM Para. 131	DR	Pending CAR #10	Pending CAR 10 Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
described?	PDD section D			CAR #10 Closed.
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	Pending CAR #10	Pending Y CAR #10 Closed.
D.1.4. Will the project create any adverse environmental effects?	VVM Para. 131 PDD section D	DR	Project will not create any adverse impacts	Y
D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVM Para. 131 PDD section D	DR	There are no transboundary effects from the project activity.	Y
D.1.6. Have identified environmental impacts been addressed in the project design?	VVM Para. 131 PDD section D	DR	The environmental effects have been addressed in the PDD.	Y
E. Stakeholder Comments				
E.1.1. Have relevant stakeholders been consulted?	VVM Para. 128a PDD Section E.1	SV	The PDD mentions that office bearer; residents of neighboring villages, suppliers, representative of APCB, transporters local employ and local NGOs have been selected as the stakeholders, to be checked during the site visit. Proof/Attendance Sheet of the stake holder Consultation Meeting is required to ascertain relevant stakeholders were consulted	CAR #2 Y CAR #2 Closed.
E.1.2. Have appropriate media been used to invite	VVM Para.	DR	Medium of communication used for stakeholder consultation needs to be clarified along with documentary evidence.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion / CARs/CLs
comments by local stakeholders?	128a PDD Section E.1			
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVM Para. 128b PDD Section E.1	SV	Stakeholder consultation is not required by host country regulation; however the project proponent has carried the same as a part of CDM requirements. The same would be checked during the site visit.	Site visit Y
E.1.4. Is a summary of the stakeholder comments received provided?	VVM Para. 128b PDD Section E.2	SV	Kindly provided the MoM of stakeholders meeting.	CAR #2 Y CAR #2 Closed.
E.1.5. Has due account been taken of any stakeholder comments received?	VVM Para. 128b PDD Section E.3	SV	PDD mentioned that all the queries of the local people were answered to their satisfaction and the project was signaled with positive response. This need to be checked during site visit.	Site visit Y

References

Reference ID	Title / Description	Comments
/3/	PDD version 01,dated 01/06/2007	this version was published for the international stakeholder consultation
/4/	PDD version 1.1,dated 14/05/2008	this version was republished for the international stakeholder consultation due to expire of earlier version of methodology
/3/	Revised PDD version 1.2,dated 05/01/2009	Final version of the PDD submitted along with request for registration
/4/	Board resolution dated 01/06/2005	Board resolution for CDM consideration
/5/	Stakeholders consultation meeting dated 28/12/2006,30/12/2006 and 15/01/2007	Local stakeholder consultation documents
/6/	Biomass suppliers letter, dated 05/10/2004	Availability of biomass
/7/	Host Country Approval, dated 15/05/2007(F.NO-4/3/2007-CCC)	Letter of Approval from Host country
/9/	MOC, dated 30/04/2009	Modalities of communication document
/8/	Turbine PG Test report, dated 30/04/2004(ref:Rew/8430/Fbd)	Evidence against turbine efficiency
/10/	No ODA undertaking ,dated 17/07/2007	No ODA confirmation
/11/	Financial Analysis Excel sheet, dated 28/01/2009	Investment analysis sheet
/12/	EIA notification by MoEF, dated 27/01/1994	Evidence for No EIA required for this project activity
/13/	Consent to operate from 01/04/ 2007to 31/03/2008(Ref:NO/WB/2-II/T-1771/06-07/215/541)	Consent to operate
/14/	Coal bill, dated 09/04/2004 (Ref: Bill No. G.C.J/19/04-05), Invoice of the Hitech International Traders dated 11/05/2005	Evidence for cost of coal
/15/	Acceptance letter by PP regarding CDM consultancy, dated 22/02/2005 (Ref:Proposal:EVI/BPPL/CDM/01/21-Feb-2005)	Consultant appointment for project
/16/	Application for consent renewal for year 2008-09,dated 29/03/2008(Ref:BEPL/PCB/2008-09/01)	Renewal for consent to operate
/17/	Purchase order for turbines, dated 08/06/2005	Turbine specifications and evidence for start date of the project activity

Reference ID	Title / Description	Comments
/18/	Memorandum of Understanding between BEPL and BVCL, dated 15/12/2005	MoU for power purchase
/19/	schedule XIV of IT Act for depreciation rate	Evidence for depreciation considered in Project activity financial analysis
/20/	Detail Project Report prepared by DSCL ENERGY SERVICES, dated 08/07/2005	DPR for project activity
/21/	Copies of mails regarding to CDM consideration	Chronology of events for CDM consideration
/22/	The research paper by Progress in Energy and combustion Science (published in Elsevier Science dated 28/01/2000 for technological barrier	Checked for technology barriers for project activity
/23/	Undertaking by PP regarding to no change in technology during crediting period	Checked for the undertaking for no change in technology during crediting period.
/24/	Purchase order for boiler dated 10/06/2005	Evidence for boiler specifications
/25/	A html web page for the Coal quality in Assam	-Checked for the coal quality in Assam

A.3 Annex 3: Overview of Findings

Findings Overview

Findings from validation of **6 MW Biomass based power project in Assam by BEPL**

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified and irrespective of the nature of the findings, for eg.: CAR #1, CAR #2, CL #3, FAR #4 etc.

Description of Table:

Type	Findings are either Corrective Action Requests (CARs), Clarification Requests (CLs), and Forward Action Request (FARs). A corrective action request (CAR) is raised if one of the following occurs: <ol style="list-style-type: none"> I. The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions; II. The CDM requirements have not been met; III. There is a risk that emission reductions cannot be monitored or calculated. A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met A forward action request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.
Lead Assessor Comments	Details the content of the finding
Ref	Refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

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

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

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

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

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

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	10	3	1

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CAR	Number:	01	Reference:	1.3
Lead Assessor Comment:				Date: 17/07/2007	
Letter of acceptance (LoA) from host country for the project activity was not provided by the project proponent. Please provide LoA from Indian DNA for the project activity.					
Project Participant Response:				Date: 18/07/2007	
Letter of Approval has been received for the project activity dated 15/02/2007. Copy of the same is provided to DOE.					
Documentation Provided by Project Participant:					
HCA for the project activity reference no 4/3/2007 –CCC dated 15/02/2007					
Information Verified by Lead Assessor:					
The letter (reference number 4/3/2007-CCC) has been submitted and verified. The name on the HCA is the same as mentioned in the section A.1 of the PDD					
Reasoning for not Acceptance or Acceptance and Close Out:					
The letter (reference number 4/3/2007-CCC) dated 15/02/2007 has been submitted and verified. The name of the project title and project participant on the HCA is the same as mentioned in the section A.1 of the PDD. Thus CAR 01 was closed.					
Acceptance and Close out by Lead Assessor:				Date: 06/08/2007	

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CAR	Number:	02	Reference:	E.1.2
Lead Assessor Comment:				Date: 17/07/2007	
Section E.2 of the PDD mentions some of the positive impacts of the project activity. It is not clear whether the positive impacts mentioned is extract of the comments received from the local stakeholders or it is project proponent's view about the project activity. Please rephrase the paragraph.					
Project Participant Response:				Date: 18/07/2007	
It is both as perceived by PP and also by the stakeholders consulted. Copies of stakeholder consultation carried out for the project activity are provided to DOE.					
Documentation Provided by Project Participant:					
Not applicable					
Information Verified by Lead Assessor:					
Not applicable					
Reasoning for not Acceptance or Acceptance and Close Out:					
Kindly provide the summary of stakeholder comment. CAR #2 is open					
Project Participant Response:				Date: 07/08/2007	
Summary of stakeholder comments is part of PDD submitted earlier (please refer section E.2). Documents pertaining to stakeholder consultation meetings held are provided.					
Documentation Provided by Project Participant:					
Local stakeholder consultation documents					
Information Verified by Lead Assessor:					

The project proponent has submitted the copy of discussions with individual stakeholders; the same was cross-checked by the validation team during the site visit and documentation provided in support to local stakeholder consultation was accepted. PP has also provided a scan copy of communication with Mr. Ashish Dey, Secretary Gharoa (NGO) on 05/08/2005. PP also got a letter of endorsement from Rotary Club of Badarpur on 05/10/2005. No Objection Certificate (NOC) was also received from Office of the Chairman – Badarpur Town Committee on 08/10/2005.	
Reasoning for not Acceptance or Acceptance and Close Out:	
Submitted the copy of discussions with individual stakeholders and communication with Mr. Ashish Dey, Secretary Gharoa (NGO) and the NOC from office of the chairman Badarpur Town committee and letter of endorsement from Rotary club of Badarpur were cross checked during the validation site visit and found accepted. There were no negative comments observed during stakeholders consultation. Thus CAR 02 was closed.	
Acceptance and Close out by Lead Assessor:	Date: 06/08/2007

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CL	Number:	03	Reference:	A.4.1
Lead Assessor Comment:				Date: 17/07/2007	
The PDD address all the specific requirements under each header. Except section A.4.1.4. where it is required to mention distance of the project activity from the nearest Airport, Railway station, National Highway and Town/City.					
Project Participant Response:				Date: 18/07/2007	
The relevant information has been included in revised PDD.					
Documentation Provided by Project Participant:					
Revised PDD					
Information Verified by Lead Assessor:					
The revised PDD mentions the same under the section A.4.1.4					
Reasoning for not Acceptance or Acceptance and Close Out:					
The revised PDD mentions the exact location for the project activity under the section A.4.1. Thus CL 03 was closed.					
Acceptance and Close out by Lead Assessor:				Date: 06/08/2007	

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CL	Number:	04	Reference:	A.4.7
Lead Assessor Comment:				Date: 17/07/2007	
Project proponent need to provide undertaking that the project technology used for the project activity will not substituted by other or more efficient technologies during the crediting period.					
Project Participant Response:				Date: 18/07/2007	
Undertaking to this effect is provided to DOE.					
Documentation Provided by Project Participant:					
Letter of undertaking for no change in technology					
Information Verified by Lead Assessor:					

The project proponent has submitted A letter of undertaking which states that the technology employed for the project activity would not be changed during the crediting period	
Reasoning for not Acceptance or Acceptance and Close Out:	
The project proponent has submitted A letter of undertaking which states that the technology employed for the project activity would not be changed during the crediting period. Thus CL 04 was closed	
Acceptance and Close out by Lead Assessor:	Date: 06/08/2007

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CL	Number:	05	Reference:	A.4.9
Lead Assessor Comment:				Date: 17/07/2007	
PDD does not mention about training requirement or responsible party for the training for the project activity.					
Project Participant Response:				Date: 18/07/2007	
The plant would be commissioned in year 2008. Trained and experience people would be working in the plant for safe operation and maintenance of the plant & machinery.					
Documentation Provided by Project Participant:					
Not applicable					
Information Verified by Lead Assessor:					
Project participant explained that after commissioning of plant trained and experienced people will work for safe operation and maintenance of the plant & machinery					
Reasoning for not Acceptance or Acceptance and Close Out:					
Project participant needs to mention the clarification about training requirement in PDD					
Project Participant Response:				Date: 04/09/2008	
Included. Refer section B.7.2					
Documentation Provided by Project Participant:					
Revised PDD					
Information Verified by Lead Assessor:					
The revised PDD has been checked and the same was mentioned under the section B.7.2					
Reasoning for not Acceptance or Acceptance and Close Out:					
The revised PDD has been checked and the monitoring procedure with training was mentioned under the section B.7.2 and is acceptable. The project activity is commissioned in April 2008. Thus CL 05 was closed					
Acceptance and Close out by Lead Assessor:				Date: 28/09/2008	

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CAR	Number:	06	Reference:	B.14.2
Lead Assessor Comment:				Date: 17/07/2007	
Project activity starting date is defined as 08/01/2006 in the PDD section C.1.1. Evidence for the same is required to provide.					

Project Participant Response:	Date: 18/07/2007
The project start date has been revised for the date of Purchase Order of machinery installed in the project activity. Revised date is 08/06/2005 as the date of purchase order for turbine. Copy of same is provided to DOE during site visit.	
Documentation Provided by Project Participant:	
Purchase order for turbine, dated 08/06/2005	
Information Verified by Lead Assessor:	
Project proponent has submitted the copy of purchase order for turbine which mentions the date as 08/06/2005 which is the start date as mentioned in the revised PDD	
Reasoning for not Acceptance or Acceptance and Close Out:	
Purchase order for boiler was placed on 08/06/2005 which is the earliest action for the project activity and considered as start date of the project activity as per glossary of terms given in para 67 of EB 41. Thus CAR 06 was closed.	
Acceptance and Close out by Lead Assessor:	Date: 28/09/2008

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CAR	Number:	07	Reference:	C.1.1
Lead Assessor Comment:				Date: 17/07/2007	
Fixed crediting period of 10 years is selected from 01/09/2007. Based on the time schedule of the project activity it is suggested to put some realistic date.					
Project Participant Response:				Date: 18/07/2007	
The crediting period start date is rescheduled to 01/10/2007 in revised PDD.					
Documentation Provided by Project Participant:					
Revised PDD					
Information Verified by Lead Assessor:					
Start date of crediting period is revised as 01/10/2007					
Reasoning for not Acceptance or Acceptance and Close Out:					
Start date of crediting period is revised as 01/10/2007 but same needs to be revised again and required to mention the date two months from now. Thus CAR #7 is open					
Project Participant Response:				Date: 07/08/2007	
Date is revised to 01/12/2007					
Documentation Provided by Project Participant:					
Revised PDD					
Information Verified by Lead Assessor:					
The date mentioned in the revised PDD is 01/12/2007.					
Reasoning for not Acceptance or Acceptance and Close Out:					
Kindly mention a future date near to registration date (<u>exact date or registration date whichever is later</u>) CAR #7 is open.					

Project Participant Response:	Date: 28/11/2008
The date has been revised considering the probable time validation completion would take.	
Documentation Provided by Project Participant:	
Revised PDD	
Information Verified by Lead Assessor:	
Crediting period start date has been changed as 01/01/2010 or after the registration with CDM EB.	
Reasoning for not Acceptance or Acceptance and Close Out:	
Proposed date for start of crediting period is acceptable.	
Thus CAR 07 was closed.	
Acceptance and Close out by Lead Assessor:	Date: 13/03/2009

Date:	17/07/2007		Raised by:	Vikrant Badve	
Type:	08	Number:	CAR	Reference:	B.5.1
Lead Assessor Comment:				Date: 17/07/2007	
Provide yearly emission reductions calculation spreadsheet for baseline					
Project Participant Response:				Date: 18/07/2007	
Excel worksheets explaining calculations of baseline emission, project emissions and CER estimation is provided to DOE.					
Documentation Provided by Project Participant:					
Emission reduction excel sheet					
Information Verified by Lead Assessor:					
The excel sheet “Estimation of CER” is not clear.					
Reasoning for not Acceptance or Acceptance and Close Out:					
The excel sheet “Estimation of CER” is not clear. CAR #8 is open.					
Project Participant Response:				Date: 07/08/2007	
Revised estimation sheet is provided.					
Documentation Provided by Project Participant:					
Revised Emission reduction excel sheet					
Information Verified by Lead Assessor:					
Emission reduction sheet not clear. Estimated emission reduction value in excel sheet does not matches with the same mentioned in PDD					
Reasoning for not Acceptance or Acceptance and Close Out:					
Revised emission reduction excel sheet is not acceptable					
The baseline selected is coal based power plant, but the prevailing baseline scenario was electricity from grid, kindly clarify and provide evidence that the baseline would be coal based power plant. Kindly clarify how the para 19 – 23 of the methodology AMS I C version 13 has been taken into consideration for the project activity. CAR #8 is open					
Project Participant Response:				Date: 04/09/2008	

<p>As the power situation is erratic in the state, PP considered putting up a power plant which could meet the power requirement of the cement plant of the group company. Now the options available to the group were either to go for a coal based power plant or to go for biomass fired one. Based on the economics of the two, though coal based option was found to be more attractive, PP decided to do the project activity due to the availability of CDM benefit to the project. Detailed analysis is provided in the PDD of this fact as part of the additionality test in section B.5.</p> <p>Para 19: All types of fuels including biomass and fossil fuels that can be used are part of PDD monitoring plan. Project emissions shall be calculated based on fossil fuel combustion. Please refer B.7.1 for data to be monitored. Also section B.6.1 may be referred to for formula used for project emission estimations.</p> <p>Para 20: The project activity envisages use of rice husk in the project activity and the specific biomass consumption for the biomass comes out to be 1.45 kg/ kWh. The same is estimated in the excel sheet provided to DOE. The same value shall be used to arrive at the power generation which would eventually be used in emission reduction estimations as per para 23 of methodology</p> <p>Para 21: As the fossil fuel consumed, if any, in the project activity is being considered part of project emissions, segregation of energy output for the fossil fuel part would not be required.</p> <p>Para 22: All types of fuels shall be monitored as detailed out in the monitoring plan.</p> <p>Para 23: Each year this can be validated and accordingly the conservative figure can be used for estimation of emission reductions.</p>	
Documentation Provided by Project Participant:	
Revised PDD	
Information Verified by Lead Assessor:	
Section B.4 of the revised PDD has been checked in view of project participant response	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>PP is requested to provide evidence reg. the decision of setting up a coal based power plant and efforts done for the same in absence of the project activity in view of the pre-project scenario of taking power from grid. The explanation given by PP in regard with the applicability of para 19 to 23 of meth AMS I C is acceptable but section B.6 of the PDD is not inline with the same. As per the methodology the specific fuel consumption of all types of fuels needs to be fixed ex-ante during the validation and consumption of each type of biomass and fossil fuel shall be monitored. Clarification is required in PDD section B.6 on how emission reductions were calculated in view of para 19 – 23 of meth.</p> <p>CAR #8 is open.</p>	
Project Participant Response:	Date: 28/11/2008
<p>PP had the option of putting up a coal fired power plant as the coal is available in the region in abundance than biomass residues. Same has been elaborated through analysis in the PDD.</p> <p>PP has included the specific energy consumption in the baseline and not the specific fuel consumption considering a recent clarification from SSC WG in its WG meeting 17. The details are as below –</p> <p>The SSC WG agreed to provide clarifications as below:</p> <p>Query 1: Requirement of <i>ex ante</i> determination of Specific Fuel Consumption</p> <p>The SSCWG agreed that it is appropriate to specify the specific fuel consumption used in the <i>ex ante</i> determination of Specific Fuel Consumption in fuel energy per unit energy generated (Kcal/KWh) rather than the current approach in the methodology which is in terms of fuel mass quantity per unit of energy generated (tonne of fuel/KWh). This is in line with the argument of the author of the submission that: Specific fuel consumption is a quantitative parameter that may vary with change in the quality (e.g. NCV) of the fuel used at different times in the project activity and thus it is more appropriate to take Specific Energy Consumption (e.g. heat rate of the power generating unit, KCal/KWh) instead of taking Specific Fuel Consumption (tonne/KWh), which in turn is a measure of efficiency.</p> <p>This can be reached at http://cdm.unfccc.int/UserManagement/FileStorage/AM_CLAR_CZP1QQIB765IY7ITI0J6OXEF4KOWDF</p>	
Documentation Provided by Project Participant:	

Revised PDD dated 26/11/08 Section B.6.2 clarification provided on <i>ex ante</i> determination of specific fuel consumption by SSC WG	
Information Verified by Lead Assessor:	
Clarification provided is verified with methodology reference to specific fuel consumption.	
Reasoning for not Acceptance or Acceptance and Close Out:	
Project participant need to clarify the conservativeness of heat rate (Heat rate design and heat rate actual) as per the clarification provided and same need to incorporate in PDD. Please provide the source for design heat rate 3386 kCal/kWh Project participant need to clarify why the NCV of biomass has not been incorporated in monitoring plan. Thus CAR #8 is open	
Project Participant Response:	Date: 12/01/2009
The heat rate has been calculated based on the design values of quantity of steam and steam quality required for generation of power at rated capacity of 6MW. It may be noted that, boiler efficiency is considered at 100% which is the most conservative. This heat rate shall be compared each year with actual plant heat rate and the value leading to lower value of emission reduction shall be used. The actual plant heat rate shall be calculated based on actual gross power generation and fuel energy input (based on quantity and calorific value of all biomass combusted). In the monitoring plan, PP had already included monitoring of quantity of biomass used. Besides, calorific value of biomass shall also be monitored and same has been included in the revised monitoring plan. In case actual heat rate is more than the design heat rate then actual power generation in the project activity shall be considered for emission reduction calculations. In case actual heat rate is less than the design heat rate which also means that the project plant performs better than the design, then power generation shall be corrected for design heat rate. This shall be done multiplying the actual power generation with the correction factor. Correction factor shall be the ratio of actual heat rate to design heat rate. The same has been included in the section B.7.1 of revised PDD.	
Documentation Provided by Project Participant:	
Revised PDD & revised excel file	
Information Verified by Lead Assessor:	
PP will be monitoring the actual heat rate of the system and the same is the parameter of the monitoring plan in the revised PDD section B.7.1. The design heat rate has been calculated from the boiler and turbine specifications. The boiler efficiency however has been assumed as 100% on conservative side. The NCV of biomass is the monitoring parameter of the revised monitoring plan of the revised PDD.	
Reasoning for not Acceptance or Acceptance and Close Out:	
The baseline & project emission sheet has been checked for the revised calculations along with revised PDD and found acceptable Thus CAR 08 was closed.	
Acceptance and Close out by Lead Assessor:	Date: 13/03/2009

Date:	17/07/2007		Raised by:	Vikrant Badve		
Type:	CAR	Number:	09		Reference:	B.5.3
Lead Assessor Comment:				Date: 17/07/2007		
Emission reduction on account of leakage was not considered.						
Evidence for leakage emissions need to check.						
Copy of 'Biomass assessment report' need to check for surplus availability of biomass in the project activity region.						
PDD does not mention monitoring of biomass transportation trips.						

Project Participant Response:	Date: 18/07/2007
<p>Leakage has been considered as per the "General guidance on leakage in biomass project activities, Version 02, EB 28". Details of the same are included in revised PDD.</p> <p>Moreover, the project is first such case in the state of Assam and biomass is available in surplus enough to support the project activity.</p> <p>Small Scale methodology AMS-IC does not require assessment of leakage on account of biomass transportation to the site as the leakage would be negligible.</p>	
Documentation Provided by Project Participant:	
Revised PDD	
Information Verified by Lead Assessor:	
<p>Leakage has been considered as per the "General guidance on leakage in biomass project activities, Version 02, EB 28". Details of the same are included in revised PDD</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>During the site visit it was observed that the turbines used in the project activity are not new and thus leakage due to transfer of turbines must be accounted as per the methodology AMS I C. Kindly provide the same.</p> <p>Kindly provide Biomass assessment report for the project activity.</p> <p>CAR #9 is open.</p>	
Project Participant Response:	Date: 07/08/2007
<p>Not required as per AMS IC.</p> <p>Biomass assessment report is provided.</p>	
Documentation Provided by Project Participant:	
Biomass assessment report dated 11/07/2007	
Information Verified by Lead Assessor:	
<p>The biomass assessment report submitted has been prepared by the project proponent and not from a third party or published source</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>The methodology paragraph clearly mentions that If the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered. Please justify.</p> <p>Please provide evidence that the turbine can deliver up to its capacity or 80% used for ER estimation.</p> <p>The biomass assessment report submitted has been prepared by the project proponent and not from a third party or published source, kindly clarify the same</p> <p>CAR #9 is open</p>	
Project Participant Response:	Date: 16/06/2008
<p>It was observed that the turbines at the time of transfer or purchase were not in operating condition. However the same is capable for performing with rated capacity.</p> <p>The turbines have been rolled and performance tests have been conducted by M/s Robarant Engineering Works Pvt. Ltd. The turbines are performing to their potential and achieved more than 99% of rated capacity. Report to this effect is submitted to DOE.</p> <p>Biomass assessment was carried out by Mr. Randhir Biswas & Associates. A biomass assessment study carried out by Ministry of New and Renewable Energy (erstwhile MNES) says that Assam state has a potential of ~165MW power generation (http://mnes.nic.in/biomass-atlas.htm). Largely the potential is untapped and this is one step in the right direction.</p>	
Documentation Provided by Project Participant:	
<p>Performance report for Robarant Engg. Works Pvt. Ltd</p> <p>Biomass assessment report</p>	
Information Verified by Lead Assessor:	

<p>PP has purchased the old turbines from the shipyard and these turbines are of no use at the time of transfer or purchase. Thus equipment is not transferred from any other project activity The Performance test reports have been checked, the capacity of the turbine mentioned does not match with the same mentioned in PDD. Biomass assessment report has been provided the same mentions that biomass available is sufficient for the plant to work for 367 days, the same would be monitored and checked during the verification and leakage would be assessed accordingly. The DPR prepared by DSCL has been also checked for the biomass availability.</p>	
<p>Reasoning for not Acceptance or Acceptance and Close Out:</p>	
<p>Biomass assessment report has been provided mentions that biomass available in the region is sufficient for the plant to work for the year, the same would be monitored and checked during the verification and leakage would be assessed accordingly during the monitoring period. The Performance test reports have been checked, the capacity of the turbine mentioned does not match with the same mentioned in PDD; kindly clarify the same along with the justification that the turbine lifetime exceeds the crediting period. The methodology paragraph mentions that If the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered. Please justify. CAR #9 is open.</p>	
<p>Project Participant Response:</p>	<p>Date: 04/09/2008</p>
<p>It was a typo error and corrected performance test report is provided to DOE.</p>	
<p>Documentation Provided by Project Participant:</p>	
<p>Revised PDD and corrected Turbine test report</p>	
<p>Information Verified by Lead Assessor:</p>	
<p>The revised document for turbine test was checked and accepted by DOE. The capacity mentioned in the revised document matches with the PDD. The same was also verified with M/s Robarant Engg. Works Pvt. Ltd.</p>	
<p>Reasoning for not Acceptance or Acceptance and Close Out:</p>	
<p>The turbine capacity and other details mentioned in test report and PDD are checked and found same. The authenticity of the test report was checked with the M/s Robarant Engg. Works Pvt. Ltd. and thus same was accepted. Please justify that the energy generating equipment is not transferred from another activity. Also the PDD did not incorporate the leakage on account of biomass non-availability and fossil fuel consumption in the project activity. The monitoring plan of the PDD includes biomass availability and fossil fuel consumption as monitoring parameters. CAR #9 is open.</p>	
<p>Project Participant Response:</p>	<p>Date: 28/11/2008</p>
<p>The boiler in the project activity is purchased from M/s Cogent Engineers Pvt. Ltd. The purchase order for the same is provided dated 10/06/2005. Similarly turbine is purchased from M/s Prakash Yantra Udyog Pvt. Ltd. and purchase order dated 10/06/2005 is provided to DOE. These are not transferred from any other activity.</p>	
<p>Documentation Provided by Project Participant:</p>	
<p>PDD.dated 16/09/08 version 1.2 Turbine purchase order dated 10/06/2005</p>	
<p>Information Verified by Lead Assessor:</p>	
<p>Turbine has been purchased from M/s Prakash Yantra Udyog Pvt. Ltd.</p>	
<p>Reasoning for not Acceptance or Acceptance and Close Out:</p>	
<p>The source of the density of diesel is not clear, please clarify it. The revised PDD mentioned that the equipments installed/ proposed in the project activity are not transferred from any other activity, however the project activity has older turbine and is transferred to project activity. Project participant need to mention the same in PDD with justification. Please clarify the source for the biomass quantity transported used for leakage calculation in the excel file. Thus CAR #9 is open</p>	

Project Participant Response:	Date: 12/01/2009
<p>Density of diesel is corrected to 0.86 kg/l (http://www.iocl.com/Products/DieselSpecifications.pdf)</p> <p>In the project activity, PP has procured the turbine from M/s Prakash Yantra Udyog Pvt. Ltd. The turbines have been tested for their performance and these are capable to run to their rated capacity. It is also stated that the equipment in the project activity shall not be replaced with more efficient equipments during the crediting period (Undertaking from the PP is provided). Performance test report is provided from M/s Raborant Engineering Works.</p> <p>More over, the emission reductions in the project activity are due to generation of power from biomass residues. In the event, project reaching better efficiency levels than estimated, methodology has the provision to restrict the emission reductions accounting for the design efficiency level.</p> <p>Biomass residues are available in abundance in the region and this surplus biomass residue shall be used in the project activity. Monitoring of availability of surplus biomass in the region is part of the monitoring plan too. DPR from DSCL energy is provided.</p>	
Documentation Provided by Project Participant:	
Performance test report of the turbine	
Information Verified by Lead Assessor:	
The information provided was verified with the IOCL website http://www.iocl.com/Products/DieselSpecifications.pdf . The information provided was verified with the performance test report of the turbine.	
Reasoning for not Acceptance or Acceptance and Close Out:	
The DPR from DSCL does not make clear that the quantity of available biomass in the region (e.g. 50 km radius), is at least 25% larger than the quantity of biomass that is utilised including the project activity. The CAR #9 is still open	
Project Participant Response:	Date: 28/01/2009
<p>PP got the assessment done to see whether there is enough biomass available in the region which is surplus and would be available to the proposed project. The figures indicate the availability of surplus biomass in the region substantially more than what is required for project. The detailed project report (page 9, Section 1.7) also suggests that there is availability of surplus biomass within 50 km radius good for 10MW power generation while the capacity of the proposed project is only 6 MW. Hence this meets the requirement of surplus biomass as mentioned.</p> <p>Moreover, PP has included the assessment of surplus availability of the biomass as part of the monitoring plan and provision for consideration of leakage has been made in case non-surplus biomass is used at any point of time during the crediting period.</p>	
Documentation Provided by Project Participant:	
Revised PDD version 1.2 dated 05/01/2009 Detail Project Report dated 08/07/2005	
Information Verified by Lead Assessor:	
<p>availability of surplus biomass within 50 km radius good for 10MW power generation this is verified through the Detail Project Report prepared by DSCL ENERGY SERVICES dated 08/07/2005</p> <p>Biomass availability is an monitoring parameter verified through section B.7.1 of revised PDD version 1.2</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>As per section B.7.1 of PDD version 1.2, it is mentioned that in the absence of publicly available reports on biomass availability in the region from state or central Government agencies and/ or other institutions of repute, BEPL would carry out its own assessment through in-house resources that is not acceptable as per EB28 Annex 35.</p> <p>The revised PDD version 1.2 dated 16/09/2008 mentioned that the equipments installed/ proposed in the project activity are not transferred from any other activity, however the project activity has older turbine and is transferred to project activity. Project participant need to mention the same in PDD with justification.</p> <p>CAR #9 is still open</p>	
Project Participant Response:	Date: 13/03/2009
Corresponding section in PDD is revised to remove "biomass assessment using internal resources".	

Documentation Provided by Project Participant:	
Revised PDD version 1.2	
Information Verified by Lead Assessor:	
In the absence of information from publicly available reports on biomass availability in the region from state or central Government agencies and/ or other institutions of repute, BEPL would carry out its own assessment through external experts	
Reasoning for not Acceptance or Acceptance and Close Out:	
There was no publicly available reports on biomass availability in the region from state or central Government agencies and/ or other institutions.. Biomass assessment data mentioned in the DSCL report is used to check the leakage test. This is found inline as per EB28 Annex 35, Attachment C of appendix B and is accepted. The report clearly mentioned that the available biomass is capable for 10 MW capacity power plants. As per General guidance on leakage in biomass project activities, version 03 (Annex 38 EB 47, para 18), the biomass assessment should be ex-ante and does not require to be monitor and is accepted. Thus CAR 09 was closed.	
Acceptance and Close out by Lead Assessor:	Date: 13/03/2009

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CAR	Number:	10	Reference:	D.1.2
Lead Assessor Comment:				Date: 17/07/2007	
EIA requirement by host Party is to be checked. Provide a copy of air and water monitoring report for project activity premise. Provide a copy of consent to operate and establish from Assam Pollution Control Board.					
Project Participant Response:				Date: 18/07/2007	
As per EIA notification of Central Pollution Control Board (CPCB), EIA is not required for the project activity. Consent to establish has been obtained and is provided to DOE. Consent to operate would be obtained as the project is commissioned (expected in year 2008)					
Documentation Provided by Project Participant:					
EIA notification, Consent to establish dated 17/10/2005					
Information Verified by Lead Assessor:					
The project proponent has submitted the copy of Consent to establish for the project activity. NOC from Assam Pollution control Board has also been submitted					
Reasoning for not Acceptance or Acceptance and Close Out:					
Project proponent has submitted the copy of Consent to establish for the project activity is acceptable NOC from Assam Pollution control Board has also been submitted that is found acceptable Kindly provide Consent to Operate and commissioning certificates for the plant. CAR #10 is open.					
Project Participant Response:				Date: 04/09/2008	
-Consent to operate is sought each year by PP from Pollution Control Board, Assam. First consent to operate was received for the year 2007-2008 which ended on 31 st March 2008. PP has now applied for the renewal of the consent from PCB on 29/03/2008, which can be verified during subsequent verifications. (PCB approval for 2007-08 and application for 2008-09 are submitted to DOE) -The turbine performance certificate is provided to DOE as proof of commissioning of turbines.					
Documentation Provided by Project Participant:					
Application for renewal of consent order for the year 2008-09, dated 29/03/2008					

Information Verified by Lead Assessor:	
The project proponent has submitted the copy of application for renewal of Consent to operate(for 2008-09) for the project activity	
Reasoning for not Acceptance or Acceptance and Close Out:	
The consent to operate can be checked during verification and Forwarded Action Request 1 is raised for the same. Thus CAR 10 was closed and FAR 14 was raised.	
Acceptance and Close out by Lead Assessor:	Date: 13/03/2009

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CAR	Number:	11	Reference:	B.4
Lead Assessor Comment:				Date: 17/07/2009	
The technological barrier and other barriers mention in the PDD are not clear. Evidence need to provide for the investment barrier and sensitivity analysis. Excel spreadsheet with all the assumptions will require providing to clear the additionality of the project activity.					
Project Participant Response:				Date: 18/07/2007	
Excel work sheet is provided explaining investment barrier with sensitivity analysis to DOE.					
Documentation Provided by Project Participant:					
Financial analysis sheet					
Information Verified by Lead Assessor:					
The PLF values does not match in the excel sheets; evidence is required for the PLF values used for calculations. Evidence is required for the total project cost for coal based power plant					
Reasoning for not Acceptance or Acceptance and Close Out:					
The PLF values does not match in the excel sheets; evidence is required for the PLF values used for calculations. Evidence is required for the total project cost for coal based power plant. The CER estimation sheet is not clear. CAR is open.					
Project Participant Response:				Date: 07/08/2007	
Revised sheet has corrected values. PLF values are assumed. Statement on project cost is provided. CER estimation sheet is revised and provided to DOE.					
Documentation Provided by Project Participant:					
Revised financial analysis sheet					
Information Verified by Lead Assessor:					
Evidence is required for the cost of coal mentioned in the excel sheet. Basis of PLF is needed					
Reasoning for not Acceptance or Acceptance and Close Out:					
Evidence is required for the cost of coal mentioned in the excel sheet. Evidence for PLF is required. CAR is open					
Project Participant Response:				Date: 20/09/2008	
Bill of coal purchase is provided to DOE for coal cost.					
Information Verified by Lead Assessor:					

The name of the client and supplier are clearly mentioned in coal bill No. G.C.J 19/04-05, Dated 09/04/04	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>CER estimation sheet is not cleared. Cost of coal mentioned in coal bill does not matches with the same provided in financial analysis sheet_170908 (Base data- coal) CDM consideration proof is required to be submitted. Evidence for PLF reference was not submitted. Comments for the sheet - Financial analysis BEPL160608</p> <ul style="list-style-type: none"> Data inconsistency between the sheets "Small scale" & "Baseline EF". Evidence is required for the price of biomass Evidence is required for the Depreciation rate used. <p>"Baseline EF sheet"</p> <ul style="list-style-type: none"> Power generation is not as per the provided Turbine PG test report Fuel input rate is required to be calculated based on the gross power generation. Biomass NCV uses the conversion value of 4.187 joules, kindly correct the same <p>CAR is open.</p>	
Project Participant Response:	Date: 04/09/2008
<p>-Another coal bill copy provided -CDM consideration proof: The project was conceptualised in the year 2005. PP consulted CDM advisors around that time and in Feb 2005, PP engaged one CDM advisor to do the CDM registration work for the project. Subsequently PO was raised for the boiler in June 2005 and subsequently for other equipments and services till late 2006. Simultaneously, PP filed the case with DNA (MoEF) for LoA in 2005. The case was presented before the DNA in the month Oct 2005. However, in the absence of PCB approval (though application was already with PCB, pending for approval) from local Assam Pollution Control Board, significant time elapsed. Later PP again submitted the documents to DNA and again presented the case in March 2007 and finally got LoA in May 2007. In parallel, PP called for proposals from DOE fro starting the validation procedures. SGS also submitted their proposal in Jan 2007. A contract was later signed with SGS to undertake the validation process. During this time, work on project implementation was going on and the plant was later commissioned in April 2008. It is evident that PP started the CDM registration process along with implementation of the project and this is evident from the documents being referred to. -‘Small Scale’ gives maximum boiler output to prove that it will not cross the small scale limit of 45 MW-th at anytime. Same has been estimated based on Boiler MCR of 32 TPH and 440 deg C. However in "Baseline EF", the calculation of baseline emissions, PP has considered the turbine steam requirement as 30 TPH and steam temperature at 430 deg C. It is transparent and conservative. -Evidence for the biomass rate is provided to DOE. In the financial analysis, PP has assumed a rate of Rs. 900/ MT. The biomass bills suggest that the rate is much higher than that. So, use of this biomass rate is more conservative and transparent. -Depreciation rate document is again provided to DOE. -Cost of equity has been assumed the same for both the cases i.e. baseline as well as project activity. Hence it does not make any difference to the results i.e. the biomass option is less viable compared to that of coal. -The baseline emission factor has been calculated for the rated capacity of turbine, which is conservative. Performance test certificate is to suggest that turbine can run close to the rated capacity. -Fuel input has been calculated based on steam requirement to generate 6MW power from the two turbines considering the boiler efficiency 100%, which is conservative. -Conversion factor taken now is 4.18, which is transparent and conservative.</p>	
Documentation Provided by Project Participant:	

Financial analysis sheet_170908 Turbine PG Test report_080708 CDM consultant engagement letter dated 22 nd Feb. 2005 Letter to DNA (Ref. CDM Documents/MOEF2110/05-06) Excel sheet for baseline calculation and revised PDD	
Information Verified by Lead Assessor:	
Power generation capacity as per Turbine PG test report matches with the same provided by project participant. Earlier Project Participant used NCV of biomass was 12561 kJ/kg but in latest document Financial analysis excel sheet_170908 (Baseline EF), he has been used the same value as 12540 kJ/kg. The document is regarding to CDM consultation to EVI for a power plant by Project Proponent. The information provided by PP reg. CDM consideration and the explanation provided in the reply is acceptable. The concerns documents like engagement of consultant, document submission letter to DNA was checked and accepted by DOE. PP is requested to provide the detailed chronology of events in the PDD under additionality section.	
Reasoning for not Acceptance or Acceptance and Close Out:	
Evidence for price of biomass not submitted. Evidence for depreciation rate not submitted. Fuel input rate calculated is not based upon gross power generation Evidence for PLF value used not submitted. Value of baseline EF calculated does not matches with the same mentioned in PDD.dated 16/09/08 version 1.2 SECTION B.6.2 Regarding to Chronology of serious CDM consideration mentioned in PDD, Findings are. 1. Board decision is before CDM advisor engagement, PP needs to justify it. 2.Reason behind the gap between Mar06 to Jan 07 for DOE proposal, also what is the meaning of PO for other O & M, PP needs to clarify the significance of "O &M" CAR is open.	
Project Participant Response:	Date: 28/11/2008
Evidence for price of biomass is enclosed. Evidence for depreciation rate is enclosed. Fuel input rate calculated is based upon gross power generation now. What could be the evidence for PLF value used? Value of baseline EF was corrected to 1.548 as is the case in the worksheet) Regarding to Chronology of serious CDM consideration mentioned in PDD, Findings are. 1. PP was in talk with EVI even before the start of the project activity to advise on the project. 2. it is not O&M but P&M which means 'other plant & machinery'.	
Documentation Provided by Project Participant:	
Biomass bill, revised PDD Depreciation rate document Financial Analysis excel sheet dated 26/11/2008	
Information Verified by Lead Assessor:	
Price of biomass, reference verified for depreciation rate and revised PDD.	
Reasoning for not Acceptance or Acceptance and Close Out:	

.Biomass bill enclosed (dated 14/07/08) mentions the biomass rate as 1050/- per MT but financial excel sheet mentions the price as 900/- per MT. The submitted evidence is after the conceptualization of project activity; please clarify how it is in line with paragraph 6 of annex 45 of EB 41.

2. The document submitted as an evidence for depreciation rate is dated on April 2000, Project participant need to clarify how such old reference can be considered on 2005 at conceptualization of project activity.

3. Again Fuel input rate is based on net power generation as per financial excel sheet. Please clarify why the emission factor is calculated by considering net power and not based on gross generation. Baseline emission factor need to be based on gross generation.

4. Project participant need to do calculation by considering the same electricity generation output in both the cases.

5. Evidence for PLF value used not submitted.

6. Project participant need to submit the loan documents and copy of CERC norms for power projects in India.

7. Please justify the ten years period of assessment for the financial calculation.

8. Please provide evidence for specific coal consumption rate and please clarify the inconsistency for the boiler efficiency for coal based boiler. In one place it is 88.7% and other place it is 100%.

Regarding to Chronology of serious CDM consideration mentioned in PDD, Findings are.

1. Project participant needs to provide the evidences of prior knowledge of CDM before conceptualization of project activity and evidences of talk with EVI.

2. Reason behind the gap between Mar 06 to Jan 07 for DOE proposal, Project participant need to mention the detail chronology of events in section B5 of the PDD. Please clarify why there is delay for purchase orders of other plants and machinery.

Please clarify why there was pending approval from Assam Pollution control board for significant time.

Thus CAR is open

Project Participant Response:

Date: 12/01/2009

1. Rate of biomass at Rs. 900/ MT has been considered as per the detailed project report. The rate is an average price of biomass residues available in the region. The current rate of Rs. 1050/ MT is higher than the one considered in the analysis. This is indicative of the fact that biomass prices have gone up since and would have negative impact on the project performance.

2. SLM method has been used and a value of 5.28% has been considered for financial analysis as per Schedule XIV of IT Act. Same rate has been used for both baseline case and project activity case.

3. Baseline Emission factor is now based on Gross power generation.

4&5.

80% PLF (same for both baseline as well as project activity for consistency) has been considered for evaluation. Further sensitivity analysis has been carried out to demonstrate that project activity is less viable option compared to project activity even with variations in PLF.

6. Loan in the project activity has been taken from North Eastern Development Finance Corporation Ltd. Loan document provided for validation. CERC document showing norm on return on equity as 14%.

7. Financial analysis has been extended to project life time.

8. 100% boiler efficiency has been considered for conservative estimations at all places.

Regarding serious CDM consideration -

PP seriously considered the CDM benefits before implementation of the project. Details regarding the project implementation and its registration as CDM project are provided in section B.5 of revised PDD. Documents pertaining to the trail are also provided to explain the process.

Documentation Provided by Project Participant:

Information Verified by Lead Assessor:

<p>1. Rate of biomass at Rs.900/MT was mentioned in the DPR. The current rate of biomass is Rs.1050/MT. 2. Please provide schedule XIV of IT Act. 3. Baseline Emission factor is now based on Gross power generation. The same is acceptable. 4&5. 80% PLF have been used for both baseline and project scenario with sensitivity analysis hence accepted. 6. LOI has been provided. 7. Financial analysis has been extended to project life time and hence acceptable. 8. 100% boiler efficiency can not be used to calculate coal consumption for unit price while biomass boiler efficiency is 78%. Regarding serious CDM consideration - Letter from PP to Emergent Ventures India dated 20/09/2004, the reply needs further evidence CDM advisor submitted its first proposal to PP in Nov 2004 (Proposal dated 01/11/2004). This proposal is not signed by Emergent. PP agreed for carrying out the study (Letter dated 20/11/2004). Technical partners of CDM advisor M/s DSCL Energy Services Company Limited also submitted their proposal to PP for carrying out the technical feasibility of the project (proposal dated 06/01/2005). CDM advisor again submitted proposal dated 21/02/2005) which PP agreed to (Letter dated 22/02/2005). The link between BVCL, BPPL & BEPL needs to be substantiated. Board took a decision (Board Resolution dated 01/06/2005). (PO to M/s Prakash Yantra Udyog dated 10/06/2005 turbine) (PO to M/s Cogent Engineers Private Limited dated 10/06/2005 boiler). PP sent letters to Chief Executive Officer (letter dated 30/07/2005), to Mr. Ashish Dey (NGO) on 05/08/2005. PP got a letter of endorsement from Rotary Club of Badarpur on 05/10/2005. No Objection Certificate -Badarpur Town Committee on 08/10/2005. PP filed PD with DNA (MoEF) for HCA during late 2005. The case was presented before the DNA 21/10/2005. NOC letter from Assam Pollution Control Board dated 04/08/2006), PP again filed the project documents to DNA 30/03/2007. HCA dated 15/05/2007 SGS submitted their proposal in Jan 2007, Contract dated 11/06/2007 Plant was commissioned in April 2008.</p>	
<p>Reasoning for not Acceptance or Acceptance and Close Out:</p>	
<p>1. Rate of biomass at Rs.900/MT mentioned in the DPR needs to be substantiated by supplier letter before the decision made for the project activity. 2. Please provide schedule XIV of IT Act. 3 LOI has been provided but a formal loan agreement signed by parties is needed to substantiate the facts. 4. 100% boiler efficiency can not be used to calculate coal consumption for unit price while biomass boiler efficiency is 78%. Regarding serious CDM consideration - Letter from PP to Emergent Ventures India dated 20/09/2004, the reply email dated 23.09.2004 needs further evidence; please send this email as saved copy by email. CDM advisor submitted its first proposal to PP in Nov 2004 (Proposal dated 01/11/2004). This proposal is not signed by Emergent. Please explain the reason. The link between BVCL, BPPL & BEPL needs to be substantiated. PP filed PD with DNA (MoEF) for HCA during late 2005. Please provide receipt of document submitted to DNA in 2005. Please provide plant commissioning evidence in April 2008. CAR 11 is open</p>	
<p>Project Participant Response:</p>	<p>Date:</p>

<p>1. Supplier quote is provided for biomass rates of Rs. 900/ MT.</p> <p>2. Schedule XIV of IT Act is provided to DOE.</p> <p>3. That PP has availed loan from NEDFC and this information can also be confirmed from http://www.nedfi.com/sanctions%20and%20disbursements.htm under “Detailed list of Projects disbursed” for 2006-07 and 2007-08. Relevant worksheets from the same link are attached for ready reference. Please see Row 63 and Row 44 for respective years.</p> <p>4. Coal fired boiler’s efficiency is considered as 84% for the estimation of cost of power generation from a coal fired plant. http://www.bee-india.nic.in/GuideBooks/2Ch6.pdf</p> <p>CDM Consideration:</p> <ul style="list-style-type: none"> - EVI made a reply to the letter on 23/09/2004. This reply was made through email. The copy of the mail though is available but it is not available as attachment. However there is trail of communication which is available as email attachments linking to this communication. This trail has been elaborated in revised PDD and email attachments provided to DOE for validation. - The proposal is not signed as it was sent through email. - BEPL is the 100% subsidiary of BVCL. ‘BPPL’ has been wrongly used by the CDM consultant for ‘BEPL’. This is a typographical error. There is an email of 24/11/2006 available from CDM advisor to PP suggests this error. This is provided to DOE for validation. -Submission to DNA is normally done through post. No receipt is available from them either as DNA has no procedure for giving receipt for documents submitted. -Documents regarding commissioning have been submitted. This was conducted by M/s Raborant in the month of April 2008. 	
Documentation Provided by Project Participant:	
<p>Revised PDD version 1.2 dated 05/01/2009</p> <p>Schedule XIV of IT Act</p> <p>Mail conversation reference to CDM consideration as per chronology of events</p> <p>Worksheets for “Detailed list of Projects disbursed” for 2006-07 and 2007-08</p>	
Information Verified by Lead Assessor:	
<p>Rate of depreciation by SLM method has been verified by the schedule submitted</p> <p>Project participant has availed loan from NEDFC it is verified through link http://www.nedfi.com/sanctions%20and%20disbursements.htm</p> <p>Efficiency of coal fired boiler considered has been verified through link http://www.bee-india.nic.in/GuideBooks/2Ch6.pdf</p> <p>Clarification about the link between BVCL,BPPL & BEPL has verified through an attached email dated 24/11/2006</p>	
Reasoning for not Acceptance or Acceptance and Close Out:	
<p>Project participant needs to submit the letter from biomass supplier to substantiate the rate of biomass considered before the decision made for the project activity.</p> <p>Regarding to CDM Consideration:</p> <p>Project participant needs to submit the letter from PP to Emergent Ventures India dated 20/09/2004, the reply email dated 23.09.2004, the trail of communication provided by project participant as email attachments linking to this communication is not acceptable</p> <p>Please submit the email copy of first proposal from CDM advisor to PP (Proposal dated 01/11/2004) send this email as saved copy by email.</p> <p>Project participant need to submit the correspondence documents to DNA as an evidence that PP filed PD with DNA (MoEF) for HCA during late 2005</p> <p>CAR #11 is open</p>	
Project Participant Response:	Date: 13/03/2009

Supplier letter from M/s Tazuddin is available. The biomass price of Rs. 90/ quintal i.e. Rs. 900/ MT is quoted in the letter. Same is considered in the analysis. The letter of 20/09/2004 is available and is already submitted to DOE. Copy of email dated 23/09/2004 though is available but original email is not available for direct validation. Proposal of 01/11/2004 was sent in an email. Though the copy of same is available, original email is not available for validation. However, the acceptance letter dated 20/11/2004 from the PP referring to this proposal is available for validation and is submitted to DOE DNA does not provide any receipt against submission of PDDs and hence is not available.	
Documentation Provided by Project Participant:	
Biomass suppliers letter dated 05/10/04	
Information Verified by Lead Assessor:	
Biomass supplied by biomass supplier M/S TAZUDDIN. The biomass price of Rs. 90/ quintal i.e. Rs. 900/ MT is quoted in the letter. Same is considered in the analysis.	
Reasoning for not Acceptance or Acceptance and Close Out:	
Supplier letter from M/s Tazuddin has submitted. The letter from PP to Emergent Ventures India dated 20/09/2004, the reply email dated 23.09.2004, the trail of communication provided by project participant The first proposal from CDM advisor to PP (Proposal dated 01/11/2004) is submitted. Thus CAR 11 was closed	
Acceptance and Close out by Lead Assessor:	Date: 13/03/2009

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CAR	Number:	12	Reference:	B.2
Lead Assessor Comment:				Date: 17/07/2007	
Project boundary diagram mentioned in section B.3 is not clear. Net power is mentioned outside project boundary which is supposed to be a part of project boundary.					
Biomass transportation was not mentioned in the project boundary.					
Project Participant Response:				Date: 18/07/2007	
This is corrected in the revised PDD.					
Small Scale methodology AMS-IC does not require assessment of leakage on account of biomass transportation to the site as the leakage would be negligible.					
Documentation Provided by Project Participant:					
Revised PDD					
Information Verified by Lead Assessor:					
The revised PDD was checked and the project boundary mentioned under section B.3 was found acceptable. The leakage related to biomass transportation is expected lesser than what can be assumed for fossil fuel transportation in the baseline because the source of biomass is local region.					
Reasoning for not Acceptance or Acceptance and Close Out:					
The revised PDD was checked and the project boundary mentioned under section B.3 was found acceptable.					
PP has considered biomass transportation outside the project boundary. The biomass is collected from nearby region. Conservatively PP has considered leakage emission due to biomass transportation in leakage calculation and is accepted. Thus CAR12 was closed.					
Acceptance and Close out by Lead Assessor:				Date: 06/08/2007	

Date:	17/07/2007	Raised by:	Vikrant Badve		
Type:	CAR	Number:	13	Reference:	B.11

Lead Assessor Comment:	Date: 17/07/2007
Provide a copy of calibration certificates for the equipments used for measurement purpose. Provide a copy of monitoring procedures laid by the project proponent for the project activity.	
Project Participant Response:	Date: 18/07/2007
The plant is a new facility still under construction and expected to be commissioned by September 2007. All the equipments are new and are being supplied with certificate from the suppliers. All relevant instruments would be calibrated annually from now on. These can be checked during verification of the project activity.	
Documentation Provided by Project Participant:	
Not applicable(discussion during site visit)	
Information Verified by Lead Assessor:	
The explanation provided by the project proponent is acceptable and the calibration requirements would be checked during the verification process of the project activity. CAR can be closed	
Reasoning for not Acceptance or Acceptance and Close Out:	
The explanation provided by the project proponent is acceptable and the calibration requirements would be checked during the verification process of the project activity. Thus CAR13 was closed.	
Acceptance and Close out by Lead Assessor:	Date: 06/08/2007

Date:	13/03/2009	Raised by:	Vikrant Badve		
Type:	FAR	Number:	14	Reference:	AU4
Lead Assessor Comment:				Date: 13/03/2009	
The consent to operate will be checked during verification					

A.4 Annex 4: Team Members Statements of Competency

Statement of Competence

Name: Patil, Ramkrishna 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 type="checkbox"/>
<i>Sub scope(s):</i>	
2. Energy Distribution	<input checked="" type="checkbox"/>
<i>Sub scope(s): Energy Distribution</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: **Soni, Ravikant** 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 type="checkbox"/>
<i>Sub scope(s):</i>	
2. Energy Distribution	<input checked="" type="checkbox"/>
<i>Sub scope(s): Energy Distribution</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: Kurmi, Sandeep

SGS Affiliate: SGS India

Status

- Lead Assessor	<input 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 checked="" type="checkbox"/>
<i>Sub scope(s): Lime Production and Use</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 November 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 November 2009