

# VALIDATION REPORT

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**M/s. A. A. Energy Limited**

**Biomass based power generation  
project in Maharashtra, India**

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**SGS Climate Change Programme**

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|--|--------------|---|--|-------------------------|
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| <b>Project Title:</b>  |              |   |  |                         |
| Biomass based power generation project in Maharashtra, India   |              |   |  |                         |
| <b>Organisation:</b>   |              | <b>Client:</b>  |  |                         |
| SGS United Kingdom Limited   |              | A. A. Energy Limited  |  |                         |
| <b>Publication of PDD for Stakeholders Consultation</b>  |              |   |  |                         |
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| First PDD Version and Date:  |              | Version 01, dated 13/05/2009  |  |                         |
| Final PDD Version and Date:  |              | Version 05, dated 10/08/2010  |  |                         |
| <b>Summary:</b>  |              |   |  |                         |
| <p>M/s. A. A. Energy Limited has commissioned SGS to perform the validation of the project: Biomass based power generation project in Maharashtra, India.</p> <p>Methodology Used: AMS I.D</p> <p>Version and Date: Version 15, dated 30/10/2009</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 12 findings which include:</p> <ul style="list-style-type: none"> <li>• 05 Corrective Action Requests (CARs);</li> <li>• 07 Clarification Requests (CLs);</li> <li>• 00 Forward Action Requests (FARs); and</li> </ul> <p>All findings have been closed satisfactorily. The project will be recommended to the CDM Executive Board with a request for registration.</p> |              |   |  |                         |
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## Abbreviations

|         |   |
|---------|---|
| BAR     | Biomass Assessment Report                                   |
| BM      | Build Margin  |
| BSE     | Bombay Stock Exchange                                       |
| CAPM    | Capital Asset Pricing Model                                 |
| CAR     | Corrective action request                                   |
| CDM     | Clean development mechanism                                 |
| CDM     | EB CDM Executive Board                                      |
| CEA     | Central Electricity Authority                               |
| CER     | Certified emission reduction                                |
| CERC    | Central Electricity Regulatory Commission                   |
| CL      | Clarification request                                       |
| CM      | Combined Margin   |
| COM/MOP | Conference of Parties serving as the Meeting of the Parties |
| CST     | Central Sales Tax   |
| DNA     | Designated national authority                               |
| DOE     | Designated operational entity                               |
| DPR     | Detailed Project report                                     |
| EB      | Executive Board   |
| EIA     | Environmental Impact Assessment                             |
| FAR     | Forward action request                                      |
| GHG     | Greenhouse gas(es)  |
| GIPCL   | Gujarat Industries Power Company Ltd.                       |
| HCA     | Host Country Approval                                       |
| INR     | Indian National Rupee                                       |
| IPCC    | Intergovernmental Panel on Climate Change                   |
| IREDA   | Indian Renewable Energy Development Agency Limited          |
| IRR     | Internal Rate of Return                                     |
| ISHC    | International Stakeholder Consultation                      |
| LoA     | Letter of Approval  |
| MAT     | Minimum Alternative Tax                                     |
| MD      | Managing Director   |
| MEDA    | Maharashtra Energy Development Agency                       |
| MERC    | Maharashtra Electricity Regulatory Commission               |
| MoC     | Modalities of Communication                                 |
| MoEF    | Ministry of Environment & Forests                           |
| MP      | Monitoring Plan   |
| MSEDCL  | Maharashtra State Electricity Distribution Company Limited  |
| MST     | Manufacturers' Sales Tax                                    |
| MT      | Metric Ton  |
| NLC     | Neyveli Lignite Corporation Limited                         |
| NCV     | Net Calorific Value   |
| NEWNE   | Northern, Eastern, Western and North Eastern                |
| NOC     | No Objection Certificate                                    |
| OM      | Operating Margin  |
| PDD     | Project Design Document                                     |
| PLF     | Plant Load Factor   |
| PO      | Purchase Order  |
| PP      | Project Participant   |
| PPA     | Power Purchase Agreement                                    |
| QA/QC   | Quality Assurance / Quality Control                         |
| SFC     | Specific Fuel Consumption                                   |
| TPH     | Metric Ton per hour   |
| TPTCL   | Tata Power Trading Company Limited                          |
| UNFCCC  | United Nations Framework Convention on Climate Change       |
| VVM     | Validation and Verification Manual                          |



WACC                      Weighted Average Cost of Capital

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## 1. Validation Opinion

SGS United Kingdom Ltd has been contracted by A. A. Energy Limited to perform a validation of the project: Biomass based power generation project in Maharashtra, 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.

By setting up a biomass based power generation plant and supplying the electricity produced to the NEWNE grid the project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

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

The total emission reductions from the project are estimated to be 497,660 t of CO<sub>2</sub>e over a 10 year crediting period, averaging **49,766** t of CO<sub>2</sub>e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

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

### Signed on Behalf of the Validation Body by Authorized Signatory



Signature:

Name: Siddharth Yadav

Date: 28<sup>th</sup> October 2010

## 2. Introduction

### 2.1 Objective

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

### 2.2 Scope

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

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

### 2.3 GHG Project Description

The proposed CDM project activity is a Greenfield project involving the installation of a biomass based power generation plant. The project will install a 46 TPH travelling grate boiler and a 10 MW extraction cum condensing turbo generator to generate electricity. The generated power, after meeting the auxiliary power requirements, would be sold to the Tata Power Trading Company Limited (TPTCL) and the net billable power will be metered at the Maharashtra State Electricity Distribution Company Limited's (MSEDCL's) substation, connected to the NEWNE grid. As the power is generated using rice husk, a biomass based fuel; the project will result in a reduction of GHG emissions.

### 2.4 The Names and Roles of the Validation Team Members

| Assessment Team   | Role                    |
|-------------------|-------------------------|
| Ravi Kant Soni    | Lead Assessor           |
| Sudeep Kodialbail | Assessor                |
| Ravi Kant Soni    | Local Assessor          |
| Kaushik Pal       | Sectoral Expert Scope 1 |
| Anshul Sharma     | Financial Expert        |

| Technical Review Team; | Role                    |
|------------------------|-------------------------|
| Kaviraj Singh          | Technical Reviewer      |
| Vikas Bankar           | Sectoral Expert Scope 1 |

### 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 13/05/2009 and the subsequent versions: 02 (dated 05/08/2009), 03 (dated 25/01/2010), 04 (dated 29/06/2010) and the final PDD version 05 (dated 10/08/2010). The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2

The site visit was performed on 30/06/2009 by the assessment team. The findings are summarized in Annex 1 of 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 PP has submitted, to the assessment team, the letter of approval<sup>/5/</sup> issued by the Indian DNA, 'The Ministry of Environment & Forests' bearing Letter No 4/1/2009-CCC dated 01/05/2009. The name of the project activity and the Project Proponent (PP) in the HCA was verified against that in section A.1 and section A.3 of the PDD and was found to be consistent and hence accepted. The LoA issued by the Indian DNA has further been cross checked with the CDM project webpage of the Ministry of Environment & Forests (<http://cdmindia.nic.in>), which is further confirming the approval of this project ([http://cdmindia.nic.in/cdmindia/projects/PCN\\_1312\\_08.pdf](http://cdmindia.nic.in/cdmindia/projects/PCN_1312_08.pdf)).

The letter of approval confirms that:

- (a) The Government of India has ratified the Kyoto Protocol in August 2002 and hence is a Party to the Kyoto Protocol
- (b) The HCA is an approval of voluntary participation in the proposed CDM project activity
- (c) The project contributes to Sustainable Development in India
- (d) The HCA refers to the precise proposed CDM project activity – 'Biomass based power generation project in Maharashtra, India' – mentioned in the PDD being submitted for registration

The LoA is unconditional with respect to (a) to (d) mentioned above.

CAR #1 was raised requesting the PP to submit the HCA. In response, the PP provided the HCA dated bearing Letter No 4/1/2009-CCC dated 01/05/2009. It was verified that the letter refers to the precise proposed CDM project activity title in line with the title in the PDD "Biomass based power generation project in Maharashtra, India". Hence CAR #1 was closed.

The validation team confirms that the HCA submitted by the PP is in compliance with the requirements of paragraphs 44-50 of the VVM version 01.2 (EB 55 Annex 1).

### 4.2 Participation Requirements

The host country for this project is India and has ratified the Kyoto Protocol on 26<sup>th</sup> August 2002. This was checked from the UNFCCC website <http://maindb.unfccc.int/public/country.pl?country=IN>. The PP is listed in tabular form in section A.3 of the PDD is M/s A. A. Energy Limited. The HCA<sup>/5/</sup> from the Indian DNA approves the participation of the PP mentioned above; therefore the PP is approved by the Party to Kyoto Protocol. Also, the name of PP mentioned in table under section A.3 of the PDD is consistent with the contact details provided in Annex 1 of the PDD. The validation team also confirms that no entities other than those approved as the PP is included in section A.3 and annex 1 of the PDD.

No Annex I Party has been identified in the PDD version 1 and therefore no further Letter of Approval was available. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CER can be transferred to an Annex 1 Party, a Letter of Approval from Annex 1 Party will need to be submitted.

In accordance with paragraph 40 (b) of the CDM Modalities and Procedures, the PDD of the proposed CDM project activity was made publicly available for the stakeholder consultation process on the UNFCCC site at <http://cdm.unfccc.int/Projects/Validation/DB/W9AZ15SLZ9J842SWWRYPPCX45AGMUK/view.html>. The PDD was webhosted from 19/05/2009 to 17/06/2009 and comments were invited on the validation requirements.

The PP has submitted the MoC<sup>/4/</sup> letter, which was verified against the project title and information mentioned in Annex 1 and found to be consistent and hence was accepted.

As per paragraphs 51 to 54 of the VVM version 01.2 (EB 55 Annex 1), the validation team is of the opinion that, the proposed CDM project activity meets all the relevant participation requirements.

### 4.3 Project Design Document including Project Description

The proposed CDM project activity is titled "Biomass based power generation project in Maharashtra, India." The uniqueness of this title was verified by checking the same on the UNFCCC website at (Ref: <http://cdm.unfccc.int/Projects/Validation/DB/W9AZ15SLZ9J842SWWRYPPCX45AGMUK/view.html>). The project title was found to be unique and consistent with that mentioned in the PDD. It was further cross-checked with the project title mentioned in the LoA, as mentioned in section 4.1 above, and was found to be consistent.

The description of the proposed CDM project activity in the PDD mentions that the project activity is a Greenfield biomass based power generation project with an installed capacity of 10 MW, situated at 20°37'22" N and 79°57'32" E in the Gadchiroli district of Maharashtra. The project activity involves the installation of a 46 TPH travelling grate boiler and a 10 MW extraction cum condensing turbo generator which will be used to generate electricity by the Rankine cycle. The generated power, after meeting the auxiliary power requirements, will be sold to TPTCL and the net billable power will be metered at the MSEDCL substation, connected to the NEWNE grid. This was verified through the PPA<sup>/28/</sup> signed between TPTCL and M/s A. A. Energy Limited and the agreement<sup>/29/</sup> between MEDA and M/s A. A. Energy Limited. Small quantity of fossil fuel is expected to be used in boiler for start up only.

The technical details of the project activity have been verified from the purchase orders<sup>/6/</sup> and physical inspection by the validation team during the site visit. The description of the project mentioned by the PP in the PDD was found to be accurate and complete.

The project will achieve emission reductions by supplying electricity generated by a biomass based fuel to the NEWNE grid, which is dominated by fossil fuel based power plants. Hence, the project will displace the same amount of electricity of the grid and a certain amount of GHG emissions will be consequently reduced as well. The project is expected to achieve emission reductions of 497,660 tCO<sub>2</sub>e over the crediting period of 10 years.

The project falls under Type (i): Renewable Energy Projects, as the project activity involves generation of electricity using biomass (rice husk) which is a renewable source, and Category D, Grid connected Renewable Electricity Generation as the generated electricity by the project will be exported to the grid through sale of electricity to TPTCL. Hence, according to simplified modalities and procedures for small-scale CDM project activities the type and category of the project activity has been correctly identified in the PDD.

The PP has given a written declaration<sup>/35/</sup> to confirm that the project activity will remain within the limits of a small scale project activity every year, for the entire crediting period. The PP has submitted a certificate<sup>/33/</sup> from a certified chartered accountant mentioning the project cost and the source of funds for the project activity. The certificate does not indicate any usage of public funding for the project activity. The project activity does not involve any modification or retrofitting an existing system and all the equipment installed as part of the project activity are new as confirmed from purchase orders.

CL #2 was raised asking PP to provide the Technical specifications and purchase orders for all equipments used in the project activity in response PP has provided purchase orders for all equipments including technical specifications, the same has been verified through revised PDD and found consistent. Detailed discussions have been provided in annex 3 under CL #2.

CL #3 was raised requesting the PP to substantiate the link between MSEDCL and TPTCL; and amend the respective sections of the PDD accordingly to make clear identification of agency to which the power generated by the proposed project would be exported. In response the PP had revised the sections A.2 and B.3 of the PDD mentioning that the power generated by the proposed project activity will be sold to TATA Power Trading Company Ltd (TPTCL) and net billable power will be metered by Maharashtra State Electricity Distribution Company Limited (MSEDCL) at the sub-station. This information has also been cross checked with the Power Purchase Agreement made between TPTCL and A.A Energy Limited, and was found to be consistent. Thus CL #3 was closed out satisfactorily.

CL #5 was raised requesting the PP to provide ownership documents and licenses which will allow the implementation of the proposed project activity at the site. In response the following documents were submitted by the PP

1. The certificate of incorporation issued by the registrar of companies dated 22/01/2008 (proof for name change from A. A Energy Private Limited to A. A Energy Limited)<sup>/23/</sup>

2. Acknowledgement issued by the Ministry of Commerce & Industry, Government of India, No. 85/SIA/IMO/2008 dated 14/01/2008 regarding the proposed capacity of power plant.<sup>/49/</sup>
3. NOC for setting up a 10 MW biomass based power plant (No. KV/NPDC/NV/75-2008) dated 10/03/2008 issued by the Municipal Council.<sup>/9/</sup>
4. Environment clearance for project activity (letter dated 22/01/2009 (vide No. Power – 2008/356/CR 50/TC – 1) issued by the Government of Maharashtra<sup>/11/</sup>.
5. MEDA approval letter for setting up 10 MW power plant (Ref. PGN – II/BPP – 101/08-09) dated 30/04/2008.<sup>/8/</sup>
6. Maharashtra Pollution Control Board's Consent to establish (No. BO/RO (P&P)/CC – 308) dated 24/06/2008.<sup>/12/</sup>

Submitted documents have been checked and were found to be valid and hence were accepted. Thus CL #5 was closed out successfully. The same has been assessed and was accepted. Detailed discussions have been provided in annex 3 under CL #5.

CL #9 was raised requesting the PP to complete section B.8 of the PDD as per the guidelines for CDM-SSC-PDD completion. The PP had made the necessary modifications in section B.8 of the PDD, it was checked and was found inline with the guidelines for CDM-SSC-PDD completion, thus CL #9 was closed. Detailed discussions have been provided in annex 3 under CL #9.

The validation team is of the opinion that the description of the proposed CDM project activity mentioned in the PDD provides a clear understanding of the precise nature of the project activity and the technical aspects of its implementation. Thus, as per the requirements of paragraphs 58 to 64 of the VVM version 01.2 (EB 55 Annex 1) the validation team confirms that the project description in the PDD is accurate and complete.

#### **4.4 Eligibility as a Small Scale Project**

The proposed CDM project activity is a biomass based renewable power generation project with an installed capacity of 10 MW, which supplies the generated power to the grid. This has been verified by physical inspection of plant and interviews of relevant stakeholder and personnel with knowledge of the project during the site visit. Proposed capacity of the project was further crosschecked from the technical specification mentioned in the purchase order<sup>/6/</sup>; and PPA<sup>/28/</sup> signed between TPTCL and M/s A. A. Energy Limited and the agreement<sup>/29/</sup> between MEDA and M/s A. A. Energy Limited.

Thus, the proposed CDM project activity qualifies within the threshold of 15 MW and meets the eligibility criteria for small-scale CDM project activities mentioned in paragraph 6 (c) of decision 17/CP.7. Also, the project activity conforms to type (i) (Renewable Energy Projects) and category D (Grid connected renewable energy generation) as per appendix B of the simplified modalities and procedures (Decision 4/CMP.1, annex II).

The PP has used AMS I.D version 15, which is an approved small-scale methodology and has been verified from the following site <http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html>. The applicability criteria of the methodology have been described in section 4.5 below.

The validation team has verified from the UNFCCC website that there is no registered small-scale CDM project activity or an application to register another small-scale CDM project activity with M/s A. A. Energy Limited as the PP. Hence, according to the decision tree for determining the occurrence of debundling (EB 36 annex 27) the validation team concluded that the proposed project activity is not a debundled component of a large-scale project activity.

As per the requirements of paragraphs 136-137 of VVM version 01.2 (EB 55 Annex 1), the validation team is of the opinion that the proposed project activity is eligible as a small scale CDM project activity.

#### **4.5 Applicability of selected methodology to the project activity**

The proposed project activity is a biomass based power generation project with an installed capacity of 10 MW, which is connected to the NEWNE grid. The project uses the small scale methodology AMS I.D, version 15. The following steps have been undertaken for assessing the applicability conditions of the methodology:

1. The project activity involves power generation using biomass (rice husk) which is a renewable source and therefore is a renewable energy project.
2. The installed capacity of the project is 10 MW which is within the threshold for small-scale projects and was verified from the consent to establish issued by MPCB<sup>/12/</sup>, environment clearance issued by the Government of Maharashtra<sup>/11/</sup> and Detailed Project Report<sup>/26/</sup>.
3. The grid connectivity of the project was verified through the PPA<sup>/28/</sup>.
4. The project activity involves the installation of a 46 TPH travelling grate boiler and a 10 MW extraction cum condensing turbo generator which will be used to generate electricity and thus does not involve any combined heat & power generation systems. This was verified through the purchase orders<sup>/6/</sup> for the project activity.
5. The purchase order<sup>/6/</sup> for the equipment used for the project activity indicates that the equipments are new and therefore does not amount to capacity addition. It also confirms that the project activity does not involve retrofit and/or modifications to the existing equipment.

CAR #8 was raised requesting the PP to justify the applicability of selected methodology to the project activity. The PP was also requested to clarify and mention consistently in the PDD, which methodology the project activity follows. The PP has provided a satisfactory response for the issue raised above. The same has been assessed and accepted. Detailed discussions have been provided in annex 3 under CAR #8.

Based on the above discussion, that validation team confirms that the proposed CDM project activity meets all the applicability conditions and all other stipulations of the selected methodology AMS I.D version 15.

#### **4.6 Project Boundary**

The selected methodology AMS I.D, version 15 paragraph 7 states that “The physical, geographical site of the renewable generation source delineates the project boundary.”

The PP has described the project boundary in section B.3 of the PDD and has included all the machinery and equipments required for power generation; biomass storage area and the NEWNE grid to which the proposed project activity evacuates power. This was verified through physical of plant during the site visit. Following relevant documents were checked in order to confirm project boundary:

- PPA<sup>/28/</sup> signed between TPTCL & M/s A. A. Energy Limited
- The agreement<sup>/29/</sup> between MEDA & M/s A. A. Energy Limited.
- Detailed Project Report<sup>/26/</sup>

The NEWNE grid of India has been correctly identified for calculation of electricity emission factor as the project displaces an equivalent amount of electrical energy from the NEWNE grid, as per the CEA database version 04<sup>/39/</sup> available at the time of the PDD webhosting for ISHC.

The diagrammatic description of the project boundary mentioned in section B.3 of the PDD the project boundary correctly describes the boundary.

CAR #4 was raised requesting the PP to mention a line diagram of the project boundary in section B.3 of the PDD and furnish information about project boundary in the PDD as per the methodology. The PP had provided the revised PDD incorporating the correct line diagram in section B.3 of the PDD, which was found to be satisfactory, and hence was accepted. Detailed discussions have been provided in annex 3 under CAR #4.

The validation team is of the opinion that the project boundary has been correctly identified in the PDD inline with paragraph 78 of V.V.M version 1.2.

#### **4.7 Baseline Selection and Additionality**

The project has applied baseline as mentioned in the small scale methodology AMS I.D, version 15. The project activity generates electricity and supplies the same to the NEWNE grid, through sale to TPTCL, and thus replaces electricity which would have otherwise been generated by fossil fuels.

The PP has correctly identified the baseline of the proposed CDM project activity as paragraph 10 of the selected methodology AMS I.D, version 15:



“For all other systems, the baseline emissions are the product of electrical energy baseline  $EG_{BL,y}$  expressed in kWh of electricity produced by the renewable generating unit multiplied by an emission factor.

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

The emission factor has been calculated as per paragraph 11(a) as:

“The Emission Factor can be calculated in a transparent and conservative manner as follows:

(a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the ‘Tool to calculate the emission factor for an electricity system’.”

The PP has referred to version 01.1 of the tool to calculate emission factor for an electricity system, which is appropriate as it was the latest available at the time of webhosting.

Corresponding to paragraph 87 of VVM 1.2, assessment team is able to confirm that:

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

The demonstration of additionality has been described in detail in sections 4.7.1 and 4.7.4 below.

#### **4.7.1 Additionality**

The proposed CDM project activity has demonstrated additionality by referring to paragraph 1(a) Investment barrier of EB 35 Annex 34 (Non-binding best practice examples to demonstrate additionality for the SSC project activities). The PP has carried out the investment analysis as per the Guidance on Assessment of Investment Analysis Version 03 (EB 51 Annex 58). The investment analysis has been described in detail in section 4.7.4 below.

The approach used in the PDD was first assessed by verifying and reviewing the following documents and information:

1. Loan sanction letters issued by IREDA & PTC Financial Services <sup>/20 & 21/</sup>
2. Certified copy of Board resolution <sup>/22/</sup>
3. CEA database version 4 <sup>/39/</sup>
4. MERC biomass tariff order dated 08/08/2005 <sup>/30/</sup> & MERC order dated 25/03/2009 <sup>/31/</sup>
5. Purchase orders & Work Orders <sup>/6/</sup>
6. NOC & clearances to set up the project activity <sup>/7 to 12/</sup>
7. Biomass Assessment Study Report <sup>/25/</sup>
8. Detailed Project Report <sup>/26/</sup>
9. Power purchase agreement <sup>/28/</sup>

The data, rationales, assumptions and justifications mentioned in the PDD and the excel sheet were crosschecked against the local knowledge, of the validation team, about regulatory and applicable legal requirements in the Host country India. The documents were also verified by a sectoral and financial expert.

The information in the above mentioned documents were also verified against the actual situation on the site and were found to be accurate. The staff members at the project site were also interviewed to verify the accuracy in the documents.

Based on the responses to the various approaches mentioned above and the requirements of paragraphs 95-97 of the VVM version 01.2 (EB 55 Annex 1), the validation team confirms that the documents provided

for the project activity are appropriate. Hence, the data, rationales, assumptions and justifications provided in the PDD and IRR excel sheet are reliable and credible.

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

The start date of the proposed CDM project activity has been mentioned as 20/08/2008 in the PDD. The evidence for the same submitted by the PP is the boiler purchase contract<sup>6b/</sup> between M/s A. A. Energy Limited and ISGEC John Thompson. The purchase contract was checked for the date and was found to be consistent with that mentioned in the PDD. Also, the start date was found to be in line with the definition of start date mentioned in the Glossary of CDM terms version 5 and paragraph 67 of EB 41.

The start date of the proposed CDM project activity is 20/08/2008 which is after the date of 02/08/2008 and hence, as per paragraph 2 of EB 49 Annex 22 (Guidelines on the demonstration and assessment of prior consideration of CDM), it is a new project activity. The PP has informed the Host Party DNA and the UNFCCC Secretariat in writing of the commencement of the project activity and their intention to seek CDM status. This was verified through the copies of the notification<sup>16 & 17/</sup> provided to the assessment team. The above mentioned notifications:

1. Dated 19/09/2008, which is within six months of the project activity start date of 20/08/2008
2. Mention the latitude and longitude of the project activity and thus gives the precise geographical location of the project activity
3. Contains a brief description of the proposed project activity

This is in line with the requirements mentioned in paragraph 2 of EB 49 Annex 22.

As per the EB 49 Annex 22, the PP is supposed to use the standardized form F-CDM-Prior Consideration to notify the Host party DNA and the UNFCCC Secretariat about the proposed CDM project activity. In this case the PP has not used this specific form as it was only adopted in 17/07/2009 after the date which the PP has written to the Host party DNA and the UNFCCC secretariat on 19/09/2008. The UNFCCC has also been contacted through email by the PP regarding the project title mismatch on 30/06/2010.

The receipt of the notification to the UNFCCC secretariat was verified on the UNFCCC website at <http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html>. This link mentions that the notification was received by the secretariat on 24/09/2008.

CL #7 was raised requesting the PP to address the following issues:

- a. The chronology of events regarding serious CDM Consideration as per EB 41 Annex 46 was not mentioned in section B.5 of the PDD.
- b. Copies of notifications through which the project participant had notified to UNFCCC and MoEF about their plans to develop the proposed project activity under CDM were not submitted.
- c. It was observed that the project title mentioned in notification sent to the UNFCCC (i.e. Biomass based Power project at Wadsa, Taluka. Desaiganj, Dist. Gadchiroli, Maharashtra) did not match with that in the PDD (i.e. Biomass based power generation project in Maharashtra, India).

The PP had submitted the revised PDD including the chronology of events in section B.5 of the PDD and the letters addressed to the Host Party DNA and the UNFCCC secretariat dated 19/09/2008 regarding CDM consideration for the proposed project activity. The PP sent this letter within 6 months of the start date of the project activity; it contains the precise geographical location and brief description of the proposed project activity, the same was verified by the validation team during the site visit, this was found to be as per EB 41 Annex 46 and hence was accepted.

The PP clarified that the project title shown on the UNFCCC website and in section A.2 of the PDD refers to the same project activity through the letter dated 19/09/2008 submitted to the UNFCCC secretariat and the Indian DNA which mentions the taluka name and district name of the project activity and that the same can be verified from section A 4.1.3 of the webhosted PDD. The project title mentioned in section A.2 of the webhosted PDD and in the HCA was found to be consistent, there was also no other power plant which exists at the location, this is reported in the PDD, HCA and the notification sent to the UNFCCC (dated 19/09/2008) as verified during the site visit, thus CL #7 was closed out.

CL #11 was raised requesting the PP to provide the evidence for the start date of the project activity as per paragraph 67 of EB 41 meeting report. In response the PP had provided the Boiler Purchase contract between A. A. Energy Ltd and ISGEC John Thompson dated 20/08/2008 as evidence for the start date of the project activity, this action can be considered as the earliest real action for implementation of the proposed project activity inline with para 67 of EB 41 meeting report and hence CL #11 was closed. Detailed discussions have been provided in annex 3 under CL #11.

Based on the requirements of paragraph 2, 3 & 4 of EB 49 Annex 22, the validation team is of the opinion that CDM was seriously considered in the decision to implement the project activity.

#### **4.7.3 Identification of alternatives (if applicable)**

This is not applicable.

#### **4.7.4 Investment analysis (if applicable)**

The PP has referred to the investment barrier mentioned in EB 35 Annex 34 to demonstrate additionality and carry out the investment analysis. The same has been described in the PDD. The investment analysis has been validated against the requirements of the "Guidance on assessment of Investment Analysis" (EB 51 Annex 58). The PP has selected project IRR as the financial indicator and WACC as the benchmark.

The validation team has verified the key input parameters used from the Detailed Project Report (DPR)<sup>/26/</sup> for the financial analysis according to Para 111 of the VVM version 1.2 and the same has been described in subsequent parts of this section. As per para 113 (a) to (e) of the VVM version 1.2, it was confirmed that the DPR was the basis of the decision to proceed with the investment in the project. Since the time period between the finalization of DPR and the investment decision is only four month it can be confirmed that it is unlikely in the context of the underlying project activity that the input values would have materially changed. The input values used in the analysis were also found to be consistent with the DPR and were cross-checked from the third-party sources and found to be valid and applicable at the time of the investment decision. The equipment costs used has been verified against the Purchase orders<sup>/6/</sup> and were found to be conservative. Also most of the input parameters have been cross verified with the Biomass Tariff Order, dated 08/08/2005 published by MERC<sup>/30/</sup>. This was the latest publically available document applicable and valid at the time of investment decision.

The following table gives the assumptions that have been used to calculate the Project IRR and their means of validation:

#### **Project Size: 10 MW**

This is verified through the purchase order placed<sup>/6,c/</sup> by A.A Energy Ltd to Purchase Order issued to M/s Triveni Engineering and Industries Ltd. for 10 MW Steam Turbine and was also cross verified with the power purchase agreement<sup>/28/</sup> signed between TPTCL and A. A Energy Ltd dated 24/05/2008.

#### **Project Cost: INR 533.8 million**

The project cost includes the following particulars:

- Land and site development
- Factory shed & building & civil works
- Plant and machinery
- Misc Fixed assets
- Preliminary & pre-operative expenses
- Engineering Consultancy
- Contingencies

The project cost has been validated through the review of the:

- Detailed Project Report<sup>/26/</sup> (Issued by MITCON Consultancy Services Ltd)
- Actual purchase order and work order placed<sup>/6/</sup>
- Biomass Tariff Order dated 08/08/2005 published by MERC<sup>/30/</sup> (Comparison with per MW cost of biomass based projects as given in the order is checked)
- Comparison with project adopting similar technology and similar scale in the project region



The actual project cost is more than the cost of the project mentioned in DPR, this is verified from the certificate (dated 17/05/2010) issued by an independent third party Kothari Rath and Associates Chartered Accountants<sup>/33/</sup>. Hence the project cost considered from DPR is conservative. The Project Participant anticipated variation that may takes place thus sensitivity analysis has been conducted to an extent of +/- 10% in line with the "Guidelines on the assessment of investment analysis" version 03 (EB 51 Annex 58). It is confirmed that even after 10% reduction in project cost the project IRR does not crosses the benchmark.

The validation team confirms that the estimated cost is conservative, reasonable, and hence is accepted.

#### **Debt-Equity ratio- 70:30**

This is verified from the DPR and the same is cross checked with Biomass Tariff Order dated 08/08/2005 published by MERC<sup>/30/</sup> which states that "CERC has considered a normative debt-equity ratio of 70:30, irrespective of the funding plan proposed by the generating companies."

#### **Plant Load Factor (PLF):**

This has been validated by checking the DPR issued by third party MITCON Consultancy Services Ltd, inline with guidelines published in EB 48 annex 11 under paragraph 3(b). The PLF considered for the project activity is further cross verified with the biomass tariff order (dated 08/08/2005) published by MERC<sup>/30/</sup> in the matter of "Tariff and Related Dispensation for Procurement of Power from Biomass-based Generation Projects". According to paragraph 2.9 of biomass tariff order MERC has considered a PLF of 70% during the 1st year of operation, and 80% from the 2nd year onwards for the purpose of determining cost of generation for the representative Case. In view of this fact the PLF Considered for the proposed project activity is found to be conservative.

#### **Tariff Rate: INR 4.15/KWh**

This is verified from DPR further cross verified from the PPA (dated 24/05/2008) signed between AAEL and TPTCL<sup>/28/</sup>. This agreement shall be valid effective from the date of signing by the Parties and shall remain in force fro the period of 10 years. Also this purchase price INR 4.15/KWh would be increased at 3 % (compounded) per annum during the period of this PPA on year to year basis after one year of production.

#### **Transmission losses: 2%**

The PP has considered transmission losses as 2% for proposed project activity. It is worthwhile to note that that biomass tariff order dated 08/08/2005 issued by MERC<sup>/30/</sup> has proposed transmission losses as 5%. Hence the transmission losses considered by the PP are found to be conservative and hence are accepted.

#### **Interest on term loan: 11%**

The same is verified from the DPR. Interst rate is further cross checked with actual loan sanction letters

- Loan sanction letter issued by IREDA<sup>/20/</sup> (dated 18/12/2008) at interest rate 15.25% p.a
- Loan sanction letter issued by PTC financial services<sup>/21/</sup> (dated 25/02/2009) at interest rate 14% p.a

It is noted that lesser the interest rate lower will be the Benchmark; in view of this fact the interest rate considered for project activity is found to be reasonable and is accepted.

#### **Income Tax: 33.99%**

Tax rate 33.99% is taken as per the Income Tax Act 1961 (<http://law.incometaxindia.gov.in/Directtaxlaws/act2005/gr.htm>), still applicable at the time of decision making. The value has been verified through source website. Being an official data eliminates any ambiguity.

#### **MAT: 11.33%**

Tax rate 11.33% is taken as per the Income Tax Act 1961 (<http://law.incometaxindia.gov.in/Directtaxlaws/act2005/gr.htm>), still applicable at the time of decision making. The value has been verified through the source web site. Being an official data eliminates any ambiguity.

#### **Surplus Biomass Availability:**

This is verified through the Biomass Assessment study report<sup>/25/</sup> that net surplus biomass (rice husk) available in nearby region covering 50 km radius, which can be delivered towards power generation for AAEL as follows:

|                         | Region 1(0-15km) | Region 2(15-25km) | Region 3(25-50km) |
|-------------------------|------------------|-------------------|-------------------|
| Surplus Biomass(MT/p.a) | 56832            | 13824             | 109056            |

Biomass Assessment study for project activity has been carried by MITCON Consultancy Services during the year 2007 .MITCON Consultancy Services Ltd has a proven track record in biomass assessments. The study is based on official data and a field survey which is deemed appropriate.

#### **Biomass Price: INR 1780/MT**

In the project activity the primary fuel source used would be rice husk and the plant will operate throughout the year on rice husk only.<sup>/25/ and /26/</sup> As verified through DPR that total rice husk consumption in the power plant is 102,065 MT per annum<sup>/26/</sup>. However, the rice husk available in the nearby region (0-25 km) is not sufficient to meet the demand of the power plant<sup>/25/</sup>. Hence the PP will have to procure the rice husk from a larger area covering 50 km of radius, result the increase in landed cost of rice husk due to increased distance for transportation. The landed price of biomass available in the nearby region is verified through Biomass Assessment Study Report<sup>/25/</sup>:

| Unit (INR/MT)          | Region 1(0-15km) | Region 2(15-25km) | Region 3(25-50km) |
|------------------------|------------------|-------------------|-------------------|
| Landed Price           | 1550             | 1600              | 1650              |
| Weighted Average Price | 1615             |                   |                   |

It has been verified through DPR that total rice husk consumption in the power plant will be 102,065 MT per annum. It is evident from above table that rice husk available in the nearby region (0-25 km) will not be sufficient to meet the demand of the power plant. Hence the PP will have to procure the rice husk from a larger area covering 50 km of radius, as a consequence landed cost of rice husk would increase.

The PP has considered weighted average landed cost of biomass INR 1615/MT as base price. The actual price of biomass as verified through quotation invited through biomass suppliers<sup>/41/</sup> and letter issued by the third party MITCON Consultancy Services Ltd<sup>/42/</sup> has confirmed to be INR1800/MT during the year 2008. It has been further cross verified through review of MERC order dated 08/08/2005 published<sup>/30/</sup> on 25/03/2009 that the biomass price (rice husk) was INR 1800/MT to INR 1820/MT during August 2008 when investment decision had taken. Hence consideration of weighted average landed cost of rice husk is found to be appropriate, conservative and hence is accepted.

As recommended in section 13.2 of DPR, the implementation of project would take at least 15 months from the date of placement of orders for main plant and equipment that includes boiler and turbo generator. Since purchase order for boiler was placed on 20/08/2008, hence commissioning and synchronization of plant was expected to be done during November 2009.

Furthermore it was also recommend in DPR that biomass price will increase 5% per year on compounded basis, this information was known to the PP at the time of investment decision and following this the PP had decided to go ahead with the project activity. Based on the information available at the time of investment decision, an escalation of 5% per year on biomass price for two years (2007-08 to 2008-09) has been considered at a base price INR 1615/MT and estimated rice husk price is arrived as INR1780/MT, the same has been considered for financial analysis. The actual price of rice husk during 2009 was INR 2000/MT this was verified through the letter issued by the independent third party MITCON consultancy Services Ltd<sup>/42/</sup>. This letter was issued on the basis of data collected from biomass suppliers and formers. This is further cross checked with quotations provided by the biomass suppliers<sup>/44/</sup> that the rice husk price during 2009 was INR 1900/MT to INR 2000/MT.

It is worthwhile to note that the synchronization of the plant<sup>/45/</sup> has been done on 30/04/2010 which is 19 months later than PO date for turbo-generator and 28 months after the biomass assessment study. The PP is procuring the biomass at rate INR 2425/MT, this is verified through invoices raised by biomass suppliers<sup>/46/</sup> and further cross checked with the bank account statement<sup>/47/</sup> (from 1/01/2010 to 30/06/2010) issued by the State Bank of India. Based on the information's and verified documents the validation team is able to confirm that the estimated biomass price considered i.e. INR 1780/MT is appropriate and conservative.

### Escalation in biomass price-5%

As prescribed in DPR 5% per year escalation in biomass price has been considered. The same is cross verified through the Biomass Tariff Order dated 08/08/2005 and published by MERC, which was available at the time of investment decision.

The validation team has checked the following information's /documents to validate an escalation of 5% per year on biomass price:

1. Historical trend of biomass in the region provided by MITCON Consultancy Services Ltd<sup>/42/</sup>
2. Quotation invited from biomass suppliers<sup>/41/ and /44/</sup>
3. Review of MERC biomass tariff order dated 08/08/2005 published on 25/03/2009<sup>/31/</sup>
4. Biomass supplier Invoices and bank account statement<sup>/46/, /47/</sup>
5. Similar projects registered under CDM in the same region<sup>/48/</sup>

Based on the data collected by biomass suppliers and farmers in Gadchiroli and nearby Vidarbha region MITCON Consultancy Services Ltd has provided the historical trend of biomass<sup>/42/</sup> (rice husk) price from 2005 to 2009 as follows:

| Sr. No. | Year | Average price (INR/ MT) |
|---------|------|-------------------------|
| 1       | 2005 | 900                     |
| 2       | 2006 | 1200                    |
| 3       | 2007 | 1500                    |
| 4       | 2008 | 1800                    |
| 5       | 2009 | 2000                    |

It is evident from the above table that escalation of rice husk price is more than 17% for last 5 years.

On 23/09/2008 a petition was filed by Maharashtra Biomass Energy Developers Association (MBEDA) seeking a review of variable charge component of the Tariff determined under MERC Biomass Tariff Order dated 08/08/2005. After hearing the parties and upon scrutiny of the material placed on record, MERC had issued a review of order on 25/03/2009 and as per paragraph 15 of this review MERC confirmed that actual increase in biomass prices may be higher than the escalation factor of 5% per year as provided under the Biomass Tariff Order dated 08/8/2005.

Moreover, the actual supply quotations given by the biomass suppliers<sup>/44/</sup> confirms that the rice husk price was as INR 1900/MT to 2000/MT during 2009. However as verified from invoices paid<sup>/46/</sup> by the PP after commissioning of plant the actual price of biomass is INR 2425/MT which is significantly higher than what expected as per the escalation considered i.e. 5% per year.

It has been further cross verified with the following similar biomass based power projects in Maharashtra which have recently been registered under CDM and whose data is publically available have also considered an escalation of 5% per year in biomass price in their investment analysis. These projects<sup>/48/</sup> are similar in nature and parameters are comparable.

- 10 MW Biomass Based Renewable Energy Generation for the Grid at Saradambika Power Plant Private Limited at Chandrapur District, Maharashtra. (UNFCCC No-1541)
- 10 MW Biomass based renewable energy generation for the grid at ASN Power Projects (P) Limited in Chandrapur District, Maharashtra (UNFCCC ref No-2129)
- 10 MW Biomass based renewable energy generation for the grid, Jalagon District, Maharashtra, India. (UNFCCC ref No-2119)
- 10 MW Biomass based renewable energy generation for the grid at Varam Bio Energy (P) Limited in Bhandara District, Maharashtra. (UNFCCC ref No-2115)

In light of the above information the validation team is able to confirm that the biomass price has been increasing exorbitantly since 2005 and the yearly escalation of 5% considered in biomass price is appropriate and conservative.

### IT depreciation:

This is verified from DPR that IT depreciation on Civil and structural's is 10% and IT depreciation on plant and machinery is 80%. The project participant has adopted Income Tax Act stipulated written-down value (WDV) depreciation for income tax calculation, which is an accepted accounting method. These values have also been verified from the Biomass Tariff Order dated 08/08/2005, and were found to be consistent and hence accepted.

### Book Depreciation:

This is verified from DPR that IT depreciation on Civil and structural's is 3.34% and IT depreciation on plant and machinery is 5.28%. The depreciation values have been taken as per SCHEDULE XIV, Companies Act. These values have also been verified from Biomass Tariff Order dated 08/08/2005, and were found to be consistent and hence accepted.

**Annual running hours:** 7290 hrs

Annual operating hours is verified through DPR<sup>/26/</sup>. This is as per the assumption 330 days of operation in a year and 24 hrs per day which is appropriate as per the local expertise considering the biomass plant of similar capacity in the region<sup>/48/</sup>.

- 10 MW Biomass Based Renewable Energy Generation for the Grid at Saradambika Power Plant Private Limited at Chandrapur District, Maharashtra. (UNFCCC No-1541)
- 10 MW Biomass based renewable energy generation for the grid at ASN Power Projects (P) Limited in Chandrapur District, Maharashtra (UNFCCC ref No-2129)
- 10 MW Biomass based renewable energy generation for the grid, Jalagon District, Maharashtra, India. (UNFCCC ref No-2119)
- 10 MW Biomass based renewable energy generation for the grid at Varam Bio Energy (P) Limited in Bhandara District, Maharashtra. (UNFCCC ref No-2115)

The same is also cross verified through Biomass Tariff Order<sup>/30/</sup> dated 08/08/2005 and found to be appropriate.

**Auxiliary electricity consumption:** 1 MW

The PP has considered the auxiliary consumption as 10%, this percentage has been verified with the DPR<sup>/26/</sup>. The MERC Biomass tariff order dated 08/08/2005 available at the time of decision making suggests an auxiliary consumption percentage of 10% for the biomass based power plants. Hence the assumed value is found to be appropriate for the size and type of the plant.

**Store and consumables:** INR 0.16 million

This cost is an estimated figure and same has been verified from DPR<sup>/26/</sup>. This includes lubricants; chemicals oils etc and consumption of these will depend on actual operation of plant. Hence this is link with the PLF. (80% for first year, 85% for second year and 90% from 3<sup>rd</sup> year onward)

**Utilities:** INR 4.8 million

This cost has been verified from DPR<sup>/26/</sup>. This includes additional utility required is water from outside resources. This will depend on the actual running condition of plant. Hence this is link with the PLF. (80% for first year, 85% for second year and 90% from 3<sup>rd</sup> year onward)

**Labour charges:** INR 9.1 million

This cost has been verified through DPR. Actual cost attributed to labour charges is INR 9.7 million this is cross checked with certificate provided by Kothari Rathi and Associates Chartered Accountants<sup>/43/</sup>. Hence labour charges considered from DPR is found to be conservative and hence accepted.

There is an escalation of 5% p.a considered in wages which is verified from DPR. This is further cross checked with the certificate provided by Kothari Rathi and Associates Chartered Accountants<sup>/43/</sup> which states that an annual escalation of 5 to 10% on wages is possible considering the rate of inflation and cost of living. Also as per Biomass Tariff Order dated 08/08/2005 published by MERC, annual escalation in salaries is considered as 5%. Hence the validation team is of opinion that annual escalation in wages considered for project activity is appropriate.

**Repair & maintenance:** INR 5.1 million

This is verified through DPR. Repair and maintenance is mainly attribute to the fact that the PP is new to the power generation field and lacks the requisite experienced and technically skilled resources internally. Hence the PP has to hire an external operation and maintenance provider to ensure the smooth operations of the power plant. This cost is estimated as 1.2% of submission of following constituent of project cost:

- i. Factory shed & building & civil works
- ii. Plant & Machinery

### iii. Misc fixed assets

It is to be noted that above parameters (i.e. i, ii, iii) contributes around 92% of total project cost. It is worthwhile to note that Biomass Tariff Order (clause 5.13) dated 08/08/2005 available at the time of decision making considers that repair and maintenance cost as 4% of normative capital cost during the 1<sup>st</sup> year of operation. In view of this piece of information repair and maintenance cost considered by the PP is found to be conservative and appropriate.

There is an annual escalation of 5% has been considered in repair and maintenance charges and same is verified through DPR. Additionally, the Biomass tariff order (dated 08/08/2005, para 5.13) published by Maharashtra Electricity Regulatory Commission (MERC) for biomass based power projects in Maharashtra has also considered an annual increment of 5% in repair and maintenance expenses. This order was available and valid at the time of investment decision.

Escalation in repair and maintenance cost has been further cross checked with the following similar biomass based power projects in Maharashtra which have recently been registered under CDM and whose data is publically available have also considered an escalation of 5% in repair and maintenance expenses in their investment analysis. These projects<sup>/48/</sup> are similar in nature and are parameters are comparable.

- 10 MW Biomass Based Renewable Energy Generation for the Grid at Saradambika Power Plant Private Limited at Chandrapur District, Maharashtra. (UNFCCC No-1541)
- 10 MW Biomass based renewable energy generation for the grid at ASN Power Projects (P) Limited in Chandrapur District, Maharashtra (UNFCCC ref No-2129)
- 10 MW Biomass based renewable energy generation for the grid, Jalagon District, Maharashtra, India. (UNFCCC ref No-2119)
- 10 MW Biomass based renewable energy generation for the grid at Varam Bio Energy (P) Limited in Bhandara District, Maharashtra. (UNFCCC ref No-2115)

The validation team is able to confirm that the escalation of 5% in repair and maintenance considered is appropriate and valid at the time of investment decision.

### **Admin & general expenses: INR 0.8 million**

This expense has been verified from DPR and same was available and valid at the time of investment decision. Moreover the actual admin and general expenses certified by the independent third party Kothari Rathi and Associates Chartered Accountants<sup>/43/</sup> is as INR 1.1 million; hence the cost considered is appropriate and accepted. Admin and general expenses includes salaries of personnel involved and labour welfare expenses.

There is an annual escalation of 5% has been considered in admin and general expenses and the same is verified through DPR. The Biomass Tariff Order dated 08/08/2005 published by MERC does not specifically state the assumptions used to arrive at the tariff rate. Further, the PP is new in power generation; hence there is no other data available specific to the project activity. However the escalation considered in admin and general expenses has been further cross checked with the following similar biomass based power projects<sup>/48/</sup> in the same region:

- 10 MW Biomass based renewable energy generation for the grid at ASN Power Projects (P) Limited in Chandrapur District, Maharashtra (UNFCCC ref No-2129)
- 10 MW Biomass based renewable energy generation for the grid at Varam Bio Energy (P) Limited in Bhandara District, Maharashtra. (UNFCCC ref No-2115)

The above projects have recently been registered under CDM and whose data is publically available have considered an escalation of 10% in administrative expenses in their investment analysis. These projects are similar in nature and are parameters are comparable. The escalation in salary of admin personnel involved further substantiated by the article "Fixing the Executive Salary" which provide the reference of survey by ECA international (Employment Conditions Abroad) says that Indian salaries will rise by 12% in 2007-08, the highest of 45 countries surveyed(ref:[http://www.indianmba.com/Faculty\\_Column/FC783/fc783.html](http://www.indianmba.com/Faculty_Column/FC783/fc783.html)).

In view of above information, it can be confirmed that a 5% increment per annum in admin and general expenses for power plant operations is a conservative estimate.



The above mentioned input values are consistent and appropriate with respect to the date of investment decision, as they were valid and applicable at that time. The PDD<sup>1.5/</sup> and the excel spreadsheet<sup>2 & 3/</sup> have been checked to confirm that the input values have been consistently mentioned and applied in all calculations. Hence, it satisfies all the requirement of paragraph 6 of EB 51 Annex 58. The parameters used in the financial calculations have been validated based on a revision of the sources presented in the PDD. The validation team is able to confirm that the parameters are plausible and can be considered acceptable under the project situation.

Based on the above mentioned input values, project IRR has been calculated to be 8.31%.

### Suitability of Benchmark & benchmark Analysis

The PP has chosen the project IRR as the financial indicator and WACC as the benchmark. The WACC has been calculated for the project activity and has been compared with the benchmark. Thus, it is in line with the requirements of paragraph 12 of EB 51 Annex 58.

The WACC for the project activity has been calculated as follows:

$$WACC = (E/V) \cdot Re + (D/V) \cdot Rd \cdot (1 - Tc)$$

where,

(E/V) – Percentage of financing that is equity

(D/V) – Percentage of financing that debt

Rd – Cost of debt

Re – Cost of equity

Tc – applicable tax rate (Corporate tax)

The values of (E/V), (D/V) & Rd have been mentioned among the input values above. Re has been estimated as per the CAPM as mentioned below

$$Re = Rf + \beta (\text{Market Return} - \text{Risk Free Return})$$

**Risk Free Return** – has been considered as per the information provided by the RBI<sup>36/</sup> on weighted average yield on market loans. The value of 8.12% for the year 2007-08 was available at the time of decision making

**Market Return & Risk Premium** – In order to avoid the risks associated with the project, market return has been calculated by using the BSE 500 index data, which is a well-diversified market portfolio. To eliminate the impacts of short term volatility a considerably long period prior to the decision for the project activity has been considered, i.e. 1999 to 2008. Based on this, the market return for the project activity has been estimated at 22.79%.

**Beta** – The PP has calculated the equity beta values for a number of power companies in India as the covariance between its return and the return on a well diversified market portfolio, divided by the variance of the return on a well diversified market portfolio:

$$\text{Equity Beta } (\beta_e) = \text{Covariance } (r, rm) / \text{Variance } (rm)$$

Where, **r** is the return from the equity investment in a single stock,

**rm** is the return from the equity investment in the well-diversified market portfolio

The measured equity beta for a particular company relates to the unique capital structure of that firm. A change in the capital structure will change the degree of financial risk borne by the equity holders and the corresponding equity beta. Therefore, a common practice to allow equity betas to be compared across firms with different capital structures is to adjust the estimated equity beta into the equivalent asset beta i.e. the equity beta that would apply if the assets were financed wholly with equity, using the following formula:

$$\text{Asset beta} = \text{Equity beta} / [1 + (1 - \text{Tax}) \times (\text{debt} / \text{equity})]$$

Thus, the PP has calculated the asset beta (unlevered) for a set of power generating companies in India and the average value has been considered for calculating the Re. The detailed calculations in the WACC calculation spreadsheet have been found to be appropriate and hence accepted.

| Company Name   | Asset Beta  |
|----------------|-------------|
| NLC            | 1.19        |
| CESC           | 0.97        |
| GIPCL          | 0.94        |
| TATA Power     | 0.87        |
| Reliance Infra | 0.71        |
| NTPC           | 0.62        |
| <b>Average</b> | <b>0.88</b> |

Based on the above values, Re has been calculated to 21% and WACC i.e. the benchmark for the project activity has been determined as 11.41%. Thus the project IRR of 8.31% is well below the benchmark of 11.41%. The analysis indicates that the project activity is financially not viable without the benefits of CDM. Further, a sensitivity analysis has been carried out subjecting critical parameters to variations of 10% and the same has been discussed below.

The data in the revised excel spreadsheet<sup>2&3/</sup> presented by the PP have been validated against the references provided and found to be correct. The references provided are publicly available data sources. Thus, it satisfies the requirements of paragraph 13 of EB 51 Annex 58.

The PP has submitted all versions of the excel spreadsheets used for the investment analysis. The sheets have been checked by the financial expert. All the assumptions, links and formulae used in the sheet are readable and all cells are viewable and unprotected. The analysis has been presented in a transparent manner in the excel spreadsheet and is reproducible. Thus, it satisfies the requirements of paragraph 8 of EB 51 Annex 58.

The lifetime of the project activity is 20 years. The financial analysis has been carried out in the excel spreadsheet considering the entire period of 20 years in spite of the project having a fixed crediting period of only 10 years. Thus, the assessment period has been appropriately considered as per paragraph 3 of EB 51 Annex 58.

### Sensitivity Analysis

The PP has appropriately selected the following variables to conduct the sensitivity analysis:

1. Project cost
2. Biomass price
3. Tariff

The results of the sensitivity analysis have been presented in the PDD<sup>1.4/</sup>. The results have also been presented in the excel spreadsheet<sup>2/</sup> in a reproducible manner. Thus, it satisfies the requirements of paragraph 17 of EB 51 Annex 58.

The PLF for the project activity is 90% from the third year onwards. Assuming a +10% variation implies that the plant is running at 100% PLF, which is not a likely scenario. Hence, the PP has not carried out sensitivity analysis on the PLF.

The sensitivity analysis for the variables covers a range from +10% to -10%, which is appropriate in context of the project requirements. Thus, it satisfies the requirements of paragraph 18 of EB 51 annex 58. Any positive change in biomass price or increase in project cost or downward change in tariff would have a negative impact on the IRR and hence have not been mentioned here. By the applying -5% variation to biomass price and +10% variations to project cost and the tariff following is obtained:

|                      | Variation | Project IRR | Benchmark |
|----------------------|-----------|-------------|-----------|
| <b>Biomass Price</b> | -5%       | 10.91%      | 11.41%    |
| <b>Project Cost</b>  | -10%      | 9.98%       | 11.41%    |
| <b>Tariff</b>        | +10%      | 9.93%       | 11.41%    |

In case of project cost and the tariff, the project IRR does not cross the benchmark. Considering the -5% variation in biomass price project IRR does not pass the benchmark. It is verified that project IRR passing the benchmark if biomass price decreases more than 7% but this scenario however is considered not likely to occur, because the biomass price generally is expected to increase due to an increased biomass market and an increased demand. Significant biomass price escalations are evidenced by historical biomass price trend provided by independent third party MITCON Consultancy Services Ltd<sup>/42/</sup>. It has been further verified from the quotations from the different suppliers<sup>/41/,44/</sup> that the price of primary biomass is variable in nature. Also it can be confirmed from DPR and Biomass tariff order dated 08/08/2005 that biomass price will be escalate @ 5% per year and this was concluded before project start date. Thus, the validation team confirmed that any decrease in the biomass price is deemed unlikely.

#### Justification for Changes from Webhosted PDD:

| Sr. No. | Parameter                | Web hosted PDD | Final PDD | Reason   |
|---------|--------------------------|----------------|-----------|--|
| 1       | Cost of equity           | 17%            | 21%       | A more appropriate approach has been used for calculation of unlevered Beta.<br>A weighted average tax rate and weighted average D/E ratio for last three years have been used for calculation of unlevered Beta for all six companies. Average of unlevered Beta has been used for calculation of cost of equity. |
| 2       | Tax rate                 | 11.33%         | 33.99%    | MAT was considered as tax rate for WACC calculation in the webhosted PDD. This has been replaced with corporate tax rate. This approach is found conservative and hence accepted.  |
| 3       | WACC (Benchmark)         | 11.94%         | 11.41%    | The benchmark has been changed because of change in Beta and applicable tax rate.  |
| 4       | Capital cost (INR Lakhs) | 4679           | 5338      | Only basic cost was considered in webhosted PDD. PP has also considered excise duty, CST/MST and other expenses on basic costs in the final PDD. This has increased the project cost. Proper references have been verified and same is provided in section B.5 of PDD.   |
| 5       | Project IRR              | 8.36%          | 8.31%     | In the final PDD, the project IRR has been calculated for project life time i.e. 20 years while in the webhosted PDD it was calculated for 10 years. Basic project cost has also been updated with excise duty, CST/MST and other expenses.  |
| 6       | Transmission losses      | Not reported   | 2%        | Transmission losses were not reported in webhosted PDD. As per final PDD the same has been considered as 2%.   |

#### Discussion of CARs/CLs

CAR #6 was raised to address the issues related to the investment analysis. Some of the major issues raised and their discussions are as follows:

- The PP was requested to justify, why the cash flows for calculating IRR were not taken for the technical lifetime of the project. In response, the PP has submitted the revised IRR sheet including the cash flow calculations to cover time period of 20 years, which was found in line with EB 41 Annex 45, paragraph 3 which states that "In general a minimum period of 10 years and a maximum of 20 years will be appropriate" and hence was accepted.
- The PP was requested to clarify the variation in PLF mentioned in section B.5 of PDD and provide the evidence for the same. The PP has clarified that the value of PLF has been taken from the DPR and the same can be cross checked with MERC biomass tariff order which states that – "Based on information and DPRs furnished by the Project holders, the Commission notes that most of the Project cases assume a plant capacity utilization of 70-75 % during the 1<sup>st</sup> year of operation, and 85 % to 90 % from the 2<sup>nd</sup> year onwards. The Projects consider plant operating days during a year as 330 days (i.e. availability factor of > 90%). This translates into an expected PLF of 67% during the 1<sup>st</sup>



year, and around 81% from the 2<sup>nd</sup> year of operation.” Hence, the PLF considered by the PP was found to be conservative and hence accepted.

- c. The PP was requested to clarify why the conditional discounts have been considered a part of financial analysis and why margin money has been taken as a part of capital cost. In response, the PP has removed the 2% cash discount from financial calculation and calculated working capital for 40 days for working capital and margin money on sundry debtors. Also margin money was removed from project cost because margin money is pure equity. PP has clarified that for smooth operation of plant, the PP has to invest in margin money periodically. Hence the margin money for first year and increase in margin money in subsequent years has been considered as net cash outflow for calculation of project IRR. Pay back of margin money at the end of 20<sup>th</sup> year has been considered as cash inflow at the end of 20<sup>th</sup> year. This is verified from revised the IRR excel sheet, and was found to be satisfactory, and hence accepted.
- d. The PP was requested to clarify why the applicable corporate tax rate has not been used for the Unlevered Beta Calculation and the WACC Calculation. In response the PP has clarified that instead of corporate tax rate, effective tax rate to each individual company has been used by the PP for calculation of unlevered beta. The effective tax rate has been calculated by dividing the company's weighted average tax rate for last three years by its weighted average profit before tax for last three years. This is verified through WACC calculation sheet and from revised PDD, found acceptable. Also the calculation of unlevered Beta can be cross verified from web link ([http://www.ehow.com/how\\_5108226\\_calculate-unlevered-beta.html](http://www.ehow.com/how_5108226_calculate-unlevered-beta.html)), hence accepted. The WACC calculation sheet has been updated as per applicable corporate tax rate. The PP has considered corporate tax 33.99% for determination of benchmark this is verified through the WACC calculation sheet and was found to be conservative and correct, and hence was accepted.
- e. The PP was requested to clarify why the tax shield available to the PP in initial years due to accelerated depreciation rate allowed under Income tax Act has not been included. In response it was clarified that the PP neither has any existing business other than the proposed project activity nor is the A. A. Energy Ltd. part of any group of companies. Thus, the PP doesn't have any other tax liability from his other businesses. This was verified through the letter of undertaking declaring the same along with Certificate of incorporation and shareholding pattern till 08/01/2010. In view of evidences, explanation provided by the PP was found to be satisfactory, and hence was accepted.

The PP has provided the necessary documents and satisfactory responses for the issues raised above, thus CAR #6 was closed. Detailed discussions have been provided in annex 3 under CAR #6.

## Opinion

Based on the above mentioned discussion the validation team is of the opinion that the investment analysis satisfies all the relevant requirements of EB 51 Annex 58:

- The period of assessment considered for the project activity is 20 years, thus satisfying the requirements of paragraph 3 of EB 51 Annex 58.
- All input values used in the analysis have been checked against the documentary evidences mentioned in section 4.7.1 above. The values have been found to be valid and applicable at the time of the investment decision taken by the PP. In addition, the values mentioned in the excel spreadsheet and the PDD have been consistently applied in all calculations. Thus, it satisfies the requirements of paragraph 6 of EB 51 Annex 58.
- The PP has submitted all versions of the excel spreadsheets; and all assumptions, links and formulae used in the sheet are readable; calculations are transparent & reproducible; all cells are viewable and unprotected. Thus, it satisfies the requirements of **paragraph 8** of EB 51 Annex 58.
- The PP has selected WACC as the benchmark, which is appropriate, as the financial indicator selected is Project IRR. Thus, it satisfies the requirements of **paragraph 12** of EB 51 Annex 58.
- The data used in the financial calculations sheet submitted by the PP were validated against publicly available data. Thus, it satisfies the requirements of **paragraph 13** of EB 51 Annex 58.

- PP has presented the results of the sensitivity analysis in the PDD and the excel spreadsheet. The analysis is reproducible in the spreadsheet. Thus, it satisfies the requirements of **paragraph 17** of EB 51 Annex 58.
- The sensitivity analysis appropriately covers a range from +10% to -10% and hence satisfies the requirements of paragraph 18 of EB 51 Annex 58.

#### **4.7.5 Barrier analysis (if applicable)**

Not applicable.

#### **4.7.6 Common practice analysis**

Not applicable.

### **4.8 Application of Baseline Methodology and Calculation of Emission Factors**

The project activity uses the simplified baseline and monitoring methodology AMS I.D version 15. The applicability conditions of the methodology have been discussed in section 4.5 above. The PP has correctly identified the baseline as paragraph 10 of the methodology. This has been described in section 4.7 above.

**Baseline emissions** – The combined margin emission factor, baseline emissions and emission reductions calculations have been mentioned in the emission reduction excel sheet<sup>/2/</sup> and the PDD. The baseline emissions in Tco<sub>2</sub> due to the project have been calculated as the product of the net electricity supplied to the grid and the grid emission factor as per the combined margin approach described in the 'Tool to calculate the emission factor for an electricity system' (version 01.1).

The grid emission factor has been arrived at as per paragraph 11(a) of the methodology (as mentioned in section 4.7 above) in the following manner. The values of OM and BM have been determined ex-ante as per the CEA database version 4<sup>/39/</sup>, which is published by the Ministry of Power, Government of India. The CEA is the sole authority for publication of such data in India. The version of the database referred to is the version that was available at the time of webhosting the PDD for the international stakeholder consultation. Thus, the selection of the values of OM & BM is appropriate. The OM, identified as 1.01 tCO<sub>2</sub>/MWh, has been determined as the average of the previous 3 years values mentioned in the CEA database. The value of BM has been identified, as 0.60 tCO<sub>2</sub>/MWh, directly from the CEA database. Weights of 50% each for OM and BM have been applied, as specified in the tool, to arrive at a combined margin emission factor of 0.805 tCO<sub>2</sub>/MWh.

**Specific Fuel Consumption**– It has been verified through DPR that primary fuel source would be used in project activity is rice husk. The specific fuel consumption of rice husk is determined as 1.1089 t/MWh from design calculation<sup>/2/</sup> and specified ex-ante for the entire crediting period<sup>/1.5/</sup>. This is found inline with paragraph 19 of AMS I.D version 15 and hence accepted.

The input parameters used in specific fuel consumption are considered from design specifications of boiler and turbine (as specified in purchase orders<sup>/6.b/ & /6.c/</sup>) and net calorific value of rice husk. The net calorific value of coal is sourced from Central Institute of Mining and Research (CSIR) Ministry of Science and Technology Government of India<sup>/50/</sup>. The calculation of determining specific fuel consumptions are found deemed correct<sup>/2/</sup>. The validation team has cross checked the value of specific fuel consumption with MERC Biomass Tariff Order<sup>/30/</sup> dated 08/08/2005 which confirms the specific fuel consumption of various project cases ranges from 1.02 t / MWh to 1.25 t/MWh. Hence the value of specific fuel consumption calculated for project activity is found deemed appropriate

**Project emissions** – The project activity involves the generation of electricity using biomass. Hence, there are no inherent project emissions associated with this project activity. However, the power required during the start-up of the plant on account of a periodic shut-down or maintenance shut-down would be drawn from a furnace oil based DG set. This furnace oil consumed would be monitored and the project emissions due to the combustion of the oil will be calculated as per the 'Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion' version 02. The PP has correctly used the formulae mentioned in Section II and; has described and specified all monitoring procedures in the PDD as per the requirements of section III of the tool, to calculate the project emissions. In case of usage of any fossil fuel, a conservative and accurate value of project emissions will be arrived at from the procedure mentioned in the PDD.

**Leakage** – Leakage has not been considered for the project activity. According to Methodology AMS I.D version 15, 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. The proposed project activity uses new energy generating equipment which has been verified from the purchase orders. Also, the leakage due to transportation of biomass is 0.71% of the annual emission reductions which is negligible. Thus, not considering leakage for the project activity is appropriate.

The validation team has confirmed that surplus biomass is available in the region and is discussed in the PDD. Leakage based on competing use of biomass is neglected as it is demonstrated that the quantity of available biomass in the region (e.g. 50 km radius), is more than 25 % larger than the quantity of biomass that is utilized including the project activity. The assessment of surplus biomass has been elaborated by MITCON Consultancy Services Ltd<sup>25/</sup>. The assessment report has been presented to the validation team and it can be confirmed that the data provided in the PDD is consistent to the biomass assessment report. Thus leakage due to competing uses for the biomass can be neglected inline with “General guidance on leakage in biomass project activities” version 03 (EB 47 annex 28).

**Emission Reductions** – Based on the values of baseline emissions, project emissions and leakage the annual emission reductions have been calculated as 497,660 tCO<sub>2</sub> over a 10 year crediting period.

### Discussion of CARs/CLs

CAR #8 was raised requesting the PP to clarify why Operating Margin (OM) and Build Margin (BM) has not been included as parameters in section B.6.2 of PDD and mention the complete details of Combined Margin (CM) in the same section. The PP has submitted a revised PDD including Operating Margin (OM), Build Margin (BM), and details of CM in section B.6.2 of PDD. Thus CAR #8 was closed.

CL #10 was raised requesting the PP to address the following issues:

- a. The baseline emission reductions calculation excel sheet with appropriate sources/references for each value used for calculation was not submitted. It was not clear about the different values of the emission reductions for first two years as compared to remaining years.

In response PP has provided the baseline emission reductions calculation sheet and explained that the different values for emission reductions for first two years are due to variation in the plant load factor in the initial years of run; as reported in the project DPR. The variation in PLF was also cross verified from MERC biomass tariff order which states that – “Based on information and DPRs furnished by Project holders, the Commission notes that most of the Project cases assume a plant capacity utilization of 70-75 % during the 1<sup>st</sup> year of operation, and 85 % to 90 % from the 2<sup>nd</sup> year onwards.

- b. As per section B.4 of PDD, project participant was requested to justify the selection of default weights for OM and BM as per the “CEA CO<sub>2</sub> baseline database for Indian power sector” applicable for project activity.

In response PP explained that default weights of 50% each on OM and BM is appropriate for biomass based power generation project, this can be verified through user guide published by CEA “CO<sub>2</sub> Baseline Database for the Indian Power Sector” version 04.

- c. It was not clear if the project activity is consuming any electricity from grid or using DG set in case of start up or emergency purpose?

In response PP clarified that any possibility of using fossil fuels for co-firing has been ruled out; hence the project activity emissions are not applicable under the current scenario. However, small quantity of fossil fuel may be used for start up of the boiler in the project activity. PP has installed F.O. based DG set to meet power demand during start-up of the plant. Thus F.O. consumption due to project activity will be monitored and this information has been included in section B.7.1 of revised PDD. Project emission due to combustion of fossil fuels will be calculated as per “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion”.

- d. It was not clear why the emission due the competitive use of biomass as per attachment C of appendix B has not addressed in the PDD.

In response PP has clarified that the quantity of surplus rice husk available in the command region (50 km radius), is more than 25% of the quantity of biomass that is utilized for the project activity. The same can be verified through biomass assessment study report. Also Hence as per paragraph 18 of attachment C to appendix B, leakage due to competing use for biomass can be neglected. Also

MEDA is entering into an agreement with biomass power project promoters to provide monthly details about fuel procurement and its usage. Precaution is also being taken to avoid overlap in biomass collection area by allocating biomass collection area according to the availability of biomass within the radius of 15 kms, 15-25 kms, 25-35 kms, and 50 kms from their project locations. This can be verified through notification published by MEDA on 10/08/2007.

- e. It was not clear why the leakage due to transportation of biomass has not been considered in the emission reductions calculation.

PP has clarified that command region for procurement of rice husk is within 50 km radius from the plant site and leakage emission due to transportation of biomass is 0.71% of the annual emission reductions which is not significant hence not considered for CER calculations. This can be verified through revised emission reductions calculation sheet.

Responses provided by the PP for the issues raised above were found satisfactory hence CL #10 was closed. Detailed discussions for each issue have been provided in annex 3 under CL #10.

### Opinion

Based on the above discussion and the requirements of paragraphs 88-92 of the VVM version 01.2 (EB 55 Annex 1), the validation team confirms that:

1. All assumptions and data used by the PP are listed in the PDD, including their references & sources
2. All documentation used by the PP as the basis for assumptions & source of data is correctly quoted & interpreted in the PDD
3. All values used in the PDD are reasonable in the context of the proposed CDM project activity
4. The baseline methodology AMS I.D version 15 has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions
5. All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

### 4.9 Application of Monitoring Methodology and Monitoring Plan

The project activity uses the simplified baseline and monitoring methodology AMS I.D version 15. The applicability conditions of the methodology have been discussed in section 4.5 above. As per paragraph 17 of the methodology AMS I.D version 15 *"Monitoring shall consist of metering the net electricity supplied by the project activity to the grid. Measurement results shall be cross-checked with records for sold electricity. Hourly measurement and monthly recording are required."* The project activity also uses the 'Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion' version 02, to calculate the project emissions in case of usage of fossil fuel for start-up purpose. Hence, in line with this, the PP has defined the following parameters in section B.7.1 of the PDD:

1.  $EG_y$  – This refers to the net electricity exported to the grid from the project activity. This value is obtained from the monthly energy meter reading records issued by the TPTCL. This value will be used for the emission reduction calculations. This parameter will be continuously measured and recorded on a monthly basis. The net electricity exported will be cross checked with the invoices raised.
2.  $Q_{biomass,y}$  – It refers to the quantity of biomass used for power generation in a year. The quantity of biomass used will be weighed on a weighbridge and will indicate the quantity of biomass used in the power generation process.
3.  $FC_{i,j,y}$  – It refers to the quantity of fossil fuel used for the start-up of the plant. In case of a solid fuel, it will be measure on the weigh bridge and in case of a liquid fuel it will be measured using volume meters, which shall be annually calibrated by external agencies approved by the government. The quantity of fuel used will be monitored continuously; recorded in the log book and cross checked against the fuel bills.
4.  $NCV_{i,y}$  – It refers to the net calorific value of the fossil fuel used for the start-up of the plant. The NCV will be obtained from the fuel suppliers or measured by the PP if the former is not available. NCV values will be obtained for each fuel delivery. Measurements, if any, will be undertaken in line with

national or international fuel standards. The PP will verify that the values are within the uncertainty range of the IPCC default values as provided in Table 1.2, Vol. 2 of the 2006 IPCC Guidelines. PP will also ensure that the laboratories calculating the NCV are ISO17025 accreditation or can justify that they comply with similar quality standards.

The PP has defined a detailed manpower chart in the PDD for data monitoring, collection and archiving. The energy meter (used to measure net saleable power) and the weighbridge will be calibrated annually by external agencies approved by government and maintained as per industry standards. The PP has also mentioned that all the monitored data would be archived on paper throughout the crediting period for a minimum of 2 years after the end of the crediting period. This is stated in section B.7.2 of the PDD. The validation team confirms that the description in the PDD can be implemented and the PP is capable of implementing the monitoring plan in the context of the project activity.

### Discussion of CARs/CLs

CAR #8 was raised requesting the PP to address the following issues:

- a. During the site visit and discussion with plant personnel it was accomplished that auxiliary consumption by project activity would be measured by separate electricity meter at site, however auxiliary consumption was not included as monitoring parameter in section B.7.1 of the PDD.

In response the PP has explained that auxiliary power consumption of the plant will be measured at the plant site, it is only the net saleable power which will be considered for CER estimation. Thus monitoring auxiliary consumption will not have any significance on CER estimation, as CER estimation will be done based on the net saleable power at the metering point, this was found to be satisfactory and hence accepted.

- b. Project participant did not include “specific fuel consumption” as an ex-ante parameter in section B.6.2 of PDD.

In response PP has clarified that only rice husk is being used in the project activity as biomass and specific fuel consumption of rice husk has been included in section B.6.2 of revised PDD and was found inline with paragraph 15 of methodology AMS I.D version 13 and paragraph 21 of AMS I.D version 15 and hence accepted.

- c. Calibration procedure for each instrument used in project activity was not reported in section B.7 of PDD.

In response the PP has submitted revised PDD mentioning calibration of instruments will be carried out annually by external agencies approved by government. This was found to be satisfactory, and hence was accepted.

Detailed discussions have been provided in annex 3 under CAR #8.

### Opinion

Based on the above discussion and the requirements of paragraphs 124 of the VVM version 01.2 (EB 55 Annex 1), the validation team confirms that:

1. The monitoring plan included in the PDD is based on the approved methodology AMS I.D version 15 which has been applied to the proposed CDM project activity
2. The monitoring plan is in compliance with the applied methodology AMS I.D version 15
3. The monitoring arrangements described in the monitoring plan are feasible within the project design
4. The PP has the ability to implement the monitoring plan as per the PDD

### 4.10 Environmental Impacts

The PP has not carried out an EIA for the proposed biomass based power generation project. The schedule of the notification S.O. 1533<sup>/40/</sup> published by the Ministry of Environment and Forests (MoEF), Government of India gives a list of the project activities that require a prior environmental clearance. According to this



schedule biomass based power generation projects do not require a prior environmental clearance and hence an EIA need not be carried out.

Prior to the start date of the project activity the PP had applied<sup>/10/</sup> to the MoEF, Government of India for an environmental clearance and has received the same through the

- Consent to Establish<sup>/12/</sup> issued by the Maharashtra Pollution Control Board dated 24/06/2008 with Consent No. BO/RO(P&P)/CC-308; and
- Environment clearance<sup>/11/</sup> issued by the Government of Maharashtra dated 22/01/2009 (No.2008/356/CR 50/TC-1)

## Opinion

The Validation team is of the opinion that the project complies with environmental regulations in India.

### 4.11 Local Stakeholder Comments

The local stakeholder consultation process has been described in detail, by the PP, in section E of the PDD.

The local stakeholders have been consulted during the course of obtaining the NOC from the Desaiganj Municipal Council. The PP had issued an application<sup>/13/</sup> to the Desaiganj Municipal Council dated 23/01/2008 requesting for an NOC to set up the proposed project activity. Based on this application a proclamation (public notice)<sup>/14/</sup> was published on 02/02/2008, by the municipal council, for the information of the local people and objections if any were invited. The municipal council received the signed objections from the local people on 14/02/2008. During the special meeting on the 27/02/2008, the local people who have raised the objections were invited to the meeting hall and the objections raised were discussed. After the 'for & against' discussions it was unanimously decided to award a NOC to the PP for setting up the biomass based power plant.

This has been verified from the proceedings of the special meeting for agenda no. 205 issued by the municipal council and submitted by the PP as a part of the NOC.

It is also confirmed, from the NOC and the attached proceedings issued by the municipal council, that local stakeholders were invited to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website.

## Discussion of CARs/CLs

CAR #12 was raised requesting the PP to address the following issues:

- a. Project participant was requested to provide copy of application to office of the Municipal Council in Desaignaj Wadsa seeking "No Objection" to set up the proposed biomass based power generation project and to clarify about the intention of this deed in view of local stakeholder's consultation meeting.

In response the PP has submitted application (dated 23/01/2008) to grant NOC from Desaiganj Municipal Council for setting up a biomass based power plant at the proposed site. On the basis of this application Municipal Council had issued a public notice on 10/03/2008. The PP has also clarified that; the NOC to implement the project activity would be issued only if the local stakeholders would not have any objection to the same. As a part of the process of issuing the NOC the Municipal Council arranged for a meeting of the local stakeholders to understand their concerns.

- b. Copy of notice published by Municipal Council for the information of general public in the region regarding the project activity was not submitted.

In response the PP has submitted copy of public notice (dated 10/03/2008) published by Municipal Council.

- c. Documentary evidence for the objections/comments received by local people for and against the proposed project activity and how due account was taken of any comments received, were not provided by the PP.

In response the PP has provided minutes of meeting held on 27/02/2008 mentions that the stakeholders who has objections were invited for the meeting, their sayings were heard and 'for and

against' discussions were held on their objections. It can be confirmed through the MoMs that the objections/comments of the local people were heard and addressed.

The response provided by the PP to the issues raised were found to be satisfactory, hence CAR #12 was closed. Detailed discussions have been provided in annex 3 under CAR #12.

### **Opinion**

According to the requirements of the paragraphs 128-129 of the VVM version 01.2 (EB 55 Annex 1), the validation team is of the opinion that the local stakeholder consultation process has been satisfactorily carried out.

## 5. Comments by Parties, Stakeholders and NGOs

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

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

The Project Design Document for this project was made available on the UNFCCC website <http://cdm.unfccc.int/Projects/Validation/DB/W9AZ15SLZ9J842SWWRYPPCX45AGMUK/view.html> and was open for comments from 19/05/2009 until 17/06/2009. Comments were invited through the UNFCCC CDM homepage

### 5.2 Compilation of all Comments Received

| Comment Number | Date Received | Submitter | Comment |
|----------------|---------------|-----------|---------|
| -              | -             | -         | -       |

### 5.3 Explanation of How Comments Have Been Taken into Account

Not applicable as no comments were received.



## 6. List of Persons Interviewed

| Date       | Name               | Position                        | Short Description of Subject Discussed   |
|------------|--------------------|---------------------------------|--|
| 30/6/2009  | Shiv Kumar Agrawal | MD (A. A. Energy Limited)       | Prior knowledge of CDM, Parallel actions taken to secure CDM revenue for project activity.   |
| 30/6/2009  | Swapnil Agrawal    | Director (A. A. Energy Limited) | Prior knowledge of CDM, Parallel actions taken to secure CDM revenue for project activity.   |
| 30/6/2009  | Badri Narayan      | Project Consultant              | Baseline selection, Applicability of methodology, Additionality and monitoring procedure. Monitoring procedure, monitoring parameters, operation maintenance, calibration and data recording |
| 10/05/2010 | Sunil Sharma       | Project Consultant              | Financial analysis and emission reduction calculations.  |

## 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):

- /1.1/ PDD Version 01 dated 13/05/2009 (Published for International Stakeholder Consultation)
- /1.2/ PDD Version 02 dated 05/08/2009
- /1.3/ PDD Version 03 dated 25/01/2010
- /1.4/ PDD Version 04 dated 29/06/2010
- /1.5/ PDD Version 05 dated 10/08/2010
- /2/ IRR & Emission Reduction Excel Sheet
- /3/ WACC Calculation excel spreadsheet
- /4/ MoC letter, dated 30/06/2010
- /5/ Host Country Approval No. 4/1/2009-CCC dated 01/05/2009

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):

### /6/ **Purchase Orders & Work Orders**

- a. Purchase Order issued to M/s Endel Weigh System Pvt. Ltd. For ENDEL Electronic Weigh Bridge, dated 04/08/2008 (Order No. WB/1/B2/588/08)
- b. Boiler Purchase contract between M/s A. A. Energy Limited Ltd & ISGEC John Thompson dated 20/08/2008
- c. Purchase Order issued to M/s Triveni Engineering & Industries Ltd. For 10 MW Steam Turbine, dated 20/09/2008 with reference to letter No. WEQP080105/R1 dated 25/08/2008
- d. Purchase Order issued to M/s Grip Engineers Pvt. Ltd. For 20 MT HOT Crane, dated 21/11/2008 with reference to Offer No. GEPL: MED: SPO: 291 (TB) dated 22/10/2008
- e. Purchase Order issued to M/s Thermax Ltd. For Electrostatic Precipitator, dated 21/11/2008 with reference to Offer Ref. No. EMS/NMP/08-09/E-6680, R2 dated 18/11/2008
- f. Work Order issued to M/s Macro Marvel Infrastructure Corporation Ltd for design & construction of Dia flue path & RCC straight chimney, dated 24/11/2008 with reference to Offer No. C/MMICL/AAEL / 1493/2008 dated 13/10/2008
- g. Purchase Order, issued to M/s Voltamp Transformers Ltd. For Auxiliary transformer, dated 01/12/2008 with reference to offer No. HS – 1150 / revised dated 02/12/2008
- h. Purchase Order, issued to M/s Voltamp Transformers Ltd. For Generator transformer, dated 01/12/2008 with reference to offer No. HS – 1150 / revised dated 02/12/2008
- i. Purchase Order, issued to M/s Himgiri Cooling Tower for RCC Cooling tower, FRP fan stack & dual speed motor, dated 02/12/2008 with reference to offer No. AS/AAE/LET/469 dated 21/11/2008 & offer No. AS/H.B.Belorkar/CT-1231 dated 06/11/2008
- j. Work Order issued to M/s IDEAL Constructions for construction of Power plant, dated 08/12/2008

### **NOC & Clearances**

- /7/ Clearance for setting up a 7.5 MW capacity biomass based power project issued by MEDA dated 04/10/2006 with ref. no. PGN/BPP-101/2006-07/6478
- /8/ Approval for enhancement of the project capacity from 7.5 MW to 10 MW issued by MEDA dated 30/04/2008 with reference to the clearance dated 04/10/2006 with ref. no. PGN/BPP-101/2006-07/6478
- /9/ NOC for setting up a 10 MW biomass based power plant issued by the Office of the Municipal Council, Desaiganj, Dist. Gadchorili dated 10/03/2008 (No. KV/NPDC/NV/75/- 2008)
- /10/ Application submitted to MoEF by M/s A. A. Energy Limited dated 31/03/2008 for grant of Environmental Clearance
- /11/ Environment clearance issued by the Government of Maharashtra dated 22/01/2009 (No.2008/356/CR 50/TC-1)
- /12/ Consent to Establish a 10 MW biomass based power project issued by the Maharashtra Pollution Control Board dated 24/06/2008 with Consent No. BO/RO(P&P)/CC-308

### **Local Stakeholder Consultation Process Documents**

- /13/ Application for the issuance of NOC addressed to the Desaiganj Municipal Council from M/s A A Energy Ltd dated 23/01/2008
- /14/ Public Notice issued by the Desaiganj Municipal Council dated 02/02/2008
- /15/ Letter issued by the Director, M/s A A Energy Ltd to a company representative directing him to attend the public meeting conducted by the Desaiganj Municipal Council on 27/02/2008 & letter addressed by the same employee to the Director dated 28/02/2008 with a report of the meeting

### **Prior Consideration of CDM – Letter mentioning commencement of project activity & intention to seek CDM status**

- /16/ Letter from the M/s A A Energy Ltd to Host Party DNA dated 19/09/2008
- /17/ Letter from the M/s A A Energy Ltd to the UNFCCC secretariat 19/09/2008

### **Loan related documents**

- /18/ Proposal for loan assistance issued by M/s A A Energy Ltd to IREDA dated 19/06/2008
- /19/ Proposal for loan assistance issued by M/s A A Energy Ltd to PTC financial services dated 08/11/2008
- /20/ Loan sanction letter issued by IREDA (Ref: 221/2488/GMG/2008/IREDA/8239) dated 18/12/2008
- /21/ Loan sanction letter issued by PTC financial services (File No. PFS/debit/AAE/DA0201001/I/14199) dated 25/02/2009

### **Other documents**

- /22/ Certified copy of the Board resolution dated 12/05/2008
- /23/ Certificate of Incorporation Consequent upon Change of Name on Conversion to Public Limited Company issued by the GOI-Ministry of Corporate Affairs dated 22/01/2008
- /24/ Contract between EVI & M/s A A Energy Ltd, for CDM advisory services dated 06/07/2008  
Letter issued by the Host Party DNA to M/s A A Energy Ltd dated 19/01/2009 for meeting with the National CDM Authority
- /25/ Biomass Assessment Study Report prepared by MITCON Consultancy Services Ltd. Dated March 2008 with Doc. No. GPD/BAS/07-08/031(F)
- /26/ Detailed Project report prepared by MITCON Consultancy Services Ltd. (Ref:Doc. No. GPD/DPR/07-08/034(F) finalized in April 2008
- /27/ Statement of Analysis of rice husk sample issued by the Central Institute of Mining & Fuel Research dated 08/01/2008 (QP/RQA/F/15A)
- /28/ PPA between TPTCL & M/s A A Energy Ltd dated 24/05/2008
- /29/ Agreement between MEDA & M/s A A Energy Ltd dated 12/03/2009
- /30/ MERC Biomass tariff order dated 08/08/2005
- /31/ Review of MERC Biomass Tariff order dated 25/03/2009
- /32/ Declaration issued by Kothari Rathi & Associates Chartered Accountants dated 12/04/2010
- /33/ Certificate issued by Kothari Rathi & Associates Chartered Accountants dated 17/05/2010 regarding the project cost & source of funds
- /34/ Letter of Undertaking issued by M/s A A Energy Ltd dated 22/04/2010
- /35/ Declaration by PP regarding no change in technology
- /36/ Risk Free return: <http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/86544.pdf>
- /37/ Project web page:  
<http://cdm.unfccc.int/Projects/Validation/DB/W9AZ15SLZ9J842SWWRYPPCX45AGMUK/view.html>
- /38/ BSE 500: <http://www.bseindia.com/about/abindices/bse500.asp>
- /39/ CEA database Version 4 (Ministry of Power, Government of India)  
<http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm>
- /40/ MoEF notification for EIA – <http://envfor.nic.in/legis/eia/so1533.pdf> dated 14th September 2006
- /41/ Suppliers Quotations for rice husk invited during 2008
  - i. Dange Rice Mill, dated 24/03/2008
  - Ajay Rice Mill, dated 22/03/2008
- /42/ Letter regarding Biomass historical prices in Maharashtra by MITCON Consultancy Services Pvt Ltd, dated 17/08/2010
- /43/ Letter regarding wages and admin and general expenses by Kothari Rathi & Associates Chartered Accountants dated 10/08/2010
- /44/ Biomass Suppliers Quotations invited during 2009:

- i. Ajay Rice Mill, dated 25/12/2009
- ii. Shri Krishna Rice Mill, dated 25/04/2009
- iii. Lalani Rice Mill, dated 25/12/2009
- iv. Dange Rice Mill, dated 25/12/2009
- /45/ Certificate issued by Assistant Engineer Maharashtra State Electricity Transmission company Limited for Synchronization of power plant ,dated 30/04/2010
- /46/ Invoices raised by biomass suppliers:
  - i. Shri Sai Trading Corporation(invoice ref no-05), dated 25/06/2010
  - ii. Raj Sales agriculture commodity suppliers(invoice ref no-018),dated 25/06/2010
  - iii. Bhumika Traders agriculture commodity suppliers(invoice ref no-0046),dated 22/07/2010
  - iv. Smit Agency (invoice ref no-47),dated 22/07/2010
- /47/ Bank Account Statement issued by State Bank of India, dated 31/08/2010
- /48/ Similar projects registered under CDM in the same region
  - i. Project UN No-1541(<http://cdm.unfccc.int/Projects/DB/DNV-CUK1200561784.74/view>)
  - ii. Project UN No-2129(<http://cdm.unfccc.int/Projects/DB/DNV-CUK1218610645.3/view>)
  - iii. Project UN No-2119(<http://cdm.unfccc.int/Projects/DB/DNV-CUK1218560242.84/view>)
  - iv. Project UN No- 2115(<http://cdm.unfccc.int/Projects/DB/DNV-CUK1218555402.96/view>)
- /49/ Acknowledgement issued by the Ministry of Commerce & Industry, Government of India, No. 85/SIA/IMO/2008 dated 14/01/2008
- /50/ NCV Report by Central Institute of Mining and Research (CSIR) Ministry of Science and Technology Government of India(ref:N/IV-7/QP/RQA/F/15A),dated 08/01/2008

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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 “**Biomass based power generation project in Maharashtra, India.**” 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? |
|--|---|--|--|
| 1. Host Country Approval (HCA)   | Host Country Approval submitted   | Host Country Approval <sup>/5/</sup>   | Appropriate and accepted                               |
| 2. Modalities of communication of the project activity   | MoC provided by PP  | MoC <sup>/4/</sup>   | Appropriate and accepted                               |
| 3. Ownership documents and licenses which will allow the implementation of the proposed project activity at the site | NOC, Clearances, etc have been submitted by PP  | NOC <sup>/9/</sup> , Consent to establish <sup>/12/</sup>                      | Appropriate and accepted                               |
| 4. Detailed Technical Specification & purchase orders of all equipments involved in project activity                 | Purchase order, with detailed technical specifications for project activity has been checked              | Purchase order & work orders <sup>/6/</sup>                                    | Appropriate and accepted                               |
| 5. Biomass assessment study report prepared by third party or published source                                       | PP has submitted the biomass assessment study report prepared by a third party                            | BAS report <sup>/25/</sup>   | Appropriate and accepted                               |
| 6. Detail Project Report(DPR) for project activity   | PP has submitted the DPR for the project activity   | DPR <sup>/26/</sup>  | Appropriate and accepted                               |
| 7. MEDA clearance for setting up the proposed project  | PP has submitted the clearance and approval for enhancement issued by MEDA                                | MEDA clearance <sup>/7/</sup> , MEDA approval <sup>/8/</sup>                   | Appropriate and accepted                               |
| 8. No objection certificate from MPCB and Environmental clearance from Maharashtra government                        | Environmental clearance & Consent to establish have been submitted by the PP                              | Environmental Clearance <sup>/11/</sup> , Consent to establish <sup>/12/</sup> | Appropriate and accepted                               |
| 9. Evidence for no use of ODA for project activity   | PP has submitted a certificate issued by a CA which mentions the source of funds for the project activity | CA Certificate <sup>/33/</sup>   | Appropriate and accepted                               |

| Issue  | Findings  | Source/Mean of Verification   | Further Action / Clarification / Information Required? |
|--|---|---|--|
| 10. Evidence for CDM consideration. Chronology of events for the project activity.   | PP has submitted the letters submitted to the Host Party DNA and UNFCCC secretariat as evidence for prior consideration of CDM.   | Host party DNA Letter <sup>/16/</sup> , UNFCCC letter <sup>/17/</sup>                               | Appropriate and accepted                               |
| 11. Excel sheet for calculation of emission reductions with sources of data used for calculation                                       | PP has submitted the ER excel sheet with the sources of data used for the calculation   | IRR & ER excel sheet <sup>/2/</sup>   | Appropriate and accepted                               |
| 12. Evidence is required to be submitted that the technology used would not be changed during the crediting period.                    | PP has submitted a declaration regarding the same   | Declaration <sup>/35/</sup>   | Appropriate and accepted                               |
| 13. Financial calculation sheets, IRR calculations and source of each assumptions used, Suitability of Benchmark, documentary evidence | PP has submitted the ER excel sheet with the sources of data used for the calculation and the corresponding documentary evidence.   | IRR & ER excel sheet <sup>/2/</sup> , WACC excel sheet <sup>/3/</sup>                               | Appropriate and accepted                               |
| 14. Evidence for start date of the project activity  | PP has submitted the boiler purchase agreement as evidence for starting date of the project activity  | Boiler Purchase Agreement <sup>/6b/</sup>   | Appropriate and accepted                               |
| 15. Proof for media used to invite the local stakeholders; date of stakeholders meeting and minutes of the meeting                     | PP has explained to the validation team the entire process of stakeholder consultation and has submitted the application for issuance of NOC; public notice & NOC as documentary evidence for support | application <sup>/13/</sup> for issuance of NOC; public notice <sup>/14/</sup> & NOC <sup>/9/</sup> | Appropriate and accepted                               |
| 16. Debundling criteria need to be checked during site visit   | The project is not a not a debundled component of a large-scale project activity  | Site Visit  | Appropriate and accepted                               |

Pls. Note: Local Assessor/ Lead Assessor may add to this list during the site visit.

## 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 01.1 (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 26<sup>th</sup> August 2002 and is allowed to participate.<br/><a href="http://maindb.unfccc.int/public/country.pl?country=IN">http://maindb.unfccc.int/public/country.pl?country=IN</a></p> <p>Host Country Approval from Designated National Authority is to be provided by the project proponent.</p> <p>HCA provided by PP.</p> | <p>CAR #1 closed</p> <p>Y</p> |
| <p>1.2. If the project participant(s) listed in the PDD published at international stakeholder<sup>1</sup> consultation are not included in the PDD</p>  | <p>EB 30 Para. 41.</p>   | <p>Not Applicable</p>   | <p>Y</p>                      |

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



| Requirement  | Reference   | Comments   | Conclusion/CARs/CLs |
|--|---|--|---------------------|
| submitted with request for registration, a letter should be obtained from the withdrawn project participant(s) confirming its voluntary withdrawal from the proposed project activity.   |   |  |                     |
| 1.3. The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above   | VVM Para. 49/54   | Pending CAR #1   | CAR #1 closed<br>Y  |
| 2. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for a minimum of 30 days, and the project design document and comments have been made publicly available | VVM Para. 128<br><br>Marrakech Accords, CDM Modalities, §40                     | The project was listed on UNFCCC website from 19 <sup>th</sup> May 2009 to 17 <sup>th</sup> June 2009 at<br><br><a href="http://cdm.unfccc.int/Projects/Validation/DB/W9AZ15SLZ9J842SWWRYPPCX45AGMUK/view.html">http://cdm.unfccc.int/Projects/Validation/DB/W9AZ15SLZ9J842SWWRYPPCX45AGMUK/view.html</a><br><br>Number of comments received during web-hosting period - 0 | Y                   |
| 3. The project design document is in accordance with the applicable CDM requirements for completing PDDs.  | VVM Para. 57<br><br>Marrakech Accords, CDM Modalities, Appendix B, EB Decisions | The PDD is as per the CDM-PDD Version 03. The headings, logo, format & fonts are in accordance with that used in the PDD template.   | Y                   |
| 4. The project participants shall submit a letter on the modalities of communication (MoC) before submitting a request for registration  | EB-09<br>F_CDM_REG form   | PP has submitted the MoC for the project activity in the format prescribed in EB 45 annex 60   | Y                   |



Table 2PDD

| Checklist Question  | Ref. ID  | MoV*     | Comments  | Conclusion/<br>CARs/CLs |
|---|--|----------|---|-------------------------|
| <b>A. General Description of Project Activity</b>   |  |          |   |                         |
| <b>A.1. Project Title</b>   |  |          |   |                         |
| A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?   | VVM Para.56<br>Guidelines for completing a CDM-PDD (PDD) section A.1 | DR       | The project title 'Biomass based power generation project in Maharashtra, India', mentioned in section A.1 of the PDD, was verified on the UNFCCC website and was found to be unique.<br><br>The correctness of the project title will be further verified by checking the same against the project title in the HCA.<br><br>Pending closure of CAR #1  | CAR #1 closed<br><br>Y  |
| A.1.2. Is there an indication of a revision number and the date of the revision?  | VVM Para.56<br>PDD section A.1                                       | DR       | The version number and date of version has been mentioned in section A.1 of the PDD as Version: 1 & Date: 13/05/2009  | Y                       |
| <b>A.2. Description of the Project Activity</b>   |  |          |   |                         |
| 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<br>PDD section A.2<br>see also A.4, A.4.3 and B.3        | DR       | Section A.2 of the PDD mentions the purpose of the project, type of technology used & the contribution to sustainable development in the region under the headings of social, economic, environmental, & technological well being.  | Y                       |
| A.2.2. Does the information provide the reader with a clear understanding of the proposed CDM activity?                                       | VVM Para.60<br>PDD section A.2<br>see also A.4, A.4.3 and B.3        | DR<br>SV | The proposed CDM project activity is a Greenfield project involving the installation of a biomass based power generation plant. The project will install a 46 TPH travelling grate boiler and a 10 MW extraction cum condensing turbo generator to generate electricity which will be sold to TPTCL through the MSEDCL sub-station connected to the NEWNE grid.<br><br>This will be further verified during the site visit. | Closed<br><br>Y         |

| Checklist Question  | Ref. ID  | MoV*     | Comments  | Conclusion/<br>CARs/CLs                         |
|---|--|----------|---|---|
| A.2.3. Is all information provided consistent and in compliance with the actual situation or planning?                          | VVM Para.64<br>PDD section A.2<br>see also A.4,<br>A.4.2 and B.3 | DR<br>SV | Section A.4.2 of the PDD mentions that "Latest equipment, technology, & control instrumentation will be used for the power plant". Please clarify about the latest equipment, technology and explicate the same in section A.4.2<br><br>Please clarify the sentence "The generated power will be exported to the State utility's grid ..." It is not clear about auxiliary consumption, please clarify it.<br><br>The proposed CDM project activity is a green field project. The actual situation & planning will be checked during the site visit.<br><br>CL #2 raised & pending site visit.  | CL #2<br>closed<br><br>Y                        |
| A.2.4. Is all information provided consistent with details provided in further chapters of the PDD?                             | VVM Para.64<br>PDD section A.2                                   | DR       | As per section A.2 of the PDD it is mentions that the power generated by the proposed project will be exported to the Maharashtra State Electricity Distribution Company Limited (MSEDCL) sub-station however section B.3 of the PDD point out that electricity would be exported to Tata Power Trading Company Limited (TPTCL). Project participant needs to substantiate the link between MSEDCL and TPTCL and amend the respective sections of PDD accordingly to make clear identification of agency to which the power generated by the proposed project would be exported.<br><br>CL #3 raised. Also, pending closure of CARs/CLs in the subsequent sections. | CL #3<br>closed.<br>CARs/CLs<br>closed<br><br>Y |
| <b>A.3. Project Participants</b>  |  |          |   |   |
| A.3.1. Is the table required for the indication of project participants correctly applied?                                      | VVM Para. 51<br>PDD section A.3                                  | DR       | The table required for the indication of the project participants in Section A.3 of the PDD has been correctly applied as per the guidelines for completing the CDM-PDD.  | 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<br>PDD section A.3                                  | DR       | The information provided in Section A.3 of the PDD is consistent with the details provided in Annex 1.  | Y   |

| Checklist Question   | Ref. ID                        | MoV* | Comments  | Conclusion/<br>CARs/CLs  |
|--|--------------------------------|------|---|--------------------------|
| <b>A.4. Technical Description of the Project Activity</b>  |                                |      |   |                          |
| A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?<br>Are the latitude and longitude of the site indicated (decimal points) | VVM Para.64<br>PDD section A.4 | DR   | Section A.4 of the PDD mentions that the project activity is located at 20°37'22" North to 79°57'32" East. It also mentions the nearest rail head and airport to the project location. Thus the Information provided is detailed enough to find the project location.   | Y                        |
| A.4.2. Does the proposed CDM project activity involve the alteration of existing installations or process?   | VVM Para.64<br>PDD section A.4 | DR   | The proposed project activity is a new installation & does not involve the alteration of existing installations or processes. This will be further verified by checking the purchase orders.<br>Pending CL #2   | CL #2<br>closed<br><br>Y |
| A.4.3. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?  | VVM Para.64<br>PDD section A.4 | DR   | The Project participant is required to provide ownership documents & licenses which will allow the implementation of the proposed project activity at the site. Please provide all approvals required by the project activity.<br><br>CL #5 raised  | CL #5<br>closed<br><br>Y |
| A.4.4. Is the category(ies) of the project activity correctly identified?  | VVM Para.64<br>PDD section A.4 | DR   | The proposed CDM project activity is a Greenfield project involving the installation of a biomass based power generation plant. The project will install a 46 TPH travelling grate boiler and a 10 MW extraction cum condensing turbo generator to generate electricity which will be sold to TPTCL through the MSEDCL sub-station connected to the NEWNE grid. Hence, Section A.4.2 of the PDD correctly identifies the sectoral scope as: 1 Energy Industries (renewable & non-renewable sources) | Y                        |

| Checklist Question  | Ref. ID  | MoV*     | Comments   | Conclusion/<br>CARs/CLs  |
|---|--|----------|--|--------------------------|
| A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?                              | VVM Para.64<br>PDD section A.4<br>EB 52 Para. 13 | DR<br>SV | Please provide the Technical specifications and purchase orders for all equipments used in the project activity<br>CL #2 raised  | CL #2<br>closed<br><br>Y |
| A.4.6. Is the table required for the indication of projected emission reductions correctly applied?   | VVM Para.64<br>PDD section A.4                   | DR       | The table used for the indication of projected emission reductions has been correctly applied in section A.4 of the PDD as per the guidelines for completion of the CDM-PDD.   | Y                        |
| <b>A.5. Debundling</b>  |  |          |  |                          |
| A.5.1. Is the small-scale project activity a debundled component of a large scale project activity  | VVM Para. 134c<br>EB47 Annex 32                  | DR<br>SV | The PDD mentions that the project proponent does not have any other registered or 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 was 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                                   | DR<br>SV | The project activity is not a de-bundled project activity as mentioned in the PDD. The same was checked during the site visit.   | Y                        |
| <b>A.6. Public Funding</b>  |  |          |  |                          |
| A.6.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project                            | PDD section A.4.4                                | DR<br>SV | The PDD mentions that no ODA was used for the project activity. The chartered accountants certificate clearly indicates the sources of finance for the project activity. The same was verified during the site visit.  | Y                        |

| Checklist Question  | Ref. ID                                | MoV* | Comments  | Conclusion/<br>CARs/CLs |
|---|--|------|---|-------------------------|
| participants?   |  |      |   |                         |
| A.6.2. Is all information provided consistent with details provided by further chapters of the PDD (in particular annex 2)?                               | PDD section A.4.4                      | DR   | The information provided in Section A.4.4 of the PDD is consistent with that provided in Annex 2 of the PDD.  | Y                       |
| A.6.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance | PDD section A.4.4                      | DR   | Not applicable since there is no public funding for the project activity.   | Y                       |
| <b>B. Baseline and Monitoring Methodology</b>   |  |      |   |                         |
| <b>B.1. Choice and Applicability</b>  |  |      |   |                         |
| B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?  | VVM Para.68<br>PDD section B.1         | DR   | The methodology used is AMS I D version 15 which is an approved methodology and is valid.   | Y                       |
| B.1.2. Has the methodology (incl. the tools) been altered from the original version as referenced in the PDD?   | VVM Para.69<br>PDD section B (B.1-B.2) | DR   | The methodology AMS I.D version 15 and relevant tools have 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 project uses AMS I D version 15; the installed capacity of project activity is 10 MW which is less than the specified limit of 15 MW, the same was cross-checked during the site visit. | Y                       |

| Checklist Question   | Ref. ID  | MoV*     | Comments   | Conclusion/<br>CARs/CLs   |
|--|--|----------|--|---------------------------|
| 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<br>SV | The project activity is a biomass based power generation plant and supplies the same to the NEWNE regional grid. The methodology selected is AMS I.D. Version 15.<br>Pending closure of CAR #8   | CAR #8<br>closed<br><br>Y |
| B.1.5. Is the selected simplified methodology applicable to the project activity in the PDD?   | VVM<br>Para.75/66a/68/73<br>PDD section B<br>(B.1-B.2) | DR       | As per section B.2 of the PDD it has been mentioned that 'The project activity meets the applicability conditions of the approved consolidated methodology'. Project participant is required to justify the applicability of selected methodology for the project activity.<br>Please clarify which methodology the project activity follows.<br>CAR #8 raised | CAR #8<br>closed<br><br>Y |
| B.1.6. Does the project activity conform to one of the approved small-scale categories?  | VVM Para. 134b   | DR       | Pending closure of CAR #8  | CAR #8<br>closed<br><br>Y |
| B.1.7. Is the project activity a bundle of several small scale activities and if so does it contain any sub-bundles?   |  | DR<br>SV | The project activity is not a bundle of several small scale activities.  | Y                         |



| Checklist Question  | Ref. ID   | MoV*     | Comments   | Conclusion/<br>CARs/CLs   |
|---|---|----------|--|---------------------------|
| B.1.8. If the project activity is a bundle of several small scale activities, does the sum of the total bundle (including any subbundles) fall within the limits for small scale projects |   | DR<br>SV | Not applicable, as the project activity is not a bundle of several small scale activities.   | Y                         |
| B.1.9. If the project activity is a bundle of several small scale activities, has the form with information related to the bundle been submitted and is it correctly used                 |   | DR<br>SV | Not applicable, as the project activity is not a bundle of several small scale activities.   | Y                         |
| B.1.10. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?   | VVM<br>Para.75/66b/68<br>PDD section B<br>(B.1-B.2) | DR<br>SV | Pending closure of CAR #8  | CAR #8<br>closed<br><br>Y |
| <b>B.2. Project Boundary</b>  |   |          |  |                           |
| 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                   | VVM Para.79/76<br>/67a<br>PDD section B.3           | DR       | Project participant needs to mention the line diagram of project boundary in section B.3 of PDD and furnish the information's about project boundary as per the paragraph 6 of AMS I.D version 13<br>CAR #4 raised | CAR #4<br>closed<br><br>Y |

| Checklist Question  | Ref. ID   | MoV* | Comments                  | Conclusion/<br>CARs/CLs   |
|---|---|------|---------------------------|---------------------------|
| manner? Is there information on GHG emissions in proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to 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<br>PDD section B.3                              | DR   | Pending closure of CAR #4 | CAR #4<br>closed<br><br>Y |
| B.2.3. Does the project boundary include the physical delineation of the proposed CDM project activity?   | VVM Para.78/79<br>PDD section B.3<br>also see section A.4.2 | DR   | Pending closure of CAR #4 | CAR #4<br>closed<br><br>Y |

| Checklist Question   | Ref. ID   | MoV* | Comments   | Conclusion/<br>CARs/CLs |
|--|---|------|--|-------------------------|
| B.2.4. Are the project's geographical boundaries and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?  | VVM Para.76/79<br>PDD section B.3<br>also see section A.4.2 | DR   | Pending closure of CAR #4  | CAR #4 closed<br><br>Y  |
| <b>B.3. Identification of the Baseline Scenario</b>  |   |      |  |                         |
| 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<br>Para.67b.80/82/86<br>PDD Section<br>B.4/B.5          | DR   | The baseline has been identified for proposed project activity as per the methodology AMS I D version 15 and mentioned clearly in the PDD.   | Y                       |
| B.3.2. Are all tools/procedures in the methodology correctly applied to identify the most reasonable baseline scenario? This includes all potential realistic and  | VVM<br>Para.81/82/86a-<br>d/83/84<br>PDD Section<br>B.4/B.5 | DR   | The discussion and determination of the chosen baseline is transparent and supported by the available data which is the present NEWNE grid. The data are available from CO <sub>2</sub> Baseline Database for the Indian Power Sector, Version 04. | Y                       |

| Checklist Question   | Ref. ID                                  | MoV* | Comments  | Conclusion/<br>CARs/CLs |
|--|--|------|---|-------------------------|
| credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-economic trends and political aspirations? |  |      |   |                         |
| B.3.3. Is the choice of the baseline compatible with the available data?   | VVM Para.86b-c/95<br>PDD Section B.4/B.5 | DR   | The baseline has been identified for proposed project activity as per the methodology AMS I D version 15 and mentioned clearly in the PDD.  | Y                       |
| B.3.4. Is conservativeness addressed in the way of identifying the baseline?   | VVM Para.90<br>PDD Section B.4/B.5       | DR   | The baseline for the proposed project activity has been identified as per the methodology AMS I D version 15 and mentioned clearly in the PDD. The data used for calculating the baseline has been taken from the CO <sub>2</sub> Baseline Database for the Indian Power Sector (Version 04) published by the Ministry of Power, Government of India. The date in this database has been conservatively calculated. Hence the baseline for the project activity has been conservatively identified. | Y                       |
| B.3.5. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?  | VVM Para.90/91<br>PDD Section B.4/B.5    | DR   | The methodology AMS I.D. Version 15 does not requires the identification of alternative baseline scenarios.   | 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         | VVM Para.86e/85<br>PDD Section B.4/B.5   | DR   | Not required as per methodology AMS I.D./Version 15   | Y                       |

| Checklist Question  | Ref. ID                                    | MoV* | Comments  | Conclusion/<br>CARs/CLs |
|---|--|------|---|-------------------------|
| activities that would take place in the absence of the proposed CDM project activity?   |  |      |   |                         |
| <b>B.4. Additionality</b>   |  |      |   |                         |
| B.4.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and by following all the required steps?   | VVM Para.67d/95<br>PDD Section B.1/B.4/B.5 | DR   | Project participant needs to clarify about the applicability of guidelines/tool which has been followed to demonstrate the additionality of proposed project activity and mention the same in section B.5 of PDD.<br>Project participant needs to justify how technological and common practice barriers are specific to project activity? Please substantiate these barriers with supportive documents<br>CAR #6 raised  | CAR #6 closed<br><br>Y  |
| B.4.2. In case of using the additionality tool:<br>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?<br>Are all steps followed in a transparent manner? | PDD Section B.1/B.4/B.5                    | DR   | Not applicable. PP has not used any additionality tool.   | Y                       |
| B.4.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with  | VVM Para.93/91<br>PDD Section B            | DR   | Please provide the financial analysis excel sheet with appropriate sources/references for each value used for analysis as per the para 6 of guidance on investment analysis<br>Project participant needs to check the debt interest rate for the project as per section B.5 of PDD and provide the copy of loan document<br>Please justify the selection of power companies for the calculation of beta value<br>Project participant needs to mention the break up capital cost for project activity with | CAR #6 closed<br><br>Y  |

| Checklist Question  | Ref. ID  | MoV* | Comments   | Conclusion/<br>CARs/CLs   |
|---|--|------|--|---------------------------|
| complete transparency to all available data and documentation?  |  |      | appropriate sources/references for each investment in section B.5 of PDD<br>Please clarify about the variation declared regarding to PLF in section B.5 of PDD and provide the evidence for the PLF value considered for project activity<br>CAR #6 raised   |                           |
| B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project?<br>If the project activity start date is prior to the validation is it discussed how the CDM was taken into account in the decision to go ahead with the project activity | VVM Para.102b<br>PDD Section B.5                             | DR   | Please provide the Seriousness CDM Consideration with chronology of events as per EB 41 Annex 46 and mention the same in section B.5 of PDD.<br>Please provide the copies of letters through which project participant had notified to UNFCCC and MoEF about their plans to develop the proposed project activity under CDM.<br>Please substantiate the statement mentioned in section B.5 "the documents through biomass assessment report, the project DPR and financial evaluation done as a part of DPR has been factored in with CDM revenues and the financials submitted to the lending agencies for project appraisal have also been factored in with CDM revenues"<br>CL#7 raised | CL #7<br>closed<br><br>Y  |
| B.4.5. If an investment analysis has been used, has it been demonstrated that the proposed project activity is economically or financially less attractive than at least one other alternative  | VVM Para.<br>106, 107, 108,<br>109 112a-c<br>PDD Section B.5 | DR   | Please justify how the investment "Additional cost of evacuation" as mentioned in section B.5 is inline with the paragraph 6 of ""Guidance on the Assessment of Investment Analysis (Version 02)"<br>Please clarify why project cost and net electricity export has not been considered as a variable parameter for sensitivity analysis<br>CAR #6 raised  | CAR #6<br>closed<br><br>Y |



| Checklist Question   | Ref. ID  | MoV* | Comments  | Conclusion/<br>CARs/CLs |
|--|--|------|---|-------------------------|
| without the revenue from the sale of CERs?   |  |      |   |                         |
| 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<br>PDD Section B.5               | DR   | Pending closure of CAR #6   | CAR #6 closed<br><br>Y  |
| B.4.7. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?             | VVM Para. 114<br>115a-b/116<br>PDD Section B.5 | DR   | Not applicable as barrier analysis has not been used  | Y                       |
| B.4.8. Is the discussion on additionality consistent with the identification of  | VVM Para. 105                                  | DR   | The methodology AMS I.D. Version 15 does not requires the identification of alternative baseline scenarios. | Y                       |

| Checklist Question   | Ref. ID                                   | MoV* | Comments  | Conclusion/<br>CARs/CLs |
|--|---|------|---|-------------------------|
| all plausible and credible baseline scenarios?   | PDD Section B.5                           |      |   |                         |
| B.4.9. If a barrier analysis has been used have the 'guidelines for objective demonstration and assessment of barriers' been followed? Have all applicable steps been considered and substantiated with objective evidence?          | VVM Para 113 EB<br>50 Annex 13            | DR   | Not applicable as barrier analysis has not been used  | Y                       |
| B.4.10. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity. Do they also abide by the same applicable laws and legislations? | VVM Para. 105<br>PDD Section<br>A.4.2/B.5 | DR   | The methodology AMS I.D. Version 15 does not requires the identification of alternative baseline scenarios. | Y                       |
| B.4.11. Has it been shown that the project is not common practice?   | VVM Para.<br>119a/b<br>PDD Section B.5    | DR   | Common practice analysis is not required by the methodology AMS I.D./Version 15.                            | Y                       |

| Checklist Question   | Ref. ID  | MoV* | Comments   | Conclusion/<br>CARs/CLs |
|--|--|------|--|-------------------------|
| B.4.12. What are the key distinctions between the project activity and any similar projects that are widely used as common practice? | VVM Para. 118, 119c/d<br>PDD Section B.5       | DR   | Common practice analysis is not required by the methodology AMS I.D./Version 15.   | Y                       |
| <b>B.5. Application of the Simplified Methodology</b>  |  |      |  |                         |
| B.5.1. Has the simplified methodology been applied correctly for determining <b>baseline emissions</b> ?                             | VVM Para. 91d<br>PDD Section B (B.6.1 –B.71)   | DR   | Please provide the emission reductions calculation excel sheet with appropriate sources/references for each value used for calculation. It is not clear about the different values of the emission reductions for first two years as compared to remaining years.<br>As per section B.4 of PDD, project participant needs to justify the selection of default weights for OM and BM as per the “CEA CO <sub>2</sub> baseline database for Indian power sector” applicable for project activity.<br>As per section B.4 of the PDD it is mentioned that the emission factor of the NEWNE grid will be used to calculate the baseline but step 1 of the same section revealed that ‘emissions generated due to the electricity generated by the Western regional grid will serve as the baseline for this project’. Project participant is requested to clarify this inconsistency.<br>Please clarify which version of ‘Tool to calculate the emission factor for an electricity system’ has been referred for proposed project activity<br>CL #10 raised | CL #10 closed<br>Y      |
| B.5.2. Has the simplified methodology been applied correctly for determining <b>project emissions</b> ?                              | VVM Para. 90/91d<br>PDD Section B (B.6.2-B.71) | DR   | Pending closure of CL #10.   | CL #10 closed<br>Y      |
| B.5.3. Has the simplified methodology been   | VVM Para.                                      | DR   | Please justify why the leakage due to transportation of biomass is insignificant and why   | CL #10 closed           |

| Checklist Question  | Ref. ID  | MoV* | Comments   | Conclusion/<br>CARs/CLs |
|---|--|------|--|-------------------------|
| applied correctly for determining <b>leakage</b> ?  | 91d<br>PDD Section B<br>(B.6.2 –B.71)                  |      | it is not considered in the calculation.<br>CL #10 raised  | Y                       |
| B.5.4. Where applicable, has the simplified methodology been applied correctly for the <b>direct calculation of emission reductions</b> ?   | VVM Para 88/91d<br>PDD Section B<br>(B.6.2 –B.71)      | DR   | It is not clear if the project activity is consuming any electricity from grid or using DG set in case of start up or emergency purpose. Please clarify why these emissions has not considered for calculation of emission reduction calculation.<br>Please clarify why the emission due the competitive use of biomass as per attachment C of appendix B has not addressed in the PDD.<br>CL #10 raised | CL #10 closed<br>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<br>Para.89/90/91<br>PDD Section B<br>(B.6.2 –B.71) | DR   | Pending closure of CL #10.   | CL #10 closed<br>Y      |
| B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?  | PDD Sections<br>B.5-C                                  | DR   | Pending closure of CL #10.   | CL #10 closed<br>Y      |

| Checklist Question  | Ref. ID                                     | MoV* | Comments   | Conclusion/<br>CARs/CLs         |
|---|---|------|--|---------------------------------|
| <b>B.6. Ex-ante Data and Parameters Used</b>  |   |      |  |                                 |
| B.6.1. Are the data provided in compliance with the methodology?  | VVM Para. 91/67c<br>PDD Section B.6.3/B.6.4 | DR   | Project participant needs to clarify why Operating Margin (OM) and Build Margin (BM) has not been included as parameters in section B.6.2 of PDD and mention the complete details of Combined Margin (CM) in the same section.<br>CAR #8 raised. Also, pending closure of CI #10 | CAR #8 & CL #10 closed<br><br>Y |
| B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?   | VVM Para. 91a/b<br>PDD Section B.6.3/B.6.4  | DR   | Pending closure of CAR #8 & CL #10   | CAR #8 & CL #10 closed<br><br>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 as PP has used the latest version of CO <sub>2</sub> Baseline Database for the Indian Power Sector, Version 04 which was available at the time of PDD submission   | Y                               |
| B.6.4. Is all the data appropriate and correctly applied to the CDM project activity?   | VVM Para. 91c<br>PDD Section B.6.3/B.6.4    | DR   | Pending closure of CAR #8 & CL #10   | CAR #8 & CL #10 closed<br><br>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<br>PDD Section B.6.3/B.6.4     | DR   | Pending closure of CAR #8 & CL #10   | CAR #8 & CL #10 closed<br><br>Y |
| B.6.6. If the project activity  | EB48 Annex 11.                              | DR   |  | CAR #6                          |

| Checklist Question   | Ref. ID                                | MoV* | Comments   | Conclusion/<br>CARs/CLs |
|--|--|------|--|-------------------------|
| uses the PLF does it follow the guidance provided in EB48 annex 11?  |  |      | Pending closure of CAR #6  | closed<br><br>Y         |
| <b>B.7. Calculation of Emissions Reductions</b>  |  |      |  |                         |
| B.7.1. Has the simplified methodology been applied correctly for determining <b>emission reductions</b> ?        | VVM Para. 91d<br>PDD Section A.4.3/B.6 | DR   | Please provide the emission reductions calculation excel sheet with appropriate sources/references for each value used for calculation. It is not clear about the different values of the emission reductions for first two years as compared to remaining years.<br>CL #10 raised | CL #10 closed<br><br>Y  |
| B.7.2. Are the emission reduction calculations documented in a complete and transparent manner?                  | VVM Para. 91e<br>PDD Section B.6       | DR   | Pending closure of CL #10  | CL #10 closed<br><br>Y  |
| B.7.3. Is the projection based on same procedures as used for later monitoring or acceptable alternative models? | PDD Section B.6                        | DR   | Pending closure of CL #10  | CL #10 closed<br><br>Y  |
| B.7.4. Is the calculation of the emission reduction correct?   | VVM Para. 91e<br>PDD Section B.6       | DR   | Pending closure of CL #10  | CL #10 closed<br><br>Y  |
| <b>B.8. Emission Reductions</b>  |  |      |  |                         |
| B.8.1. Is the form/table required for the indication of projected  | PDD Section A.4.3/<br>Section B.6      | DR   | The form/table for the projected emission reductions are correctly applied.  | Y                       |



| Checklist Question  | Ref. ID  | MoV* | Comments  | Conclusion/<br>CARs/CLs       |
|---|--|------|---|-------------------------------|
| emission reductions correctly applied?  |  |      |   |                               |
| 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/<br>Section B.6                                      | DR   | The proposed project activity is a green field project and the projections are inline with the time schedule. | Y                             |
| <b>B.9. Monitoring Methodology</b>  |  |      |   |                               |
| <p>B.9.1. Does the monitoring methodology provide a consistent approach in the context of all parameters to be monitored and further information provided by the PDD?</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>VVM Para. 67e<br/>PDD Section B.7-<br/>B.8 see also<br/>Annex 4</p> | DR   | Pending closure of CAR #8   | <p>CAR #8 closed</p> <p>Y</p> |
| B.9.2. Does the monitoring methodology apply consistently the choice  | PDD Sections B and C   | DR   | Pending closure of CAR #8   | CAR #8 closed                 |

| Checklist Question   | Ref. ID   | MoV* | Comments  | Conclusion/<br>CARs/CLs |
|--|---|------|---|-------------------------|
| of the option selected for monitoring both of project and baseline emissions?  |   |      |   | Y                       |
| <b>B.10. Data and Parameters Monitored</b>   |   |      |   |                         |
| B.10.1. Does the monitoring plan in the PDD comply with the simplified methodology? Provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period? | VVM Para. 91a/91d/121/79<br>PDD Section B.7-B.7.2 | DR   | During site visit and discussion with plant personnel it is accomplished that auxiliary consumption by project activity would be measured by separate electricity meter at site, please clarify why auxiliary consumption has not been included as monitoring parameter in section B.7.1 of PDD<br>Project participant did not include "specific fuel consumption" as an ex-ante parameter in section B.6.2 of PDD, please clarify how this is in line with paragraph 15 of methodology AMS I.D version 13<br>CAR #8 raised | CAR #8 closed<br><br>Y  |
| B.10.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the simplified methodology applied?   | PDD Section B.7-B.7.2/B.6.2                       | DR   | Choices of project GHG indicators are not required as per methodology AMS I.D./Version 15   | Y                       |
| B.10.3. Will it be possible to determine the specified project GHG indicators?   | PDD Section B.6.2-B.8                             | DR   | Choices of project GHG indicators are not required as per methodology AMS I.D./Version 15   | Y                       |
| B.10.4. Is the information given for each monitoring variable by the   | PDD Section B.6.2-B.7.1                           | DR   | Pending closure of CAR #8   | CAR #8 closed           |

| Checklist Question  | Ref. ID                 | MoV* | Comments                           | Conclusion/<br>CARs/CLs     |
|---|-------------------------|------|------------------------------------|-----------------------------|
| 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 biases or intended or unintended changes in data records? | PDD Section B.6.2-B.7.1 | DR   | Pending closure of CAR #8          | CAR #8 closed<br>Y          |
| B.10.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?  | PDD Section B.5-B.7.2   | DR   | Pending closure of CAR #8          | CAR #8 closed<br>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   | Pending closure of CAR #8 & CL #10 | CAR #8 & CL #10 closed<br>Y |

| Checklist Question   | Ref. ID  | MoV*     | Comments   | Conclusion/<br>CARs/CLs |
|--|--|----------|--|-------------------------|
| <b>B.11. Quality Control (QC) and Quality Assurance (QA) Procedures</b>  |  |          |  |                         |
| B.11.1. Is the selection of data undergoing quality control and quality assurance procedures complete?   | VVM Para. 121<br>Refer to all data within the PDD Inc. B.6.2-B.7.1 | DR       | Pending closure of CAR #8  | CAR #8 closed<br><br>Y  |
| B.11.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?                                  | Refer to all data within the PDD Inc. B.4/B.7.2/Annex 4            | DR       | The uncertainty of data will be covered in the QA/QC of each parameter   | Y                       |
| B.11.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?                | VVM Para 121   | DR       | Pending closure of CAR #8  | CAR #8 closed<br><br>Y  |
| B.11.4. Is it ensured that data will be bound to national or internal reference standards?   | VVM Para. 86d  | DR<br>SV | The data provided will be bound by national references and will be reproducible and this was cross-checked during the site visit.                    | 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 monitoring of the parameters will be done by calibrated third party meters and there are no chances for over estimating the emission reductions. | Y                       |

| Checklist Question  | Ref. ID                 | MoV*     | Comments   | Conclusion/<br>CARs/CLs |
|---|-------------------------|----------|--|-------------------------|
| <b>B.12. Operational and Management Structure</b>   |                         |          |  |                         |
| B.12.1. Is the authority and responsibility of project management clearly described?  | PDD Section B.8/Annex 1 | DR       | Management structure for the project activity has been described in the PDD. The same was checked during the site visit.   | Y                       |
| B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?  | PDD Section B.8/Annex 1 | DR       | The same has been described in the PDD and was cross-checked during the site visit.  | Y                       |
| B.12.3. Are procedures identified for training of monitoring personnel?   | PDD Section B.8/Annex 1 | DR<br>SV | No procedures for training of monitoring personnel have been identified in the PDD. This will be discussed during the site visit.                                  | Closed<br>Y             |
| <b>B.13. Monitoring Plan (Annex 4)</b>  |                         |          |  |                         |
| B.13.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?                                   | VVM Para. 122a          | DR       | The monitoring plan has been developed specifically for this project activity and is mentioned in Section B.7.2 & Annex 4 of the PDD.<br>Pending closure of CAR #8 | CAR #8<br>closed<br>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 | VVM Para. 122b          | DR       | The monitoring plan has been developed specifically for this project activity and is mentioned in Section B.7.2 & Annex 4 of the PDD.<br>Pending closure of CAR #8 | CAR #8<br>closed<br>Y   |

| Checklist Question   | Ref. ID          | MoV* | Comments   | Conclusion/<br>CARs/CLs |
|--|------------------|------|--|-------------------------|
| ensuring data quality?   |                  |      |  |                         |
| 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   | This is mentioned in section B.7.2 of the PDD  | Y                       |
| B.13.4. Are procedures identified for calibration of monitoring equipment?   | VVM Para. 122a-c | DR   | Project participant needs to mention the calibration procedure for each instrument used in project activity as per section B.7.1 of PDD<br>CAR #8 raised | CAR #8 closed<br><br>Y  |
| B.13.5. Are procedures identified for maintenance of monitoring equipment and installations?   | VVM Para. 122a-c | DR   | This is covered in the operations structure covered in section B.7.2 of the PDD  | 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   | Project participant has mentioned procedure for day to day records and storage of records in section B.7.2 of the PDD.                                   | Y                       |
| B.13.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing  | VVM Para. 122a-c | DR   | This is in section B.7.2 of the PDD  | Y                       |



| Checklist Question   | Ref. ID                              | MoV*     | Comments   | Conclusion/<br>CARs/CLs |
|--|--------------------------------------|----------|--|-------------------------|
| redundant reconstruction of data in case of monitoring problems?   |                                      |          |  |                         |
| B.13.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?        | VVM Para.122a-c                      | DR       | As per section B.7.2 of the PDD the data will be thoroughly checked before using the same for emission reduction calculations.                                       | Y                       |
| B.13.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally? | VVM Para. 122a-c                     | DR       | The information provided in section B.7.2 of the PDD identifies the procedure for project performance reviews.   | Y                       |
| B.13.10. Describe the ability of the project participants to implement the monitoring plan.  | VVM Para. 122c                       | DR<br>SV | The proposed CDM project activity is a green field project. The description of the monitoring plan indicates the ability of the PP to implement the monitoring plan. | Y                       |
| <b>B.14. Baseline Details</b>  |                                      |          |  |                         |
| B.14.1. Is there any indication of a date when determining the baseline?   | PDD Section B.8/Annex 3              | DR       | The date of baseline determination is 13/05/2009 as per section B.8 of the PDD.  | Y                       |
| B.14.2. Is this consistent with the time line of the PDD history?  | Also see revision history of the PDD | DR       | The date of baseline determination is consistent with the time line of the PDD history.  | Y                       |
| B.14.3. Is all data required   | PDD Annex 3                          | DR       | Yes, annex 3 provides all data in a complete manner  | Y                       |

| Checklist Question  | Ref. ID   | MoV* | Comments   | Conclusion/<br>CARs/CLs |
|---|---|------|--|-------------------------|
| provided in a complete manner by annex 3 of the PDD?  |   |      |  |                         |
| <b>C. Duration of the Project / Crediting Period</b>  |   |      |  |                         |
| C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?   | VVM Para. 102a-c<br>PDD Section C.1.1/C.1.2         | DR   | Project participant need to provide the evidence for start date of project activity as per paragraph 67 of EB 41 meeting report.<br>The starting date of the project activity as mentioned, in the Section C.1.1 of PDD version 01 is 20/08/2009 (Boiler purchase order date).Project Participant is required to clarify how a purchase order can be post-dated.<br>CL #11 raised. | CL #11 closed<br><br>Y  |
| C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)? | VVM Para. 102a<br>PDD Section C.2/C.2.1/C.2.2       | DR   | The total number of crediting years as mentioned in section A.4.3 of PDD may mislead as 10 <sup>5</sup> , PP requested to put the footnote in first column for better clarity and understanding.<br>CL #10 raised  | CL #10 closed<br><br>Y  |
| C.1.3. Does the project's operational lifetime exceed the crediting period  | VVM Para. 102a<br>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<br>PDD Section C.1.1/C.2.1.1     | DR   | Pending closure of CL #11  | CL #11 closed<br><br>Y  |

| Checklist Question   | Ref. ID                             | MoV* | Comments   | Conclusion/<br>CARs/CLs |
|--|-------------------------------------|------|--|-------------------------|
| <b>D. Environmental Impacts</b>  |                                     |      |  |                         |
| D.1.1. Does the project comply with environmental legislation in the host country?   | VVM Para. 131/134d<br>PDD section D | DR   | As per the notification dated 14 <sup>th</sup> September 2006 by Ministry of Environment & Forests (MoEF), Govt. of India, biomass based power generation projects are not included in the list of projects that have to get Prior Environmental Clearance either from State or Central Govt. authorities and hence no EIA study required to be conducted. | Y                       |
| D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?                   | VVM Para. 131<br>PDD section D      | DR   | Not applicable since an EIA is not required.   | Y                       |
| D.1.3. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved? | VVM Para. 131<br>PDD section D      | DR   | As per the notification dated 14 <sup>th</sup> September 2006 by Ministry of Environment & Forests (MoEF), Govt. of India, biomass based power generation projects are not included in the list of projects that have to get Prior Environmental Clearance either from State or Central Govt. authorities and hence no EIA study required to be conducted. | Y                       |
| D.1.4. Will the project create any adverse environmental effects?  | VVM Para. 131<br>PDD section D      | DR   | The project activity involves the establishment of a renewable energy based power plant and hence no adverse environmental effects.  | Y                       |
| D.1.5. Are trans-boundary environmental impacts considered in the analysis?  | VVM Para. 131<br>PDD section D      | DR   | Not applicable since an EIA is not required for the project activity.  | Y                       |
| D.1.6. Have identified environmental impacts been addressed in the project design?   | VVM Para. 131<br>PDD section D      | DR   | Not applicable since an EIA is not required for the project activity.  | Y                       |

| Checklist Question   | Ref. ID                           | MoV*     | Comments   | Conclusion/<br>CARs/CLs |
|--|-----------------------------------|----------|--|-------------------------|
| <b>E. Stakeholder Comments</b>   |                                   |          |  |                         |
| E.1.1. Have relevant stakeholders been consulted?  | VVM Para. 128a<br>PDD Section E.1 | DR<br>SV | Pending closure of CAR #12   | CAR #12 closed<br><br>Y |
| E.1.2. Have appropriate media been used to invite comments by local stakeholders?            | VVM Para. 128a<br>PDD Section E.1 | DR<br>SV | Project participant needs to provide copy of application to office of the Municipal Council in Desaignaj Wadsa seeking "No Objection" to set up the proposed biomass based power generation project and clarify about the intention of this deed in view of local stakeholders consultation meeting<br><br>Please provide copy of notice published by Municipal Council for the information of general public in the region regarding the project activity<br><br>CAR #12 raised | CAR #12 closed<br><br>Y |
| E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner? | VVM Para. 128b<br>PDD Section E.1 | DR<br>SV | Pending closure of CAR #12   | CAR #12 closed<br><br>Y |
| E.1.4. Is a summary of the stakeholder comments received provided?                           | VVM Para. 128b<br>PDD Section E.2 | DR<br>SV | Pending closure of CAR #12   | CAR #12 closed<br><br>Y |
| E.1.5. Has due account been taken of any stakeholder comments received?                      | VVM Para. 128b<br>PDD Section E.3 | DR<br>SV | Project participant needs to provide the documentary evidences for the objections/comments received by local people for and against the proposed project activity and how due account was taken of any comments received<br><br>CAR #12 raised   | CAR #12 closed<br><br>Y |

## References

| Reference ID | Title / Description   | Comments  |
|--------------|---|---|
| /3.1/        | PDD Version 01 dated 13/05/2009 (Published for International Stakeholder Consultation)  | Table 2 section A, B, C, D and E  |
| /1.4/        | PDD Version 02 dated 05/08/2009   | Checked for CDM guidelines and necessary corrections  |
| /1.3/        | PDD Version 03 dated 25/01/2010   | Checked for CDM guidelines and necessary corrections  |
| /1.4/        | PDD Version 04 dated 29/06/2010   | Checked for CDM guidelines and necessary corrections  |
| /1.5/        | PDD Version 05 dated 10/08/2010   |   |
| /2/          | IRR & Emission Reduction Excel Sheet  | Checked for financial calculations & emission reduction calculations  |
| /3/          | WACC calculation sheet  | Checked for WACC calculations   |
| /4/          | MoC, dated 30/06/2010   | Checked for contact information   |
| /5/          | Host Country Approval No. 4/1/2009-CCC dated 01/05/2009   | Checked for project title and name of PP  |
| /6/          | <b><u>Purchase Orders &amp; Work Orders</u></b>   |   |
|              | <ul style="list-style-type: none"> <li>a. Purchase Order issued to M/s Endel Weigh System Pvt. Ltd. For ENDEL Electronic Weigh Bridge, dated 04/08/2008 (Order No. WB/1/B2/588/08)</li> <li>b. Boiler Purchase contract between M/s A. A. Energy Limited Ltd &amp; ISGEC John Thompson dated 20/08/2008</li> <li>c. Purchase Order issued to M/s Triveni Engineering &amp; Industries Ltd. For 10 MW Steam Turbine, dated 20/09/2008 with reference to letter No. WEQP080105/R1 dated 25/08/2008</li> <li>d. Purchase Order issued to M/s Grip Engineers Pvt. Ltd. For 20 MT HOT Crane, dated 21/11/2008 with reference to Offer No. GEPL: MED: SPO: 291 (TB) dated 22/10/2008</li> <li>e. Purchase Order issued to M/s Thermax Ltd. For Electrostatic Precipitator, dated 21/11/2008 with reference to Offer Ref. No. EMS/NMP/08-09/E-6680, R2 dated 18/11/2008</li> <li>f. Work Order issued to M/s Macro Marvel Infrastructure Corporation Ltd for design &amp; construction of Dia flue path &amp; RCC straight chimney, dated 24/11/2008 with reference to Offer No. C/MMICL/AAEL / 1493/2008 dated 13/10/2008</li> <li>g. Purchase Order, issued to M/s Voltamp Transformers Ltd. For Auxiliary transformer, dated 01/12/2008 with reference to offer No. HS – 1150 / revised dated 02/12/2008</li> <li>h. Purchase Order, issued to M/s Voltamp Transformers Ltd. For Generator transformer, dated 01/12/2008 with reference to offer No. HS – 1150 / revised dated 02/12/2008</li> <li>i. Purchase Order, issued to M/s Himgiri Cooling Tower for RCC Cooling tower, FRP fan stack &amp;</li> </ul> | <p>6b – Checked for start date of the project activity</p> <p>Checked for parallel actions taken to secure CDM status</p> |

| Reference ID | Title / Description   | Comments   |
|--------------|---|--|
|              | dual speed motor, dated 02/12/2008 with reference to offer No. AS/AAE/LET/469 dated 21/11/2008 & offer No. AS/H.B.Belorkar/CT-1231 dated 06/11/2008<br>j. Work Order issued to M/s IDEAL Constructions for construction of Power plant, dated 08/12/2008                                  |  |
|              | <b><u>NOC &amp; Clearances</u></b>  |  |
| /7/          | Clearance for setting up a 7.5 MW capacity biomass based power project issued by MEDA dated 04/10/2006 with ref. no. PGN/BPP-101/2006-07/6478   | Checked for approval to set up project at the specified location |
| /8/          | Approval for enhancement of the project capacity from 7.5 MW to 10 MW issued by MEDA dated 30/04/2008 with reference to the clearance dated 04/10/2006 with ref. no. PGN/BPP-101/2006-07/6478   |  |
| /9/          | NOC for setting up a 10 MW biomass based power plant issued by the Office of the Municipal Council, Desaiganj, Dist. Gadchorili dated 10/03/2008 (No. KV/NPDC/NV/75/- 2008)   |  |
| /10/         | Application submitted to MoEF by M/s A. A. Energy Limited dated 31/03/2008 for grant of Environmental Clearance   |  |
| /11/         | Environment clearance issued by the Government of Maharashtra dated 22/01/2009 (No.2008/356/CR 50/TC-1)   |  |
| /12/         | Consent to Establish a 10 MW biomass based power project issued by the Maharashtra Pollution Control Board dated 24/06/2008 with Consent No. BO/RO(P&P)/CC-308  |  |
|              | <b><u>Local Stakeholder Consultation Process Documents</u></b>  |  |
| /13/         | Application for the issuance of NOC addressed to the Desaiganj Municipal Council from M/s A A Energy Ltd dated 23/01/2008   | Checked for local stakeholder consultation process               |
| /14/         | Public Notice issued by the Desaiganj Municipal Council dated 02/02/2008  |  |
| /15/         | Letter issued by the Director, M/s A A Energy Ltd to a company representative directing him to attend the public meeting conducted by the Desaiganj Municipal Council on 27/02/2008 & letter addressed by the same employee to the Director dated 28/02/2008 with a report of the meeting |  |
|              | <b><u>Prior Consideration of CDM – Letter mentioning commencement of project activity &amp; intention to seek CDM status</u></b>  |  |
| /16/         | Letter from the M/s A A Energy Ltd to Host Party DNA dated 19/09/2008   | Checked for serious CDM consideration                            |
| /17/         | Letter from the M/s A A Energy Ltd to the UNFCCC secretariat 19/09/2008   | Checked for serious CDM consideration                            |
|              | <b><u>Loan related documents</u></b>  |  |
| /18/         | Proposal for loan assistance issued by M/s A A Energy Ltd to IREDA dated 19/06/2008   | Checked for loan approval process                                |
| /19/         | Proposal for loan assistance issued by M/s A A Energy Ltd to PTC financial services dated 08/11/2008  | Checked for loan approval process                                |

| Reference ID | Title / Description  | Comments  |
|--------------|--|---|
| /20/         | Loan sanction letter issued by IREDA (Ref: 221/2488/GMG/2008/IREDA/8239) dated 18/12/2008  | Checked for loan amount & interest on term loan   |
| /21/         | Loan sanction letter issued by PTC financial services (File No. PFS/debit/AAE/DA0201001/I/14199) dated 25/02/2009  | Checked for loan amount & interest on term loan   |
|              | <b><u>Other documents</u></b>  |   |
| /22/         | Certified copy of the Board resolution dated 12/05/2008  | Checked for parallel actions taken to secure CDM status                                     |
| /23/         | Certificate of Incorporation Consequent upon Change of Name on Conversion to Public Limited Company issued by the GOI-Ministry of Corporate Affairs dated 22/01/2008 | Checked for name of PP  |
| /24/         | Contract between EVI & M/s A A Energy Ltd, for CDM advisory services dated 06/07/2008  | Checked for parallel actions taken to secure CDM status                                     |
|              | Letter issued by the Host Party DNA to M/s A A Energy Ltd dated 19/01/2009 for meeting with the National CDM Authority   | Checked for HCA process   |
| /25/         | Biomass Assessment Study Report prepared by MITCON Consultancy Services Ltd. Dated March 2008 with Doc. No. GPD/BAS/07-08/031(F)                                     | Checked for project details and values used for investment analysis                         |
| /26/         | Detailed Project report prepared by MITCON Consultancy Services Ltd. Dated April 2008 with Doc. No. GPD/DPR/07-08/034(F) (date: December 31, 2007)                   | Checked for project details and values used for investment analysis                         |
| /27/         | Statement of Analysis of rice husk sample issued by the Central Institute of Mining & Fuel Research dated 08/01/2008 (QP/RQA/F/15A)                                  | Checked for quality of rise husk  |
| /28/         | PPA between TPTCL & M/s A A Energy Ltd dated 24/05/2008  | Checked to confirm grid connectivity, ownership, calibration responsibilities & tariff rate |
| /29/         | Agreement between MEDA & M/s A A Energy Ltd dated 12/03/2009   | Checked to confirm grid connectivity, ownership & calibration responsibilities              |
| /30/         | MERC Biomass tariff order dated 08/08/2005   | Checked for PLF Value   |
| /31/         | Review of MERC Biomass tariff order dated 25/03/2009   | Checked for rick husk price   |
| /32/         | Declaration issued by Kothari Rathi & Associates Chartered Accountants dated 12/04/2010  | Checked for values used in financial calculations   |
| /33/         | Certificate issued by Kothari Rathi & Associates Chartered Accountants dated 17/05/2010 regarding the project cost & source of funds                                 | Checked to confirm no ODA   |



| Reference ID | Title / Description   | Comments  |
|--------------|---|---|
| /34/         | Letter of Undertaking issued by M/s A A Energy Ltd dated 22/04/2010   | Checked for ownership   |
| /35/         | Declaration by PP regarding no change in technology   | Checked for the undertaking for no substitution of project technology |
| /36/         | Risk Free return: <a href="http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/86544.pdf">http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/86544.pdf</a>   | Checked for values used in the IRR calculations                       |
| /37/         | Project web page:<br><a href="http://cdm.unfccc.int/Projects/Validation/DB/W9AZ15SLZ9J842SWWRYPPCX45AGMUK/view.html">http://cdm.unfccc.int/Projects/Validation/DB/W9AZ15SLZ9J842SWWRYPPCX45AGMUK/view.html</a>  | Checked for webhosting period during ISHC process                     |
| /38/         | BSE 500: <a href="http://www.bseindia.com/about/abindices/bse500.asp">http://www.bseindia.com/about/abindices/bse500.asp</a>  | Checked for values of indices used in the IRR calculations            |
| /39/         | CEA database Version 4(Ministry of Power, Government of India)<br><a href="http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm">http://www.cea.nic.in/planning/c%20and%20e/Government%20of%20India%20website.htm</a>   | Checked for data used to calculate emission factor                    |
| /40/         | MoEF notification for EIA – <a href="http://envfor.nic.in/legis/eia/so1533.pdf">http://envfor.nic.in/legis/eia/so1533.pdf</a> dated 14th September 2006   | Checked for EIA requirement for the project                           |
| /41/         | Suppliers Quotations for rice husk invited during 2008<br>ii. Dange Rice Mill, dated 24/03/2008<br>iii. Ajay Rice Mill, dated 22/03/2008  | Checked for price of rice husk  |
| /42/         | Letter regarding Historical price of Biomass by MITCON Consultancy Pvt Ltd,dated 17/08/2010   | Checked for historical trend of biomass price in Maharashtra          |
| /43/         | Letter regarding wages and admin and general expenses by Kothari Rath & Associates Chartered Accountants dated 10/08/2010   | Checked for actual cost incurred in admin expenses and labour charges |
| /44/         | Biomass Suppliers Quotations invited during 2009:<br>v. Ajay Rice Mill, dated 25/12/2009<br>vi. Shri Krishna Rice Mill, dated 25/04/2009<br>vii. Lalani Rice Mill, dated 25/12/2009<br>viii. Dange Rice Mill, dated 25/12/2009  |   |
| /45/         | Certificate issued by Assistant Engineer Maharashtra State Electricity Transmission company Limited for Synchronization of power plant ,dated 30/04/2010  | Checked for actual status of project activity                         |
| 46           | Invoices raised by biomass suppliers:<br>v. Shri Sai Trading Corporation(invoice ref no-05), dated 25/06/2010<br>vi. Raj Sales agriculture commodity suppliers(invoice ref no-018),dated 25/06/2010<br>vii. Bhumika Traders agriculture commodity suppliers(invoice ref no-0046),dated 22/07/2010<br>viii. Smit Agency (invoice ref no-47),dated 22/07/2010 | Checked for actual price of biomass                                   |

| Reference ID | Title / Description   | Comments  |
|--------------|---|---|
| /47/         | Bank Account Statement issued by State Bank of India, dated 31/08/2010  | Checked for the payment made by PP                        |
| /48/         | Similar projects registered under CDM in the same region<br>i. Project UN No-1541( <a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1200561784.74/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1200561784.74/view</a> )<br>ii. Project UN No-2129( <a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1218610645.3/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1218610645.3/view</a> )<br>iii. Project UN No-2119( <a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1218560242.84/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1218560242.84/view</a> )<br>iv. Project UN No- 2115( <a href="http://cdm.unfccc.int/Projects/DB/DNV-CUK1218555402.96/view">http://cdm.unfccc.int/Projects/DB/DNV-CUK1218555402.96/view</a> ) | Checked to verify the comparable parameters.              |
| /49/         | Acknowledgement issued by the Ministry of Commerce & Industry, Government of India, No. 85/SIA/IMO/2008 dated 14/01/2008  | Checked to confirm proposed capacity i.e. 10MW of project |
| /50/         | NCV Report by Central Institute of Mining and Research (CSIR) Ministry of Science and Technology Government of India(ref:N/IV-7/QP/RQA/F/15A),dated 08/01/2008  | Check for NCV of rice husk                                |

### A.3 Annex 3: Overview of Findings

#### Findings Overview Summary

|                     | CARs | CLs | FARs |
|---------------------|------|-----|------|
| Total Number raised | 05   | 07  |      |

|  |            |         |            |                                  |         |
|--|------------|---------|------------|----------------------------------|---------|
| Date:  | 09/07/2009 |         | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |         |
| Type:  | CAR        | Number: | 01         | Reference:                       | Table 1 |
| <b>Lead Assessor Comment:</b>  |            |         |            |                                  |         |
| Project participant is required to provide the Host Country Approval for project activity  |            |         |            |                                  |         |
| <b>Project Participant Response:</b>   |            |         |            | <b>Date:</b> 07/08/2009          |         |
| HCA letter has been issued to this project on 1 May 2009 from the MoEF.  |            |         |            |                                  |         |
| <b>Documentation Provided by Project Participant:</b>  |            |         |            |                                  |         |
| HCA letter issued by MoEF vide No.4/1/2009 – CCC dated 1 May 2009  |            |         |            |                                  |         |
| <b>Information Verified by Lead Assessor:</b>  |            |         |            |                                  |         |
| HCA for project activity has been checked & title of project, project participant details are verified with PDD version 02 dated 05/08/2009  |            |         |            |                                  |         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>   |            |         |            | <b>Date:</b> 08/10/2009          |         |
| Project participant has submitted the Host Country Approval (Ref: No-4/1/2009-CCC dated 01/05/2009) from Designated National Authority, Ministry of Environment and Forests for the proposed project activity.<br>The name of the project activity mentioned in HCA is the same as in section A.1 of the PDD version 02 and is accepted.<br>Thus CAR #1 was closed out |            |         |            |                                  |         |
| <b>Acceptance and Close out by Lead Assessor:</b>  |            |         |            | <b>Date:</b> 08/10/2009          |         |

|   |            |         |            |                                  |     |
|---|------------|---------|------------|----------------------------------|-----|
| Date:   | 09/07/2009 |         | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |     |
| Type:   | CL         | Number: | 02         | Reference:                       | A.2 |
| <b>Lead Assessor Comment:</b>   |            |         |            |                                  |     |
| <div>a. Please provide the Technical specifications and purchase orders for all equipments used in the project activity</div> <div>b. As section A.4.2 of the PDD mentions that “Latest equipment, technology &amp; control instrumentation will be used for the power plant”. Please clarify about the latest equipment, technology and explicate the same in section A.4.2</div> <div>c. Please clarify the sentence “The generated power will be exported to the State utility’s grid ...” It is not clear about auxiliary consumption, please clarify it.</div> |            |         |            |                                  |     |
| <b>Project Participant Response:</b>  |            |         |            | <b>Date:</b> 07/08/2009          |     |
| <div>a. Detailed technical specification has already been provided in Section A.4.2 of the PDD, all relevant purchase orders are enclosed herewith for your kind perusal.</div> <div>b. The sentence has been removed in the revised PDD to reflect the actual scenario and thus clarified.</div> <div>c. The sentence has been corrected to depict the actual scenario in the revised PDD, thus clarified.</div>   |            |         |            |                                  |     |
| <b>Documentation Provided by Project Participant:</b>   |            |         |            |                                  |     |

- k. Purchase Order issued to M/s Endel Weigh System Pvt. Ltd. for ENDEL Electronic Weigh Bridge, dated 04/08/2008 (Order No. WB/1/B2/588/08)
- l. Boiler Purchase contract between A. A. Energy Ltd & ISGEC John Thompson dated 20/08/2008
- m. Purchase Order issued to M/s Triveni Engineering & Industries Ltd. for 10 MW Steam Turbine, dated 20/09/2008 with reference to letter No. WEQP080105/R1 dated 25/08/2008
- n. Purchase Order issued to M/s Grip Engineers Pvt. Ltd. for 20 MT HOT Crane, dated 21/11/2008 with reference to Offer No. GEPL: MED: SPO: 291 (TB) dated 22/10/2008
- o. Purchase Order issued to M/s Thermax Ltd. for Electrostatic Precipitator, dated 21/11/2008 with reference to Offer Ref. No. EMS/NMP/08-09/E-6680, R2 dated 18/11/2008
- p. Work Order issued to M/s Macro Marvel Infrastructure Corporation Ltd for design & construction of Dia flue path & RCC straight chimney, dated 24/11/2008 with reference to Offer No. C/MMICL/AAEL / 1493/2008 dated 13/10/2008
- q. Purchase Order, issued to M/s Voltamp Transformers Ltd. for Auxiliary transformer, dated 01/12/2008 with reference to offer No. HS – 1150 / revised dated 02/12/2008
- r. Purchase Order, issued to M/s Voltamp Transformers Ltd. for Generator transformer, dated 01/12/2008 with reference to offer No. HS – 1150 / revised dated 02/12/2008
- s. Purchase Order, issued to M/s Himgiri Cooling Tower for RCC Cooling tower, FRP fan stack & dual speed motor, dated 02/12/2008 with reference to offer No. AS/AAE/LET/469 dated 21/11/2008 & offer No. AS/H.B.Belorkar/CT-1231 dated 06/11/2008
- t. Work Order issued to M/s IDEAL Constructions for construction of Power plant, dated 08/12/2008
- u. PDD Version 2 dated 05/08/2009

**Information Verified by Lead Assessor:**

All the above mentioned documents were verified.

Purchase orders provided were checked against the PDD version 2

Section A.2 & A.4.2 of the PDD version 2 dated 05/08/2009 was checked for the corrections made by the PP.

**Reasoning for not Acceptance or Acceptance and Close Out:**

**Date:** 08/10/2009

- a. The PP has provided the purchase orders and technical specifications for all equipment used in the project activity. These were checked against the details mentioned in section B.4.2 of revised PDD and found truthful, hence accepted.
- b. The PP has removed the statement “Latest equipment, technology, & control instrumentation will be used for the power plant” in section A.4.2 of the PDD version 2. The remaining information mentioned in section A.4 of the PDD reflects the actual scenario. This was checked and accepted.
- c. The PP has given an explanation about the auxiliary consumption in section A.2 of the PDD version 2 by mentioning that the generated power, after meeting the auxiliary power requirements, will be sold to Tata Power Trading Company Limited (TPTCL) and the net billable power will be metered at the Maharashtra State Electricity Distribution Company Limited's (MSEDCL's) 132 kV substation which is at a distance of 16 km from the project site in Brahmapuri. This reflects the actual practice, hence accepted.

Thus CL #2 was closed out

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

**Date:** 08/10/2009

|                        |            |         |            |                                  |       |
|------------------------|------------|---------|------------|----------------------------------|-------|
| Date:                  | 09/07/2009 |         | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |       |
| Type:                  | CL         | Number: | 03         | Reference:                       | A.2.4 |
| Lead Assessor Comment: |            |         |            |                                  |       |

|  |                         |
|--|-------------------------|
| As per section A.2 of the PDD it is mentions that the power generated by the proposed project will be exported to the Maharashtra State Electricity Distribution Company Limited (MSEDCL) sub-station however section B.3 of the PDD point out that electricity would be exported to Tata Power Trading Company Limited (TPTCL). Project participant needs to substantiate the link between MSEDCL and TPTCL and amend the respective sections of PDD accordingly to make clear identification of agency to which the power generated by the proposed project would be exported. |                         |
| <b>Project Participant Response:</b>   | <b>Date:</b> 07/08/2009 |
| This project will be supplying power to TPTCL and the saleable power will be measured at 132 kV MSEDCL substation in Brahmapuri. Relevant changes have been made in both the sections A.2 and B.3 respectively in the revised PDD to provide better clarity.   |                         |
| <b>Documentation Provided by Project Participant:</b>  |                         |
| Power Purchase Agreement between AAEL and TPTCL has been attached for your kind perusal. Please refer Page 3 of the PPA.   |                         |
| <b>Information Verified by Lead Assessor:</b>  |                         |
| Section A.2 & B.3 of PDD version 2 was checked for consistency in the name of party purchasing the power generated from the proposed project activity.<br>Power Purchase Agreement (PPA) between TATA Power Trading Company Ltd. (TPTCL) & A A Energy Ltd dated 24/05/2008 was verified.   |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>   | <b>Date:</b> 08/10/2009 |
| The PP has amended the Sections A.2 & B.3 of the PDD version 2 and mentioned consistently that the power generated by the proposed project activity will be sold to TATA Power Trading Company Ltd. (TPTCL). The net billable power will be metered by Maharashtra State Electricity Distribution Company Limited (MSEDCL) at the sub-station. This is also reflected in the Power Purchase Agreement and hence accepted.<br>Thus CL #3 was closed out.  |                         |
| <b>Acceptance and Close out by Lead Assessor:</b>  | <b>Date:</b> 08/10/2009 |

|   |            |            |                                  |                         |     |
|---|------------|------------|----------------------------------|-------------------------|-----|
| Date:   | 09/07/2009 | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |                         |     |
| Type:   | CAR        | Number:    | 04                               | Reference:              | A.4 |
| <b>Lead Assessor Comment:</b>   |            |            |                                  |                         |     |
| Project participant needs to mention the line diagram of project boundary in section B.3 of PDD and furnish the information's about project boundary as per the paragraph 6 of AMS I.D version 13   |            |            |                                  |                         |     |
| <b>Project Participant Response:</b>  |            |            |                                  | <b>Date:</b> 07/08/2009 |     |
| The single line diagram for the project boundary has been incorporated in section B.3 and project boundary information has been made clear.   |            |            |                                  |                         |     |
| <b>Documentation Provided by Project Participant:</b>   |            |            |                                  |                         |     |
| In addition to this the single line diagram (of the project) duly approved by the Electrical Inspector is attached herewith for your kind perusal and reference.  |            |            |                                  |                         |     |
| <b>Information Verified by Lead Assessor:</b>   |            |            |                                  |                         |     |
| Section B.3 of the PDD was checked for information about the project boundary & the line diagram  |            |            |                                  |                         |     |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>  |            |            |                                  | <b>Date:</b> 08/10/2009 |     |
| The PP has provided the line diagram of the project boundary in Section B.3 of the PDD version 2. It was checked and found in line with the applied methodology AMS I.D./Version 13. Hence accepted.<br>The PP is requested to clarify the following statements mentioned in Section B.3 of the PDD version 2 –<br>a) “According to AMS 1.D/Version 13 (Dec 14, 2007) the spatial extent of this project activity includes the project site and all the power plants connected physically to the electricity system that the CDM power project is connected to.” Hence it is preferable to take the NEWNE grid as project boundary rather than the state boundary.”<br><br>Thus CAR #4 is open. |            |            |                                  |                         |     |
| <b>Project Participant Response:</b>  |            |            |                                  | <b>Date:</b> 25/01/2010 |     |
| Based on discussion with validator, the project boundary has been updated as per the latest version of methodology, AMS I D version 15. The figure below shows the project boundary. The same has been updated in PDD.  |            |            |                                  |                         |     |

|   |                         |
|---|-------------------------|
| <b>Documentation Provided by Project Participant:</b>   |                         |
| Revised PDD version 03  |                         |
| <b>Information Verified by Lead Assessor:</b>   |                         |
| Section B.3 of the PDD version 3 was checked for the description and diagram of the project boundary  |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>  | <b>Date:</b> 15/02/2010 |
| PP has updated the description of the project boundary as per AMS I.D version 15. PP has changed the project boundary diagram in the PDD version 03. PP is requested to clarify why the grid has been shown outside the project boundary?<br>Thus CAR #4 is open. |                         |
| <b>Project Participant Response:</b>  | <b>Date:</b> 15/04/2010 |
| Since the transmission loss has been considered hence it is appropriate to include grid inside the project boundary. The same has been updated in PDD.  |                         |
| <b>Documentation Provided by Project Participant:</b>   |                         |
| Revised PDD   |                         |
| <b>Information Verified by Lead Assessor:</b>   |                         |
| Section B.3 of the revised PDD was checked for the project boundary   |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>  | <b>Date:</b> 08/06/2010 |
| PP has considered the grid inside the project boundary which is appropriate as per AMS I.D version 15. The same is reflected in the project boundary diagram in section B.3 of the revised PDD. This has been checked and accepted.<br>CAR #4 closed.             |                         |
| <b>Acceptance and Close out by Lead Assessor:</b>   | <b>Date:</b> 08/06/2010 |

|  |            |            |                                  |                         |       |
|--|------------|------------|----------------------------------|-------------------------|-------|
| Date:  | 09/07/2009 | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |                         |       |
| Type:  | CL         | Number:    | 05                               | Reference:              | A.4.3 |
| <b>Lead Assessor Comment:</b>  |            |            |                                  |                         |       |
| The Project participant is required to provide ownership documents & licenses which will allow the implementation of the proposed project activity at the site. Please provide all approvals required by the project activity.           |            |            |                                  |                         |       |
| <b>Project Participant Response:</b>   |            |            |                                  | <b>Date:</b> 07/08/2009 |       |
| The project was allotted to A A Energy Private Limited, now the company has changed its constitution to A A Energy Limited (relevant Certificate of Incorporation is attached). The approvals required by the project activity include – |            |            |                                  |                         |       |
| 1. Licence to set up from Ministry of Commerce and Industry, Government of India   |            |            |                                  |                         |       |
| 2. NOC from Municipal Council – Desaiganj Wadsa  |            |            |                                  |                         |       |
| 3. Environment Clearance from Government of Maharashtra  |            |            |                                  |                         |       |
| 4. MEDA Approval for setting up 10 MW plant  |            |            |                                  |                         |       |
| 5. Consent to Establish from Maharashtra Pollution Control Board   |            |            |                                  |                         |       |
| <b>Documentation Provided by Project Participant:</b>  |            |            |                                  |                         |       |
| 7. The certificate of incorporation issued by the registrar of companies dated 22/01/2008 (proof for name change from A A Energy Private Limited to A A Energy Limited)  |            |            |                                  |                         |       |
| 8. Acknowledgement issued by the Ministry of Commerce & Industry, Government of India, No. 85/SIA/IMO/2008 dated 14/01/2008  |            |            |                                  |                         |       |
| 9. NOC No. KV/NPDC/NV/75-2008 dated 10/03/2008 issued by the Municipal Council   |            |            |                                  |                         |       |
| 10. Environment clearance letter dated 22/01/2009 vide No. Powar – 2008/356/CR 50/TC – 1 issued by the Government of Maharashtra   |            |            |                                  |                         |       |
| 11. MEDA letter Ref. PGN – II/BPP – 101/08-09/ dated 30/04/2008  |            |            |                                  |                         |       |
| 12. Maharashtra Pollution Control Board's Consent No. BO/RO(P&P)/CC – 308 dated 24/06/2008   |            |            |                                  |                         |       |

|  |                         |
|--|-------------------------|
| <b>Information Verified by Lead Assessor:</b>  |                         |
| All the above mentioned documents were checked.  |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>   | <b>Date:</b> 08/10/2009 |
| <p>a) The certification of incorporation dated 22/01/2008 issued by the Registrar of companies mentions the change in the name of the PP from 'A A Energy Pvt. Ltd' to 'A A Energy Ltd.' This was checked and accepted.</p> <p>b) The acknowledgement (No. 85/SIA/IMO/2008) dated 14/01/2008 issued by the Ministry of Commerce &amp; Industry; Government of India mentions a proposed capacity of 792.00 Lacs Unit. This matches with the proposed capacity 10MW, hence accepted. The NOC (Ref No. KV/NPDC/NV/75-2008) dated 10/03/2008 issued by the Municipal Council states that the PP is allowed to implement the proposed project activity at the selected site. This was checked &amp; accepted.</p> <p>c) The letter dated 22/01/2009 vide No. Powar – 2008/356/CR 50/TC – 1 issued by the Government of Maharashtra has given the environmental clearance for setting up the 10 MW biomass based power project at the proposed site. This was checked and accepted.</p> <p>d) The MEDA letter (Ref. PGN – II/BPP – 101/08-09/) dated 30/04/2008 mentions that the final consent agreement with MEDA shall be considered only after submission of statutory clearance &amp; relevant documents as listed in the letter. The PP is requested to submit the final clearance issued by MEDA.</p> <p>e) The Maharashtra Pollution Control Board's Consent No. BO/RO(P&amp;P)/CC – 308 dated 24/06/2008 issued to the PP allow the installation of a 10 MW biomass based power project at the proposed project site. This was checked &amp; accepted.</p> |                         |
| Thus CL #5 is open.  |                         |
| <b>Project Participant Response:</b>   | <b>Date:</b> 25/01/2010 |
| <a href="#">Copy of agreement between MEDA and AA Energy Ltd. is attached.</a>   |                         |
| <b>Documentation Provided by Project Participant:</b>  |                         |
| <a href="#">Copy of agreement between MEDA and M/s. A.A Energy Ltd. Dated 12/03/2009</a>   |                         |
| <b>Information Verified by Lead Assessor:</b>  |                         |
| Agreement between PP and MEDA dated 12/03/2009 for setting up a 10 MW biomass based power project  |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>   | <b>Date:</b> 15/02/2010 |
| PP has submitted the agreement between MEDA and the PP dated 12/03/2009 to set up a 10 MW biomass based power project in Desaiganj Wadsa, District Gadchiroli.<br>Thus CL #5 is closed out   |                         |
| <b>Acceptance and Close out by Lead Assessor:</b>  | <b>Date:</b> 15/02/2010 |

|                               |            |            |                                  |
|-------------------------------|------------|------------|----------------------------------|
| Date:                         | 09/07/2009 | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |
| Type:                         | CAR        | Number:    | 06                               |
|                               |            | Reference: | B.4                              |
| <b>Lead Assessor Comment:</b> |            |            |                                  |



- f. Project participant needs to clarify about the applicability of guidelines/tool which has been followed to demonstrate the additionality of proposed project activity and mention the same in section B.5 of PDD
- g. Please justify the selection of power companies for the calculation of beta value
- h. Please provide the financial analysis excel sheet with appropriate sources/references for each value used for analysis as per the para 6 of guidance on investment analysis
- i. Project participant needs to mention the break up capital cost for project activity with appropriate sources/references for each investment in section B.5 of PDD
- j. Project participant needs to justify how technological and common practice barriers are specific to project activity? Please substantiate these barriers with supportive documents
- k. Please justify how the investment "Additional cost of evacuation" as mentioned in section B.5 is inline with the paragraph 6 of "Guidance on the Assessment of Investment Analysis (Version 02)"
- l. Please clarify why project cost and net electricity export has not been considered as a variable parameter for sensitivity analysis
- m. Project participant needs to check the debt interest rate for the project as per section B.5 of PDD and provide the copy of loan document
- n. Please clarify about the variation declared regarding to PLF in section B.5 of PDD and provide the evidence for the PLF value considered for project activity

**Project Participant Response:** **Date:** 07/08/2009

- a. The additionality for this project has been done as per "Tool for demonstration and assessment of additionality Version 05.2/EB 39" The applicable tool detail has been incorporated in section B.5 of the revised PDD.
- b. The beta value of NTPC has been chosen to arrive at the benchmark. Reason for choosing beta value of NTPC is due to the fact that NTPC is one of pioneering power generating companies in India and this is the company with least beta value among other power generating companies via. Reliance Infra, Tata Power, CESC, GIPCL, and NLC. Higher the beta value higher is the WACC, to be conservative NTPC beta has been chosen to arrive at the WACC. Relevant working sheet is available for perusal of DOE.
- c. Financial sheets have been attached herewith for your kind perusal. References to source of information as per guidance on assessment of investment analysis Version 02/EB 41 are provided in the financials.
- d. Cost break-up information has been included in section B.5 of the revised PDD
- e. Technological barriers due to usage of rice husk in the boilers have been removed from the barriers cited in B.5 and necessary changes have been made in PDD to meet the criteria specified in the "Guidance on the assessment of investment analysis Version 02/EB 41".
- f. Additional cost of evacuation has been removed from the barriers cited in B.5 and necessary changes have been made in PDD to meet the criteria specified in the "Guidance on the assessment of investment analysis Version 02/EB 41".
- g. Sensitivity check using the project cost has been performed and incorporated in the PDD. The PLF considered is 90% from year 3 of operation, thus subjecting 90% PLF to  $\pm 10\%$  variation in net electricity export is impractical and hence not carried out.
- h. Debt interest rate has been considered as per the DPR, the loan has been sanctioned very recently and the rate of interest as per loan document and the RoI considered during conceptualising this project are different. Relevant documents are available for perusal of DOE.
- i. PLF variation has been considered as per the DPR, the DPR is work was awarded to a third party firm, which has suggested this PLF in the DPR for this project activity.

**Documentation Provided by Project Participant:**

|  |                         |
|--|-------------------------|
| <ol style="list-style-type: none"> <li>1. Revised PDD version 2</li> <li>2. WACC calculation excel spreadsheet</li> <li>3. Project's financial analysis excel sheet</li> <li>4. Project DPR</li> </ol>   |                         |
| <b>Information Verified by Lead Assessor:</b>  |                         |
| <ol style="list-style-type: none"> <li>a. Section B.5 of PDD version 2 was checked for the applicability of the guideline/tool that has been used for the project activity and the version of the guideline/tool used.</li> <li>b. WACC calculation sheet has been checked for beta value</li> <li>c. Financial analysis sheet has been checked</li> <li>d. Section B.5 of PDD Version 2 was checked for the break up of the capital cost and the source / reference to each investment.</li> <li>e. Section B.5 of PDD Version 2 was checked for the technological &amp; common practice barriers.</li> <li>f. Section B.5 of PDD Version 2 was checked for the parameter 'Additional cost of evacuation'.</li> <li>g. Section B.5 of PDD Version 2 was checked for the sensitivity analysis of the parameters 'project cost' &amp; 'PLF'.</li> <li>h. Project DPR was verified for the debt interest rate. IREDA loan sanction letter dated 18/12/2008 &amp; PTC India Financial Services Ltd loan sanction letter dated 25/02/2009 were checked for the debt interest rate.</li> <li>i. DPR was checked for the PLF.</li> </ol> |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>   | <b>Date:</b> 08/10/2009 |

- a. Reference to Section B.5 of revised PDD it has been well-known that additionality of project is established as per the *"Non-binding best practice examples to demonstrate additionality for SSC project activities Annex 34/ EB 35"*, this is not consistent with the PPs response above. Please clarify the same. If PP mentions that additionality for this project has been done as per "Tool for demonstration and assessment of additionality Version 05.2/EB 39", then please clarify why PP has not followed all steps of the additionality tool.
- b. It has been verified that market Returns calculated are on a higher side. Project participant preferred NTPC beta which is found conservative thus the overall effect of high market returns is neutralized. This approach is satisfactory and accepted.
- c. Following issues needs to be addressed by PP

**Financial:**

- i. Please justify why the cash flows for calculating IRR are not taken for the technical lifetime of the project.
- ii. Please clarify how Supervision, Management, and CDM Expenses (C63) – CDM related expenses can be the part of IRR calculation.
- iii. Please check the formula used for calculation of PAT.
- iv. Project Cash flow calculations is not clear please make sure about the same and add the correct cells for interest in the project cash flow formula.
- d. PP is requested to provide a further detailed break-up of the capital cost of the project activity with appropriate sources/references for each investment in section B.5 of the PDD.
- e. PP has removed the technological barrier & common practice barrier in section B.5 of the PDD Version 2. This was verified & accepted.
- f. PP has removed the investment 'Additional cost of evacuation' in Section B.5 of the PDD Version 2, to meet the criteria specified in paragraph 6 of Guidance on the Assessment of Investment Analysis (Version 02). This was verified & accepted.
- g. The PP has included the parameter of project cost in the sensitivity analysis and mentioned the same in Section B.5 of the PDD. This was checked and accepted. PP is requested to justify how the selected PLF is as per EB 48 annex 11 and mention the same as reference in the relevant section of the PDD.
- h. The inconsistency in the debt interest rate in Section B.5 of the PDD has been rectified and hence accepted.
- i. It is unable to trace the PLF for the project activity. PP is requested to provide a more specific reference (chapter number or annexure number, etc) for the figure of PLF mentioned in the DPR.
- j. PP is requested to clarify the inconsistency in the value of term loan in the DPR itself for eg:
  - i. Schedule A mentions term loan as 0
  - ii. Page 5 mentions term loan as 3160 Lakh

CAR #6 is open.

|                                      |                         |
|--------------------------------------|-------------------------|
| <b>Project Participant Response:</b> | <b>Date: 25/01/2010</b> |
|--------------------------------------|-------------------------|

- a. This is an erroneous rendering in the response to findings and we regret the same. To reaffirm, the PDD has been done as per "Non-binding best practice examples to demonstrate additionality for SSC project activities Annex 34/ EB 35"
- b. –closed
- c.
  - i. The reason for computing the financial model over 10 years is due to the fact that the PPA is limited to 10 years period. Hence there lies an uncertainty w.r.t. consideration of tariff post the PPA tenure. So as to properly account for the balance of operational lifetime, salvage value has been taken at the end of 10th year to ensure proper accountability. However cash flow for calculation of project IRR has been revised for 20 years as per discussion with validator. This is in line with EB 41 Annex 45, Page 1, Paragraph 3 "In general a minimum period of 10 years and a maximum of 20 years will be appropriate".
  - ii. PP has conceived this project as a CDM project since inception, hence the extra cost associated for CDM implementation has also been incorporated in the financial model. But this extra cost is applicable only when CDM revenue is considered.
  - iii. Deferred tax was wrongly deducted while calculating PAT. The same has been corrected in financial calculation sheet.
  - iv. Wrong cell was added while calculating project cash flow. The same has been corrected by adding the correct cell for interest in the project cash flow in financial calculation sheet.
- d. Detailed break up of project cost along with proper references have been provided in section B.5,
- e. – closed
- f. – closed
- g. The PLF value used for the investment analysis is referenced from the project DPR, prepared by a third party firm. Hence this is in line with EB 48 annex 11. The values are mentioned in page no. 5 table point no.19 of the DPR.
- h. – closed
- i. The PLF value is provided in page 5, under table point no.19 of DPR.
- j. This is a typographical error in the DPR in schedule A and same can be verified from loan sanction letter.

**Documentation Provided by Project Participant:**

PDD version 03

**Information Verified by Lead Assessor:**

Section B.5 of the PDD version 3 was checked for the break up of the project cost.  
Page no. 5 table point no. 19 of the DPR was checked for the PLF values

**Reasoning for not Acceptance or Acceptance and Close Out:**

**Date:** 17/02/2010

- a. PP has rectified the response and reaffirmed that the PDD follows the “Non-binding best practice examples to demonstrate additionality for SSC project activities Annex 34/ EB 35”. This was checked and accepted.
- b. – Not required
- c. Please clarify why :
  1. Conditional discounts can be a part of financial analysis?
  2. Tax shield available to PP in initial years due to accelerated depreciation rate allowed under Income tax Act has not been included?
  3. Margin Money has been taken as a part of capital cost?

**Unlevered Beta Calculation :**

Tax rate: please clarify why applicable corporate tax rate has not been used?

**WACC Calculation: Cost of Debt**

Tax rate: please clarify why applicable corporate tax rate has not been used?

- d. PP has provided a detailed break-up of the capital cost of the project activity in section B.5 of the PDD version 3 and has mentioned the references for each investment as the various annexure of the DPR. PP is requested to provide evidence for the values mentioned in the annexure referenced in the table in section B.5 of the PDD and justify change with respect to earlier sheet.
- e. – Closed
- f. – Closed
- g. The PLF used for the project activity has been referenced from the project DPR, prepared by a third party firm. Hence this is in line with EB 48 annex 11. The PLF mentioned in the DPR on page no. 5 table point no.19 is 80% in 1<sup>st</sup> year, 85% in 2<sup>nd</sup> year and 90% from 3<sup>rd</sup> year onward. The table does not give evidence for the variation in the PLF considered. PP is requested to clarify the same.
- h. – Closed
- i. The PLF value is provided in page 5, under table point no.19 of the DPR but the table does not give evidence for the variation in the PLF considered. PP is requested to clarify the same. (This is same as the point ‘g’ above)
- j. Inconsistency in the value of term loan in the DPR is a typo error; loan amount is verified through loan document, found correct hence accepted.

CAR #6 is open.

|                                      |                         |
|--------------------------------------|-------------------------|
| <b>Project Participant Response:</b> | <b>Date: 15/04/2010</b> |
|--------------------------------------|-------------------------|

a. – Closed

b. - Closed

c. Please clarify why :

1. Conditional discounts can be a part of financial analysis?

As per the PPA signed between PP and TPTCL, PP should allow a prompt payment discount of 2% if the payment is made by TPTCL before the due date. The due date is further defined as the 10<sup>th</sup> day from the receipt of energy bills on page no 6 of PPA. As per PPA page no 7, 11.d para, PP won't get any interest on pending payment if the payment is delayed by 30 days from the due date. Hence in case PP is not accounting the conditional discount then it will have to consider working capital and margin money on sundry debtors for 40 days (10+30). PP has removed 2% cash discount from financial calculation and it has calculated working capital for 40 days for working capital and margin money on sundry debtors. For smooth operation of plant, PP has to invest in margin money and the nature of investment is cyclic. Hence the margin money for first year and increase in margin money in subsequent years has been considered as net cash outflow for calculation of project IRR (Row 44 in IRR sheet). Pay back of margin money at the end of 20<sup>th</sup> year has been considered as cash inflow at the end of 20<sup>th</sup> year.

2. Tax shield available to PP in initial years due to accelerated depreciation rate allowed under Income tax Act has not been included?

PP doesn't have any existing business other than the proposed project activity. PP would also like to clarify that AA Energy is not part of any group of companies. It doesn't have any other tax liability from his other businesses. Hence tax shield is not applicable. A letter of undertaking declaring the same along with Certificate of incorporation and shareholding pattern till 08/01/2010 have been submitted to DOE.

3. Margin Money has been taken as a part of capital cost?

A minimum capital is required to run the business till the first profit from the business is realized. A part of working capital is funded by bank and rest is funded by PP which is called margin money of working capital. Margin money is extra cost to the PP apart from other expenses like land, plant and machinery etc which should be considered while making investment. Since margin money is pure equity part hence it has been removed from project cost. However the margin money for first year and increase in margin money in subsequent years has been considered under cash outflow for calculation of project IRR. Pay back of margin money at the end of 20<sup>th</sup> year has been considered as cash inflow at the end of 20<sup>th</sup> year.

#### **Unlevered Beta Calculation :**

Tax rate: please clarify why applicable corporate tax rate has not been used?

Instead of corporate tax rate, effective tax rate to each individual company has been used for calculation of unlevered beta. The effective tax rate is calculated by dividing the company's weighted average tax rate for last three years) by its weighted average profit before tax for last three years). The same has been updated in WACC calculation sheet and in PDD.

Please refer to step 2 mentioned at the given link for unlevered Beta calculation - [http://www.ehow.com/how\\_5108226\\_calculate-unlevered-beta.html](http://www.ehow.com/how_5108226_calculate-unlevered-beta.html).

#### **WACC Calculation: Cost of Debt**

Tax rate: please clarify why applicable corporate tax rate has not been used?

WACC calculation sheet has been updated as per applicable corporate tax rate.

- d. PP had contracted MITCON, a third party, to carry out the detailed study for the project specific scenarios for every expenses involved. MITCON is a well known consultant in this field and it has provided services to various companies in similar field. The given expenditures have been arrived based on MITCON's past experience and consultation with identified suppliers by MITCON. A certificate approved by Chartered Accountant on expenditure incurred by M/s AA Energy limited has been provided to DOE.
- e. – closed
- f. – closed
- g. The Plant Load Factor (PLF) of a biomass based power plant is a function of fuel availability, moisture content of the fuel, mechanical efficiency, and age of the machine, steam pressure, heat rate and calorific value of the biomass. The project activity may take three years to stabilize.  
  
The given PLF in DPR (80% in first year, 85% in second year and 90% from third year onward) is project specific and this can be compared with PLF given by MERC biomass tariff order, dated 8<sup>th</sup> August 2005. As per MERC commission ruling, the PLF can be assumed as 70-75% during first year and 85% to 90% from second year onward. This is based on 330 days of operation.
- h. – closed
- i. Same as mentioned in point 'g'.
- j. – closed

**Documentation Provided by Project Participant:**

- Letter from Chartered Accountant regarding applicability of MAT for calculation of WACC.
- Letter from Chartered Accountant regarding the expenditure incurred by M/s AA Energy Limited
- MERC – Biomass tariff order dated 8<sup>th</sup> August 2005.
- RoC, Undertaking from client that the company doesn't have any other business, Shareholding pattern of company as on 08/01/2010
- Quotations from biomass suppliers
- Order by MERC dated 25/03/2009

**Information Verified by Lead Assessor:**

Same as above

**Reasoning for not Acceptance or Acceptance and Close Out:**

**Date:** 01/05/2010



2% cash discount from financial calculation has been removed and PP has calculated working capital for 40 days for working capital and margin money on sundry debtors. For smooth operation of plant, PP has to invest in margin money periodically. Hence the margin money for first year and increase in margin money in subsequent years has been considered as net cash outflow for calculation of project IRR. This is verified from revised IRR excel sheet, found satisfactory, hence accepted.

Project participant neither has any existing business other than the proposed project activity nor is the A.A Energy part of any group of companies. Thus PP doesn't have any other tax liability from his other businesses. This is verified through the letter of undertaking declaring the same along with Certificate of incorporation and shareholding pattern till 08/01/2010, thus tax shield is not applicable.

PP has removed from project cost because margin money is pure equity. However the margin money for first year and increase in margin money in subsequent years has been considered under cash outflow for calculation of project IRR. Pay back of margin money at the end of 20<sup>th</sup> year has been considered as cash inflow at the end of 20<sup>th</sup> year. This is verified from revised IRR sheet found satisfactory, hence accepted.

PP has used effective tax rate to each individual company for calculation of unlevered beta. The effective tax rate is calculated by dividing the company's weighted average tax rate for last three years) by its weighted average profit before tax for last three years). This is verified through WACC calculation sheet and from revised PDD, found acceptable. Also the calculation of unlevered Beta can be verified from web link ([http://www.ehow.com/how\\_5108226\\_calculate-unlevered-beta.html](http://www.ehow.com/how_5108226_calculate-unlevered-beta.html)), hence accepted.

PP has considered corporate tax 33.99% for determination of benchmark this is verified through WACC calculation sheet found conservative and correct, hence accepted.

The PLF used for the project activity has been referenced from the project DPR. PP had contracted to MITCON to prepare DPR which is third party. Hence this is in line with EB 48 annex 11. The variation in PLF mentioned in the DPR is also verified through MERC biomass tariff order, dated 8<sup>th</sup> August 2005 and found conservative hence accepted.

Thus CAR #6 is closed

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| <b>Acceptance and Close out by Lead Assessor:</b> | <b>Date:</b> 01/05/2010 |
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|  |            |            |                                  |                         |       |
|--|------------|------------|----------------------------------|-------------------------|-------|
| Date:  | 09/07/2009 | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |                         |       |
| Type:  | CL         | Number:    | 07                               | Reference:              | B.4.4 |
| <b>Lead Assessor Comment:</b>  |            |            |                                  |                         |       |
| <p>d. Please provide the Seriousness CDM Consideration with chronology of events as per EB 41 Annex 46 and mention the same in section B.5 of PDD.</p> <p>e. Please provide the copies of letters through which project participant had notified to UNFCCC and MoEF about their plans to develop the proposed project activity under CDM.</p>  |            |            |                                  |                         |       |
| <b>Project Participant Response:</b>   |            |            |                                  | <b>Date:</b> 07/08/2009 |       |
| <p>a. <a href="#">The chronology of events, demonstrating serious consideration of CDM is tabulated in section B.5 of the revised PDD. Relevant support documents for the same are attached herewith for your kind perusal.</a></p> <p>b. <a href="#">The letter copies are attached</a></p>   |            |            |                                  |                         |       |
| <b>Documentation Provided by Project Participant:</b>  |            |            |                                  |                         |       |
| <p>a. Extract of the board resolution minutes dated 12/05/2008, Biomass assessment report dated March 2008, Project DPR dated April 2008, CDM agreement with EVI dated 06/07/2008</p> <p>b. Letters to UNFCCC and MoEF, dated 19.09.08 and Proposal from DOEs for Validation of this project, Acknowledgement for the letters sent by Speed Post (Government of India) is attached</p> |            |            |                                  |                         |       |
| <b>Information Verified by Lead Assessor:</b>  |            |            |                                  |                         |       |
| <p>a) Extract of board resolution, biomass assessment report, project DPR and CDM agreement with EVI were checked against CDM awareness &amp; continuing real action.</p> <p>b) Letters to Host Party DNA dated 19/09/2008 and to the UNFCCC Secretariat dated 19/09/2008 was checked as per EB 41 Annex 46.</p>   |            |            |                                  |                         |       |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>   |            |            |                                  | <b>Date:</b> 08/10/2009 |       |

- a. PP is requested to mention and provide evidence for major events like the date of appointment of validator, date of PDD webhosting, etc in the chronology of events mentioned in Section B.5 of the PDD. Also, the PP is requested to justify the time gap between the board resolution dated 12/05/2008 and the implementation of the project activity.
- b. The letter addressed to the Host Party DNA & the UNFCCC secretariat dated 19/09/2008 was checked. PP has written this letter within 6 months of the start date of the project activity; it contains the precise geographical location and brief description of the proposed project activity. This was found to be as per EB 41 Annex 46 and hence accepted. The following link (<http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html>) on the UNFCCC website does mention that the communication has been received by the UNFCCC but the project title mentioned here does not match with that in the PDD. PP is requested to clarify the same.

CL #7 is open

**Project Participant Response:**

**Date: 25/01/2010**

- a. The chronology of events demonstrating serious consideration of CDM has been updated in PDD.
- b. The project title mentioned in host party approval letter and PDD is "Biomass based power generation project in Maharashtra, India" however on the prior consideration of CDM web link, it is mentioned as "Biomass based Power project at Wadsa, Taluka. Desaiganj, Dist. Gadchiroli, Maharashtra".  
  
Both project titles refer to the same project activity. The project titles shown on UNFCCC website also indicate the taluka name and district name of same project activity. This (taluka name and district name) can be verified from letter submitted to UNFCCC & host country as well as from webhosted PDD section A 4.1.3. DOE is requested to consider project title which is mentioned in PDD and in host country approval letter.

**Documentation Provided by Project Participant:**

- No Objection Certificate for setting up a 10 MW biomass based power plant from municipal council, Desaiganj (No. KV/NPDC/NV/75/- 2008)
- Power Purchase Agreement
- Consent to establish from Maharashtra Pollution control board (Consent no. BO/RO (P & P)/ CC-308)
- Boiler Purchase Agreement (Taken as project start date)
- Purchase order of 10 MW turbine
- Sanction of term loan from IREDA (Ref: 221/2488/GMG/2008/IREDA/8234)
- Environment clearance from Government of Maharashtra (No.2008/356/CR 50/TC-1)
- Agreement between MEDA (Maharashtra Energy Development Agency) and AA Energy Ltd.
- Host country approval

**Information Verified by Lead Assessor:**

Chronology of events mentioned in section B.5 of the PDD version 03

**Reasoning for not Acceptance or Acceptance and Close Out:**

**Date: 17/02/2010**

- a. PP has provided the chorology of events for the project activity in section B.5 of the PDD version 03. Boiler purchase agreement is considered as the starting date of the project activity. Since it is the earliest date on which the real action of the project activity began, it can be considered as the starting date of the project activity inline with EB 41 annex 67, hence accepted.
- b. The project title mentioned in webhosted PDD and HCA is same. This is accepted

CL #7 is closed

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

**Date: 17/02/2010**

|       |            |            |                                  |
|-------|------------|------------|----------------------------------|
| Date: | 09/07/2009 | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |
|-------|------------|------------|----------------------------------|

|   |     |         |    |                  |     |
|---|-----|---------|----|------------------|-----|
| Type:   | CAR | Number: | 08 | Reference:       | B.5 |
| Lead Assessor Comment:  |     |         |    |                  |     |
| <div>d. As per section B.2 of the PDD it has been mentioned that ‘The project activity meets the applicability conditions of the approved consolidated methodology’. Project participant is required to justify the applicability of selected methodology for the project activity. Please clarify which methodology the project activity follows.</div> <div>e. Project participant needs to clarify why Operating Margin (OM) and Build Margin (BM) has not been included as parameters in section B.6.2 of PDD and mention the complete details of Combined Margin (CM) in the same section.</div> <div>f. During site visit and discussion with plant personnel it is accomplished that auxiliary consumption by project activity would be measured by separate electricity meter at site, please clarify why auxiliary consumption has not been included as monitoring parameter in section B.7.1 of PDD</div> <div>g. Project participant did not include “specific fuel consumption” as an ex-ante parameter in section B.6.2 of PDD, please clarify how this is in line with paragraph 15 of methodology AMS I.D version 13</div> <div>h. Project participant needs to mention the calibration procedure for each instrument used in project activity as per section B.7.1 of PDD</div> |     |         |    |                  |     |
| Project Participant Response:   |     |         |    | Date: 07/08/2009 |     |
| <div>a. Project will adopt AMS 1 D Version 13, it is an erroneous rendering made in the PDD, we regret the same and suitable changes have been made in the revised PDD.</div> <div>b. OM and BM values have not been included with a view that it is only CM that is required to estimate the number of CERs. Necessary inclusions have been made to provide complete details on the CM emission factor in section B.6.2 of the revised PDD.</div> <div>c. Though auxiliary power consumption of the plant will be measured at the plant site, it is only the net saleable power which will be considered for CER estimation. Thus monitoring auxiliary consumption will not have any significance on CER estimation, as CER estimation will be done based on the net saleable power at the metering point.</div> <div>d. Only rice husk is being used in the project activity as biomass, thus the specific fuel consumption of rice husk is included in section B.6.2 of PDD. Necessary changes have been made in the revised PDD to reflect 100% rice husk usage scenario.</div> <div>e. The instruments via energy meter measuring auxiliary power, saleable power and the steam flow meters will be calibrated as per the equipment supplier specifications.</div>                         |     |         |    |                  |     |
| Documentation Provided by Project Participant:  |     |         |    |                  |     |
| PDD Version 2   |     |         |    |                  |     |
| Information Verified by Lead Assessor:  |     |         |    |                  |     |
| <div>a. Section B.2 of the PDD Version 2 was checked for the applicability &amp; version no. of the methodology used for the project activity.</div> <div>b. The parameters &amp; details of each parameter provided in Section B.6.2 of PDD Version 2 were checked.</div> <div>c. Section A.4.2 &amp; B.7.1 of PDD version 2 were checked for the changes made.</div>  |     |         |    |                  |     |
| Reasoning for not Acceptance or Acceptance and Close Out:   |     |         |    | Date: 08/10/2009 |     |

- a. PP has corrected the error in Section B.2 of the PDD Version 2 and has clearly mentioned that the project activity follows the methodology AMS I.D./ Version 13. This was checked & accepted.
- b. As per section B.6.2 of revised PDD it is stated that CM value is calculated as the weighted average of the last three year's OM value and current year's BM value, with 50% weight age given to both OM & BM and will be fixed ex-ante for entire crediting period. CO<sub>2</sub> Baseline Database Version 4.0 dated October 2008 published by CEA is used to calculate CM in a transparent and conservative manner. This is found satisfactory, hence accepted.
- c. PP is requested to include auxiliary consumption as a parameter to be monitored in the relevant section of the PDD.
- d. The PDD Version 2 mentions that the only biomass used as fuel for the project activity will be rice husk. Hence 'specific fuel consumption' of rice husk is specified ex-ante in section B.6.2 of PDD. Thus it is in line with paragraph 15 of methodology AMS I.D version 13 and hence accepted.
- e. PP is requested to clarify about the specific calibration procedure/frequency as prescribed by the equipment supplier's and mention in the same in the relevant sections of the PDD. Also in section B.7.1 of revised PDD mention that "the energy meters used will be calibrated and maintained at the accuracy levels as stipulated in the energy purchase agreement (EPA)" please clarify this inconsistency regarding calibration in view of PP response. Please mention the specific calibration procedure along with frequency for Weigh Bridge in section B.7.1 & B.7.2 of PDD.

Thus CAR #8 is open

|   |                         |
|---|-------------------------|
| <b>Project Participant Response:</b>  | <b>Date: 25/01/2010</b> |
| c. Monitoring of auxiliary consumption is not required as the emission reduction is claimed against net electricity supplied to the TPTCL. This net electricity supplied will be measured by energy meter. This is also in accordance with AMS I D version 15 para 17.  |                         |
| e. Energy meter, weigh bridge will be calibrated annually. The same has been updated in PDD.  |                         |
| <b>Documentation Provided by Project Participant:</b>   |                         |
| PDD Version 3   |                         |
| <b>Information Verified by Lead Assessor:</b>   |                         |
| Paragraph 17 of AMS I.D version 15  |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>  | <b>Date: 17/02/2010</b> |
| c. As per paragraph 17 of AMS I.D version 15 monitoring shall consist of metering the net electricity supplied by the project activity to the grid. Hence, the monitoring of auxiliary consumption is not required. Thus accepted.  |                         |
| e. PP has mentioned in section B.7.1 of the PDD version 3 that the energy meter and weigh bridge will be calibrated annually. This has been checked and accepted. But the calibration procedure for the same has not been mentioned as per the guidelines for completing the CDM-SSC-PDD. PP is requested to follow the guidelines for completing the CDM-SSC-PDD and mention the required details in section B.7.1 & Section B.7.2 of the PDD. |                         |
| Thus CAR #8 is open   |                         |
| <b>Project Participant Response:</b>  | <b>Date: 15/04/2010</b> |
| The calibration of energy meter and weigh bridge will be done by external agencies approved by government. Section B7.1 and B7.2 have been updated accordingly in PDD.  |                         |
| <b>Documentation Provided by Project Participant:</b>   |                         |
| Revised PDD   |                         |
| <b>Information Verified by Lead Assessor:</b>   |                         |
| Section B.7.1 & B.7.2 of the revised PDD was checked for the calibration procedure of the energy meter and the weigh bridge.  |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>  | <b>Date: 08/06/2010</b> |
| Section B.7.1 & B.7.2 of the revised PDD mentions that the calibration will be done by external agencies approved by government. This has been checked and hence accepted.  |                         |
| CAR #8 is closed out.   |                         |
| <b>Acceptance and Close out by Lead Assessor:</b>   | <b>Date: 08/06/2010</b> |

|  |            |            |                                  |                         |     |
|--|------------|------------|----------------------------------|-------------------------|-----|
| Date:  | 09/07/2009 | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |                         |     |
| Type:  | CL         | Number:    | 09                               | Reference:              | B.6 |
| <b>Lead Assessor Comment:</b>  |            |            |                                  |                         |     |
| Reference to section B.8 of PDD version 01, information about the responsible person(s) for completion of the application of baseline and monitoring methodology is not as per CDM-SSC-PDD completion guidelines, project participant needs to follow the guidelines for CDM-SSC-PDD completion.   |            |            |                                  |                         |     |
| <b>Project Participant Response:</b>   |            |            |                                  | <b>Date:</b> 07/08/2009 |     |
| Suitable change has been made in section B.8 with regard to the details about the responsible person(s) as per the CDM-SSC-PDD completion guidelines.  |            |            |                                  |                         |     |
| <b>Documentation Provided by Project Participant:</b>  |            |            |                                  |                         |     |
| PDD Version 2  |            |            |                                  |                         |     |
| <b>Information Verified by Lead Assessor:</b>  |            |            |                                  |                         |     |
| Section B.8 of the PDD Version 2 was verified against the guidelines for completing the CDM-SSC-PDD.   |            |            |                                  |                         |     |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>   |            |            |                                  | <b>Date:</b> 08/10/2009 |     |
| <p>The PP has mentioned the date of completion of the application of the methodology to the project activity &amp; has provided the contact information of the entity responsible for the application of the baseline and monitoring methodology in section B.8 of the PDD as per the guidelines for completing the CDM-SSC-PDD. This was checked and accepted.</p> <p>The PP is requested to indicate if the entity is also a project participant listed in Annex 1, as per the guidelines for completing the CDM-SSC-PDD, Version 05.</p> <p>PP needs to check the format of the PDD template as per guidelines. The headers are not appropriate as per Project Design Document Form.</p> <p>Thus CL #9 is open.</p> |            |            |                                  |                         |     |
| <b>Project Participant Response:</b>   |            |            |                                  | <b>Date:</b> 25/01/2010 |     |
| <p>Person responsible for completion of baseline and monitoring methodology is also a project participant listed in Annex I. The same has been updated in section B8 as per the guidelines for completing the CDM-SSC-PDD, Version 05.</p> <p>The format of the PDD has been checked and now right format has been used as per guidelines given in Specific guidelines for completing CDM-SSC-PDD, version 05.</p>   |            |            |                                  |                         |     |
| <b>Documentation Provided by Project Participant:</b>  |            |            |                                  |                         |     |
| PDD version 3  |            |            |                                  |                         |     |
| <b>Information Verified by Lead Assessor:</b>  |            |            |                                  |                         |     |
| <p>Section B.3 of PDD version 3 was checked against the guidelines for completing the CDM-SSC-PDD</p> <p>The format &amp; headers of the PDD version 3 was checked against the guidelines for completing the CDM-SSC-PDD</p>   |            |            |                                  |                         |     |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>   |            |            |                                  | <b>Date:</b> 16/02/2010 |     |
| <p>PP has indicated in section B.8 of PDD version 3 that the person responsible for development of baseline and monitoring methodology is also a project participant listed in Annex 1. This is as per the guidelines for completing the CDM-SSC-PDD and hence accepted.</p> <p>The format &amp; headers of the PDD version 3 was checked against the guidelines for completing the CDM-SSC-PDD and found to be correct hence accepted.</p> <p>Thus CL #9 is closed out.</p>   |            |            |                                  |                         |     |
| <b>Acceptance and Close out by Lead Assessor:</b>  |            |            |                                  | <b>Date:</b> 16/02/2010 |     |

  

|                               |            |            |                                  |            |     |
|-------------------------------|------------|------------|----------------------------------|------------|-----|
| Date:                         | 09/07/2009 | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |            |     |
| Type:                         | CL         | Number:    | 10                               | Reference: | B.7 |
| <b>Lead Assessor Comment:</b> |            |            |                                  |            |     |

- f. Please provide the baseline emission reductions calculation excel sheet with appropriate sources/references for each value used for calculation. It is not clear about the different values of the emission reductions for first two years as compared to remaining years.
- g. As per section B.4 of PDD, project participant needs to justify the selection of default weights for OM and BM as per the "CEA CO<sub>2</sub> baseline database for Indian power sector" applicable for project activity.
- h. As per section B.4 of the PDD it is mentioned that the emission factor of the NEWNE grid will be used to calculate the baseline but step 1 of the same section revealed that 'emissions generated due to the electricity generated by the Western regional grid will serve as the baseline for this project'. Project participant is requested to clarify this inconsistency.
- i. It is not clear if the project activity is consuming any electricity from grid or using DG set in case of start up or emergency purpose. Please clarify why these emissions has not considered for calculation of emission reduction calculation.
- j. Please clarify why the emission due the competitive use of biomass as per attachment C of appendix B has not addressed in the PDD.
- k. Please justify why the leakage due to transportation of biomass is insignificant and why it is not considered in the calculation.
- l. Please clarify which version of 'Tool to calculate the emission factor for an electricity system' has been referred for proposed project activity
- m. The total number of crediting years as mentioned in section A.4.3 of PDD may mislead as 10<sup>5</sup>, PP requested to put the footnote in first column for better clarity and understanding.

|   |                         |
|---|-------------------------|
| <b>Project Participant Response:</b>  | <b>Date:</b> 07/08/2009 |
| <ol style="list-style-type: none"> <li>a. The different values for emission reductions for first two years are due to variation in the plant load factor in the initial years of run; this is referenced from the project DPR. Baseline emission factor is as per the data published by CEA for NEWNE grid.</li> <li>b. As per the user guide published by CEA default weights of 50% each on OM and BM is only applicable for biomass based power generation project, thus it has been used in the PDD.</li> <li>c. Emission factor of NEWNE grid will only be taken as the baseline emissions, it a mistake that we have given reference to Western region grid in the description, suitable changes have been made in section B.4 of revised PDD</li> <li>d. The project will certainly draw power from grid for initial start up of the plant, this will however happen before the commissioning of the plant. Hence it is not found to be having any impact on the emission reduction calculations.</li> <li>e. This project will make use of rice husk primarily procured from rice mills within 50 km radius from the project site. There were no significant usage of the rice husk being made anywhere in the command region earlier. Moreover MEDA sanctions biomass projects if and only when there is no overlapping of the command region with any other similar project activity. Hence there is no competitive use of biomass identified as per attachment C to appendix B, section 4. C.</li> <li>f. The command region for procurement of rice husk is within 50 km radius from the plant site; hence no significant leakage due to transportation of biomass is envisioned.</li> <li>g. Tool to calculate emission factor of a grid system Version 1.1 EB 35 will be used, the same is incorporated in the revised PDD</li> <li>h. Changes have been incorporated to provide better clarity.</li> </ol> |                         |
| <b>Documentation Provided by Project Participant:</b>   |                         |
| Project DRP s attached herewith for the reference of DOE.   |                         |
| Biomass Assessment report ascertaining availability of biomass in the command region.   |                         |
| <b>Information Verified by Lead Assessor:</b>   |                         |
| Section B.4 & A.4.3 of the PDD Version 2 were checked for the changes made.   |                         |
| DPR was checked for PLF values.   |                         |



|   |                         |
|---|-------------------------|
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>  | <b>Date:</b> 08/10/2009 |
| <p>a. PP is requested to provide a more specific reference (chapter number or annexure number, etc) for the figure of PLF in the DPR. The difference in the values of emission reduction for the first two years of the crediting period will be verified after checking the PLF mentioned in the DPR.</p> <p>b. PP is requested to provide evidence for the statement mentioned above in the PP response – “Default weights of 50% each on OM and BM is only applicable for biomass based power generation project, thus it has been used in the PDD.”</p> <p>c. The PP has corrected the inconsistency in Section B.4 of the PDD version 2 by mentioning that the emission factor of the NEWNE grid will be considered for calculating the baseline emissions. This was checked &amp; accepted.</p> <p>d. It is assumed that the plant will be shut down over time on account of periodic shut down or maintenance shut down, etc. When the plant is started after such a shut down, power will be required to start the plant. It is this power that is being referred to in the clarification asked above. PP needs to justify that this power, which would be drawn from the grid or a DG set, will not have any impact on the emission reduction calculations.</p> <p>e. The biomass assessment report(BAR) submitted by the PP has considered other biomass in addition to rice husk, which will be used for running the plant however as per section B.7.1 of revised PDD it is clearly declared that only rice husk will be used for project activity. Hence the PP is requested to justify why the emissions due the competitive use of rice husk have not been addressed in the PDD as per attachment C of appendix B. The biomass assessment report is not clear in view of availability of rice husk within 50km of project site. Also, the PP is requested to provide evidence for the following statement mentioned above response “Moreover MEDA sanctions biomass projects if and only when there is no overlapping of the command region with any other similar project activity”</p> <p>f. PP has mentioned in Section B.4 of the PDD Version 2 that version 1.1 (EB 35) of ‘Tool to calculate the emission factor for an electricity system’ has been referred for proposed project activity and thus clarified the version. of the tool used. This was checked and accepted.</p> <p>g. The PP has changed the position of the footnote to the first column of the table in Section A.4.3 of the PDD version 2 for better clarity and understanding. This was checked &amp; accepted.</p> |                         |
| CL #10 is open.   |                         |
| <b>Project Participant Response:</b>  | <b>Date:</b> 25/01/2010 |



- a. The value of PLF is mentioned in page no. 5 table point no.19 of the DPR. The reference has been provided in the PDD. The difference in the values of emission reduction is due to lower PLF in first and second year. PLF is 80% for first year, 85% for second year and 90% for third year and onward.
- b. PP would like to correct the statement as “Default weights of 50% each on OM and BM is applicable for biomass based power generation project, thus it has been used in the PDD.”

This is also in-line with the [Tool to calculate the emission factor for an electricity system](#), Annex 14, Page 16, where weights of 50% each on OM and BM default is applicable to projects other than wind and solar.

- c. Power required during start-up will be drawn from F.O. based DG sets which will be installed as stand-by units. There will not be any significant impact on emission reduction due to the consumption of F.O. as the consumed quantity of F.O. will be very less. However any amount of F.O. consumption due to project activity will be monitored (the same has been updated in section B6.1 and 7.1 of PDD) and project emission due to combustion of fossil fuels will be calculated as per “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion”.
- d. The plant will run on rice husk which is available in surplus in that region within 50 km of project site.

Following table gives the annual rice husk generation, consumption and surplus within 50 km of project site:-

| Sr. No | Region   | No of Rice Mills | Rice husk generated (MTPA) | Rice husk consumption by other industry (MTPA) | Surplus rice husk available as fuel (MTPA) |
|--------|----------|------------------|----------------------------|--|--|
| 1      | 0-15 km  | 37               | 56832                      | 0  | 56832                                      |
| 2      | 15-25 km | 9                | 13824                      | 0  | 13824                                      |
| 3      | 25-50 km | 71               | 109056                     | 0  | 109056                                     |
|        | Total    | 117              | 179712                     | 0  | 179712                                     |

(Source- Biomass assessment study report, Doc no GPD/BAS/07-08/031(F), Page no 15)

Total biomass required in the project activity is 102065 MT per annum. This shows that the quantity of available rice husk in the region (e.g. 50 km radius), is more than 25% of the quantity of biomass that is utilised including the project activity.

Moreover MEDA sanctions biomass projects if and only when there is no overlapping of the command region with any other similar project activity. This means that there is no competing use of biomass including rice husk in that region.

#### Documentation Provided by Project Participant:

- Evidence for “Moreover MEDA sanctions biomass projects if and only when there is no overlapping of the command region with any other similar project activity”

#### Information Verified by Lead Assessor:

- a. Page 5, table point no. 19 of the DPR was checked for the values of PLF
- b. Tool to calculate the emission factor of an electricity system was checked for the weights for OM & BM for the proposed project activity
- c. The applicability of the “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” version 2 was checked against the selected methodology AMS I.D version 15.
- d. Ref: PGN/PG-II/BPP-009/2007-08/ dated 10/08/2007 regarding biomass based independent power projects in Maharashtra

**Reasoning for not Acceptance or Acceptance and Close Out:**

**Date:** 16/02/2010

- a. Page 5, table point no. 19 of the DPR mentions a PLF of 80% for the first year, 85% for the second and 90% from the third year onwards. PP is requested to clarify why there is a change in the PLF considered for the first three years.
- b. PP has corrected the statement mentioned in the PP response above and has given the reference to the Tool to calculate the emission factor of an electricity system which mentions that weights of 50% from OM & BM are applicable for projects other than wind and solar. This was checked and accepted.
- c. – FO is expected to be use for starting purpose only.PP has included FO consumption as parameter in section B.7.1.this is found satisfactory. Project emission will be calculated as per “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” version 2,this is found satisfactory ,hence accepted.
- d. The quantity of surplus rice husk available in the command region (50 km radius), is more than 25% of the quantity of biomass that is utilized for the project activity. Hence as per paragraph 18 of attachment C to appendix B, leakage due to competing use for biomass can be neglected. Also, the documentary evidence provided by the PP states that the MEDA avoids overlap in biomass collection area by allocating biomass collection area according to the availability of biomass within the radius of 15 kms, 15-25 kms, 25-35 kms, and 50 kms from their project locations. Hence, accepted.

CL #10 is open.

**Project Participant Response:**

**Date: 15/04/2010**

- a. The Plant Load Factor (PLF) of a biomass based power plant is a function of fuel availability, moisture content of the fuel, mechanical efficiency, age of the machine, steam pressure, heat rate and calorific value of the biomass. The project activity may take three years to stabilize.  
  
The given PLF in DPR (80% in first year, 85% in second year and 90% from third year onward) is project specific and this can be compared with the PLF given by MERC biomass tariff order, dated 8th August 2005. As per MERC commission ruling, the PLF can be assumed as 70-75% during first year and 85% to 90% from second year onward. This is based on 330 days of operation.
- b. –closed
- c. – closed
- d. As per AMS ID version 15, project emission is zero for the proposed project activity. The PP has also ruled out the possibility of using fossil fuels for co-firing, hence the project activity emissions are not applicable under the current scenario. However, small quantity of fossil fuel may be used for start up of the boiler in the project activity. PP has installed F.O. based DG set to meet power demand during start-up of the plant. Hence the above mentioned tool will be used for calculation of project emission.
- e. - Closed

**Documentation Provided by Project Participant:**

[Revised PDD](#)

**Information Verified by Lead Assessor:**

MERC biomass tariff order dated 08/08/2005 was checked for the value of PLF  
The applicability and the monitoring requirements of the “Tool to calculate project or leakage CO<sub>2</sub> emissions from fossil fuel combustion” version 2 was checked against the revised PDD

**Reasoning for not Acceptance or Acceptance and Close Out:**

**Date: 08/06/2010**

- a. The MERC biomass tariff order states that – “Based on information and DPRs furnished by Project holders, the Commission notes that most of the Project cases assume a plant capacity utilization of 70-75 % during the 1st year of operation, and 85 % to 90 % from the 2nd year onwards. The Projects consider plant operating days during a year as 330 days (i.e. availability factor of > 90%). This translates into an expected PLF of 67% during the 1st year, and around 81% from the 2nd year of operation.” Hence, the PLF used by the PP is appropriate and conservative.
- b. – closed
- c. – closed
- d. – closed
- e. – closed

Thus CL #10 is closed out.

**Acceptance and Close out by Lead Assessor:** **Date:** 08/06/2010

|       |            |         |            |                                  |       |
|-------|------------|---------|------------|----------------------------------|-------|
| Date: | 09/07/2009 |         | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |       |
| Type: | CL         | Number: | 11         | Reference:                       | C.1.1 |

**Lead Assessor Comment:**

- a. Project participant need to provide the evidence for start date of project activity as per paragraph 67 of EB 41 meeting report.
- b. The starting date of the project activity as mentioned, in the Section C.1.1 of PDD is 20/08/2009 (Boiler purchase order date).Project Participant is required to clarify how a purchase order can be post-dated.

**Project Participant Response:** **Date:** 07/08/2009

20.08.08 is the date of the boiler purchase order, which is considered as the start date of the project. The date 20/08/2009 is a typographical error in the PDD, and it has been corrected.

**Documentation Provided by Project Participant:**

Boiler purchase order has been provided as an evidence for consideration of the start date.

**Information Verified by Lead Assessor:**

- a. Boiler Purchase contract between A. A. Energy Ltd & ISGEC John Thompson dated 20/08/2008 was verified as evidence for the start date of the project activity.
- b. Section C.1.1 of the PDD version 2 was checked for the start date of the project activity

**Reasoning for not Acceptance or Acceptance and Close Out:** **Date:** 08/10/2009

- a. PP has provided the Boiler Purchase contract between A. A. Energy Ltd & ISGEC John Thompson dated 20/08/2008 as evidence for start date of the project activity. This is as per para 67 of EB 41 meeting report and hence accepted.
- b. The start date of the project activity (boiler purchase contract) in section C.1.1 of the PDD version 2 is correctly mentioned. This was checked against the boiler purchase contract and hence accepted.

Thus CL #11 is closed out.

**Acceptance and Close out by Lead Assessor:** **Date:** 08/10/2009

|       |            |         |            |                                  |       |
|-------|------------|---------|------------|----------------------------------|-------|
| Date: | 09/07/2009 |         | Raised by: | Ravi Kant Soni/Sudeep Kodialbail |       |
| Type: | CAR        | Number: | 12         | Reference:                       | E.1.1 |

**Lead Assessor Comment:**

|  |                         |
|--|-------------------------|
| <p>d. Project participant needs to provide copy of application to office of the Municipal Council in Desaignaj Wadsa seeking “No Objection” to set up the proposed biomass based power generation project and clarify about the intention of this deed in view of local stakeholders consultation meeting</p> <p>e. Please provide copy of notice published by Municipal Council for the information of general public in the region regarding the project activity</p> <p>f. Project participant needs to provide the documentary evidences for the objections/comments received by local people for and against the proposed project activity and how due account was taken of any comments received</p>   |                         |
| <b>Project Participant Response:</b>   | <b>Date:</b> 07/08/2009 |
| <p>a. No Objection Certificate is issued to a project only if local stakeholders do not have any objections to implement this project. With a view to seek opinion of the local stakeholders and understand their concerns a meeting was conducted by Municipal Council of Desaignaj Wadsa before issuing NOC.</p> <p>b. Copy of the notice in local language (Marathi) will be provided for the reference of the DOE.</p> <p>c. The minutes of the meeting has been put within the NOC letter and it has reference to – Municipal Council’s request to provide employment opportunity for local unemployed people, provide path way for farmers to reach nearby lands, operate the power plant as per state PCB norms. All these are clearly mentioned in the NOC and PP has agreed to abide by these.</p>  |                         |
| <b>Documentation Provided by Project Participant:</b>  |                         |
| <p>a. Copy of application made to Municipal Council of Desaignaj Wadsa is attached for the reference of the DOE</p> <p>b. Copy of Public Notice in Marathi language with English translation is provided for the reference of DOE</p> <p>c. The minutes of the meetings as a part of NOC in Marathi language with English translation is provided for the reference of the DOE</p>   |                         |
| <b>Information Verified by Lead Assessor:</b>  |                         |
| <p>a. Application for grant of NOC to the Desaignaj Municipal Council dated 23/01/2008</p> <p>b. Copy of public notice in Marathi dated 02/02/2008 &amp; its English translation</p> <p>c. The minutes of the meeting held on 27/02/2008, which is a part of the NOC (Ref No. KV/NPDC/NV/75-2008) dated 10/03/2008 was checked.</p>  |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>   | <b>Date:</b> 08/10/2009 |
| <p>a. The application for grant of NOC to the Desaignaj Municipal Council dated 23/01/2008 for setting up a biomass based power plant at the proposed site was checked and accepted. The PP has also clarified that; the NOC to implement the project activity would be issued only if the local stakeholders would not have any objection to the same. As a part of the process of issuing the NOC the Municipal Council arranged for a meeting of the local stakeholders to understand their concerns. Thus the PP has clarified the intention of applying for a NOC in view of the stakeholder consultation meeting &amp; hence accepted.</p> <p>b. The copy of the public notice in Marathi language provided by the PP is not legible. The PP is requested to provide a clear copy of the same.</p> <p>c. The details of the meeting held on 27/02/2008 mentions that the stakeholders who has objections were invited for the meeting, their sayings were heard and ‘for &amp; against’ discussions were held on their objections. A unanimous decision to give the NOC to the PP was taken provided the PP adhered to the 4 terms and conditions clearly mentioned in the NOC. Thus the objections/comments of the local people were heard &amp; addressed. Hence accepted.</p> |                         |
| Thus CAR #12 is open.  |                         |
| <b>Project Participant Response:</b>   | <b>Date:</b> 25/01/2010 |

|   |                         |
|---|-------------------------|
| a.- closed  |                         |
| b. A readable clear copy is being provided to the DOE   |                         |
| c. – closed   |                         |
| <b>Documentation Provided by Project Participant:</b>   |                         |
| The copy of the public notice in Marathi language   |                         |
| <b>Information Verified by Lead Assessor:</b>   |                         |
| Document not submitted  |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>  | <b>Date:</b> 15/02/2010 |
| PP has not submitted the above mentioned document. PP is requested to submit the same.<br>Thus CAR #12 is open.   |                         |
| <b>Project Participant Response:</b>  | <b>Date:</b> 15/04/2010 |
| A readable clear copy is being provided to the DOE  |                         |
| <b>Documentation Provided by Project Participant:</b>   |                         |
| A copy of public notice in Marathi Language   |                         |
| <b>Information Verified by Lead Assessor:</b>   |                         |
| Clear copy of the public notice submitted by the PP   |                         |
| <b>Reasoning for not Acceptance or Acceptance and Close Out:</b>  | <b>Date:</b> 08/06/2010 |
| PP has submitted a clear copy of the public notice. This has been checked and accepted.<br>CAR #12 is closed out. |                         |
| <b>Acceptance and Close out by Lead Assessor:</b>   | <b>Date:</b> 08/06/2010 |

## A.4 Annex 4: Team Members Statements of Competency

### Statement of Competence

Name: Soni, Ravikant

#### Status

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

#### Scopes of Expertise

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

Approved Member of Staff by:

Siddharth Yadav

Date:

28/10/2009

## Statement of Competence

Name: Sudeep  
Kodialbail

### Status

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

### Scopes of Expertise

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

Approved Member of Staff by: Siddharth Yadav Date: 07/06/2010



## Statement of Competence

Name: Pal, Kaushik

### Status

|                  |                 |                      |   |
|------------------|-----------------|----------------------|---|
| - Lead Assessor  | x               | - Expert             | x |
| - Assessor       | x               | - Financial Expert   |   |
| - Local Assessor | India and Nepal | - Technical Reviewer |   |

### Scopes of Expertise

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

Approved Member of Staff by:

Siddharth Yadav

Date:

13 January 2010

## Statement of Competence

Name: Anshul  
Sharma

### Status

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

### Scopes of Expertise

|   |  |
|---|--|
| <b>5. Energy Industries (renewable / non-renewable)</b>   |  |
| <i>Sub scope(s):</i>  |  |
| <b>6. Energy Distribution</b>   |  |
| <i>Sub scope(s):</i>  |  |
| <b>7. Energy Demand</b>   |  |
| <i>Sub scope(s):</i>  |  |
| <b>8. Manufacturing</b>   |  |
| <i>Sub scope(s):</i>  |  |
| <b>16. Chemical Industry</b>  |  |
| <i>Sub scope(s):</i>  |  |
| <b>17. Construction</b>   |  |
| <i>Sub scope(s):</i>  |  |
| <b>18. Transport</b>  |  |
| <i>Sub scope(s):</i>  |  |
| <b>19. Mining/Mineral Production</b>  |  |
| <i>Sub scope(s):</i>  |  |
| <b>20. Metal Production</b>   |  |
| <i>Sub scope(s):</i>  |  |
| <b>21. Fugitive Emissions from Fuels (solid, oil and gas)</b>   |  |
| <i>Sub scope(s):</i>  |  |
| <b>22. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride</b> |  |
| <i>Sub scope(s):</i>  |  |
| <b>23. Solvent Use</b>  |  |
| <i>Sub scope(s):</i>  |  |
| <b>24. Waste Handling and Disposal</b>  |  |
| <i>Sub scope(s):</i>  |  |
| <b>25. Afforestation and Reforestation</b>  |  |
| <i>Sub scope(s):</i>  |  |
| <b>26. Agriculture</b>  |  |
| <i>Sub scope(s):</i>  |  |

Approved Member of Staff by: Siddharth  
Yadav Date: 19/05/2010

## Statement of Competence

Name: Singh, Kaviraj

### Status

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

### Scopes of Expertise

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

Approved Member of Staff by:

Siddharth Yadav

Date:

16/12/2009

## Statement of Competence

Name: **Vikas Bankar**

### Status

|   |                |              |   |                    |          |
|---|----------------|--------------|---|--------------------|----------|
| - | Lead Assessor  |              | - | Expert             | <b>x</b> |
| - | Assessor       | <b>x</b>     | - | Financial Expert   |          |
| - | Local Assessor | <b>India</b> | - | Technical Reviewer |          |

### Scopes of Expertise

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

Approved Member of Staff by: **Siddharth Yadav** Date: **20/02/2010**