VALIDATION REPORT

Star Wire (India) Vidyut Pvt. Ltd.

Biomass based power plant in Mahendargarh, Haryana

SGS Climate Change Programme
SGS United Kingdom Ltd
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Date of Issue:	**Project Number:**
12/06/2014	CDM.VAL3258
Project Title:	
Biomass based power plant in Mahendargarh, Haryana	
Organisation:	**Client:**
SGS United Kingdom Limited	Star Wire (India) Vidyut Pvt. Ltd.
Publication of PDD for Stakeholders Consultation	
Commenting Period:	15/01/2011 – 13/02/2011
First PDD Version and Date:	version 01 dated 12/01/2011
Final PDD Version and Date:	version 14 dated 28/05/2014

Summary:

Star Wire (India) Vidyut Pvt. Ltd. has commissioned SGS to perform the validation of the project: Biomass based power plant in Mahendargarh, Haryana.

Methodology Used: AMS I.D

Version and Date: Version 17.0, Dated 03/06/2011 (valid from 17 June, 2011).

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against CDM Validation and Verification Standard (Version 06.0), Kyoto Protocol requirements, CDM Executive Board/UNFCCC rules.

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.

The report and the annexed validation describes a total of 12 findings which include:

- 11 Corrective Action Requests (CARs);
- 00 Clarification Requests (CLs);
- 01 Forward Action Requests (FARs);

All findings have been closed satisfactorily. The project will be recommended to the CDM Executive Board with a request for registration.

Subject:			**Document Distribution**
CDM Validation			
Validation Team:			
Ravikant Soni – Team Leader/ Lead Assessor & Local Assessor Rekibuddin Ahmed - Assessor Sauvik Banerjee - Sectoral Expert TA 1.1 Chandra Prakash Singh – Financial Expert			☒ No Distribution (without permission from the Client or responsible organisational unit)
Technical Review:			
Date: 16/06/2014 Name: Shivaji Chakraborty			☐ Limited Distribution
Authorised Signatory:			
Name: Siddharth Yadav Date: 24/06/2014			☐ Unrestricted Distribution
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0	24/07/2013	105	
1	21/12/2013	115	
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Abbreviations

AMS	Approved Small Scale Methodology
BSE	Bombay Stock Exchange
CA	Chartered Accountant
CAPM	Capital Asset Pricing Model
CAR	Corrective Action Requested
CDM EB	CDM Executive Board
CEA	Central Electricity Authority
CER	Certified emission reduction
CERC	Central Electricity Regulatory Commission
CL	Clarification Request
CDM	Clean Development Mechanism
COP/MOP	Conference of Parties serving as the Meetings of Parties
CRISIL	Credit Rating Information Services of India Limited
DNA	Designated National Authority
DOE	Designated Operational Entity
DPR	Detailed Project Report
EB	Executive Board
EIA	Environmental Impact Assessment
EPC	Engineering Procurement & Construction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
HREDA	Haryana Renewable Energy Development Agency
HERC	Haryana Electricity Regulatory Commission
HCA	Host Country Approval
IJT	ISGEC John Thompson Ltd. (IJT)
INR	Indian Rupees
IPCC	Intergovernmental Panel on Climate Change
ISGEC	Indian Sugar & General Engineering Corporation
IT	Income Tax
IRR	Internal Rate of Return
ISHC	International Stake Holder Consultation
KWh	Kilo Watt hour
LA	Lead Assessor
LoA	Letter of approval
MW	Mega Watt
MWh	Mega Watt hour
MT	Metric Tons
MAT	Minimum Alternate Tax
MoEF	The Ministry of Environment and Forest
MOM	Minutes Of Meeting
MOC	Modalities Of Communication
MP	Monitoring Plan
NRSE	New & Renewable Sources of Energy
NEWNE	North , East, West & North-East
ODA	Official Development Assistance
OM	Operating Margin
O & M	Operation and Maintenance
PCP	Project Cycle Procedure
PLF	Plant Load Factor
PPA	Power Purchase Agreement
PLR	Prime Lending Rate
PDD	Project Design Document

PP	Project Participant
PO	Purchase Order
QA/QC	Quality Assurance & Quality Control
RBI	Reserve Bank of India
REC	Rural Electrification Corporation
SSC	Small Scale
SWIVPL	Star Wire (India) Vidyut Pvt. Ltd.
SLM	Straight Line Method
TPH	Ton Per Hour
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
WAAC	Weighted Average Cost of Capital

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Annexes:

1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Star Wire (India) Vidyut Pvt. Ltd. to perform a validation of the project: Biomass based power plant in Mahendargarh, Haryana in India.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Standard (Version 06.0) and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

By implementing biomass based Greenfield power generation project, in which the biomass based boiler will generate steam and the same will be fed in a turbo generator to generate power of 9.9 MW in the project activity. The net electricity generated by the project activity will be exported to the NEWNE grid. The net electricity fed to the grid would be measured by a bi-directional energy meter which would have been otherwise generated by the carbon intensive NEWNE grid of India. 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 17. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be 524,530 t of CO2e over a 10 year crediting period, averaging 52,453 t of CO2e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

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

Signed on Behalf of the Validation Body by Authorized Signatory

Signature: 

Name: Siddharth Yadav

Date: 24/06/2014

2. Introduction

2.1 Objective

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

2.2 Scope

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

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

2.3 GHG Project Description

The project activity initiative by Star Wire (India) Vidyut Pvt. Ltd., is a renewable energy power project, which uses biomass residues namely mustard husk, julia flora and paddy waste as fuel for energy generation. The purpose of the project activity is to optimally utilize the biomass residues for energy generation and then export clean power to the NEWNE grid through the northern regional grid. This electricity generation partly substitutes the power generation by carbon intensive NEWNE regional grid (which is primarily served by plants using carbon emissive conventional fuels like coal, diesel/oil, natural gas etc.). The project activity reduces CO_2 emissions and also conserves fossil fuels. Therefore, this project activity also has excellent environment benefits, in terms of reduction in carbon emissions and natural resource conservation.

2.4 The Names and Roles of the Validation Team Members

Assessment Team	**Role**
Ravikant Soni	Lead Assessor and Local Assessor
Rekibuddin Ahmed	Assessor
Sauvik Banerjee	Sectoral Expert TA 1.1 (Thermal energy generation from fossil fuels and biomass including thermal electricity from solar)
Chandra Prakash Singh	Financial Expert

Technical Review	**Role**
Shivaji Chakraborty	Technical Reviewer and Sectoral Expert TA 1.1 (Thermal energy generation from fossil fuels and biomass including thermal electricity from solar)

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 12/01/2011 and the subsequent versions, Version 02 dated-20/07/2011, 03 dated- 10/12/2011, version 04 dated -14/02/2012, version 05 dated- 05/07/2012, version 06 dated 04/12/2012, version 07 dated 19/02/2013, version 08 dated 18/04/2013, version 09 dated 13/09/2013, version 10 dated 01/11/2013, version 11 dated 19/11/2013, version 12 dated 27/01/2014, and version 13 dated 25/04/2014 and version 14, dated 28/05/2014 (final version). The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2. The site visit was performed on 18/02/2011 by the assessment team. The site visit results are summarised as a separate checklist as Annex 1 in 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 Standard; Version 06.0. 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:

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

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 a CL may also lead to a CAR.

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

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

3.4 Internal Quality Control

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

4. Validation Findings

4.1 Approval

The host Party for this project is India. India has ratified the Kyoto protocol on 26th Aug 2002. This was checked from the UNFCCC website http://maindb.unfccc.int/public/country.pl?country=IN. The PP has submitted, to the DOE, a copy of the letter of approval issued by the Indian DNA, 'The Ministry of Environment & Forests' bearing No. 4/6/2012-CCC dated 14/09/2012[/2/] which has been checked with original, during a meeting between the PP and DOE at the PP's office, by the assessment team.

The authenticity of LoA[/2/] was further cross checked from the Indian DNA website[/36/] (http://www.cdmindia.gov.in/project_details_view.php?id=282&oid=1&page=67&reporttype=1).

Furthermore the authenticity of LoA is verified through contacting Dr. A. Duraisamy who is current Director and Member Secretary of the National CDM Authority, Ministry of Environment and Forests, Government of India[/63/].

Hence the assessment team able to confirms that the LoA[/2/] is authentic and meets the requirements of Para 48 of VVS[/7/]; version 06.0. The assessment team has concluded that the letter of approval has been issued by the Indian DNA and is valid for the proposed CDM project activity. The LoA[/2/] clearly confirms that the Government of India has ratified the Kyoto Protocol in 26th August 2002; participation is voluntarily for the project activity and clearly mentioned that the project activity contributes to the sustainable development of India. It has also been confirmed that the LoA[/2/] is unconditional with respect to the party to the Kyoto Protocol, voluntarily participation, contribution towards sustainable development and the title of the project activity. The name of the PP as indicated in the Letter of approval and in section A.1 and section A.4 of the PDD[/1/] was found to be consistent. This was found to be in accordance with para 37 of the CDM modalities and procedures. This was also found to be as per VVS[/7/] version 06.0 paragraphs 38 to 48.

Discussion of CARs/CLs

A Letter of Approval from the Indian DNA was not submitted by the project participant during the desk review of the PDD before the site visit. Thus, **CAR 01** was raised asking the project participant to submit the Letter of approval from the Indian DNA. The letter of Approval[/2/] issued by the Indian DNA "The Ministry of Environment and Forest (MoEF), dated – 14/09/2012 was provided by the PP. The assessment team has confirmed that the letter of approval has been issued by the Indian DNA and is valid for the proposed CDM project activity by checking it from the host country DNA website (http://www.cdmindia.gov.in/project_details_view.php?id=282&oid=1&page=67&reporttype=1). The LoA[/2/] clearly confirms that the Government of India has ratified the Kyoto Protocol on 26th August 2002; participation is voluntarily for the project activity and clearly mentioned that project activity contributes to sustainable development of India. It has been confirmed that the LoA[/2/] is unconditional with respect to the party to the Kyoto Protocol, voluntarily participation, contribution towards sustainable development and the title of the project activity. The response by the PP was accepted and hence, **CAR 01** was closed out. For details please refer CAR 01 in the discussion of findings in Annex 3 of this report.

Opinion

With reference to paragraph 38 of VVS, version 06.0, the assessment team validated and confirmed that the designated national authority (DNA) of the Party indicated as being involved in the proposed CDM project activity in the PDD is India and the DNA has provided a written letter of approval[/2/], in the name of the project participant as mentioned in the PDD.

Further the LoA letter was checked for its compliance of paragraph 39 of VVS, version 06.0, and the assessment team concluded that the LoA letter has met the requirements of paragraph 39.

The assessment team also confirmed that the approval is unconditional with respect to paragraph 39 (a) to (d) of VVS version 06.0. The assessment team also confirms that the letter of approval has been issued by the host country DNA and is valid for the proposed project activity under validation.

The validation team confirms that the LoA[/2/] submitted by the PP is in compliance with the requirements of paragraphs 39-42 of the VVS version 06.0[/7/].

4.2 Authorization

The host Party for this project is India. India has ratified the Kyoto protocol on 26th August 2002. This was checked from the UNFCCC website http://maindb.unfccc.int/public/country.pl?country=IN.

The Project Participant has provided the Host country DNA approval letter as mentioned above in section 4.1 of this report. No Annex I Party has been identified in the PDD and therefore no further Letter of Approval was available. It is observed that the CDM EB has agreed that the registration of a CDM project activity can take place without an Annex I Party being involved at the stage of registration although it should be noted that before CER can be transferred to an Annex 1 Party, a Letter of Approval from Annex 1 Party will need to be submitted.

The name of the Project Participant is "Star Wire (India) Vidyut Pvt. Ltd.", who is a private entity and also the project developer and this same information has been listed in tabular form in section A.4., of the PDD and also, was found to be consistent with the contact details provided in Appendix 1 of PDD.

The proposed CDM project has been web hosted in the UNFCCC website *http://cdm.unfccc.int/Projects/Validation/DB/EMJTIGVCKWJWZT9ZWRWR36G8GC5UKQ/view.html* for global stakeholders' process to invite comment as per the CDM requirements. As per the guidelines outlined under 17 and 18 of PCP version 06 the PDD of proposed CDM project has been web hosted from 15/01/2011 – 13/02/2011. This was checked by the assessment team and found to be appropriate. This discussion signifies that the proposed CDM project activity fulfil the relevant CDM requirement.

Opinion

The assessment team has confirmed that the project participants for the proposed project activity have been authorised by the DNA of India in a letter of approval[/2/]. The project participant is listed in tabular form in section A.4 of the PDD[/1/] and this information is consistent with the information provided in Appendix 1 of the PDD[/1/]. No entities other than those authorised as project participants are included in these sections of the PDD[/1/].

The assessment team further confirms that the approval of participation has been issued from the relevant DNA. The authenticity of LoA[/2/] was cross checked from the DNA's website[/36/] (http://www.cdmindia.gov.in/project_details_view.php?id=282&oid=1&page=67&reporttype=1), which has clearly stated that the LoA letter has been issued to the project activity. This is in line with the requirement of paragraph 45-48 of VVS[/7/] version 06.0.

4.3 Modalities of Communication and MoC Statement

The corporate identity of the Project Participants and focal points has been included in the MoC[/3/] statement provided by the PP. The assessment team confirms that MoC statement signed by the PP, dated 12/01/2013 has been correctly completed and organised. The assessment team also confirms that-

a) The latest version of the form "Modalities of Communication Statement" (F-CDM-MOC) has been used.
b) The information required as per the F-CDM-MOC, including its annex 1 is correctly completed.
c) The Project Participants authorized signatories signing the F-CDM-MOC correspond to the project participants authorised signatures included in F-CDM-MOC, annex 1.

Discussion of CARs/CLs

The MoC[/3/] was not provided by the PP during the desk review **CAR 02** was raised for the same. The MoC[/3/] letter dated 12/01/2013 were provided by the PP. The name of the contact person for the PP and the project title mentioned in MoC[/3/] was checked with the PDD and it was found to be matching and hence this was accepted and the issue **CAR 02** has been closed. For details please refer CAR 02 in the discussion of findings in Annex 3 of this report.

Opinion:

The assessment team confirms that the validation of the MoC[/3/], dated 12/01/2013 as submitted by the PP was done as per paragraph 54-57 of VVS, Version 06.0, and the MoC[/3/] form has been filled out as per the requirement of VVS, Version 06.0.

4.4 Project Design Document including Project Description

The PDD[/1/] mentions the unique name of the project activity as "Biomass based power plant in Mahendargarh, Haryana". The name of Project activity was also checked from the UNFCCC website http://cdm.unfccc.int/Projects/Validation/DB/EMJTIGVCKWJWZT9ZWRWR36G8GC5UKQ/view.html and was found to be matching and hence accepted by the assessment team. Further the UNFCCC project database was checked and no registered project was found with the same name or location.
It is confirmed that the PDD[/1/] was prepared in accordance with the EB 66, Annex 09 and F-CDM–SSC-PDD template version 04.1 as available on the UNFCCC website http://cdm.unfccc.int/Reference/PDDs_Forms/index.html#proj_cycle. The table for mentioning the project participants has been correctly mentioned in the PDD[/1/] (Final Version), in section A.4., which is as per VVS[/7/], version 06.0, Para 63.
The proposed CDM project activity is located in Mahendargarh District of Haryana, India. Latitude: 28º 18' 39" North, Longitude: 76º 5' 23" East which has been checked from the website http://www.gorissen.info/Pierre/maps/googleMapLocation.php?lat=28.310833&lon=76.089722&setLatLon=Set and found to be correct. This is also the location where the site visit for the project activity was carried out by members of the SGS assessment team at the time. Hence this was concluded that the project meets the relevant CDM requirements and PDD[/1/] was checked against the forms and guidance mentioned on UNFCCC website.

Assessment on Project description:
The description of the proposed CDM project activity as contained in section A.1 of the PDD version 1[/1/], as well as the subsequent version (in particular the final version, version sufficiently covers all relevant elements accurately and it is consistent with details provided in further chapters of the PDD. The Project activity installed a 9.9 MW turbine to generate power. The Project activity will be supplying generated power to the state grid which is part of the NEWNE grid system of India. The 132 kV transmission lines from the plant's switchyard are connected to the existing grid sub-station of 132kV at Mahendergarh.

The project details and specifications as presented in the PDD are validated by the assessment team from the Detailed Project Report[/11/], dated April 2008, prepared by Resurgent India Limited (RIL) and found consistent. The project capacity to be implemented was initially envisaged as 10 MW, this was checked from the Detailed Project Report[/11/], dated April 2008. However at a later stage of planning and prior to the actual implementation, considering the availability of biomass resources in the project activity location, the capacity of the project activity was revised to 9.9 MW as per the discussion between the PP and the EPC contractor, ISGEC Heavy Engineering Limited. This fact was checked by the assessment team based on the review of the letter dated 06/09/2011[/10.1/] issued by ISGEC Heavy Engineering Limited to the PP. The capacity of the project activity was also cross checked from the letter dated 14/02/2012[/51/] issued by the Director General, Renewable Energy Department, Haryana to the PP, after assessing the availability of biomass in the vicinity of the project activity location. This is noteworthy that the proposed project activity was yet to be implemented at the demarcated project site at the time the validation site visit was conducted in February 2011.

The project activity will be using biomass residues (namely, mustard crop residue, Julia Flora and paddy waste) as fuel for energy generation. This was checked by the assessment team from page 08 of the Detailed Project Report[/11/], dated April 2008, prepared by Resurgent India Limited (RIL). The purpose of project activity is to optimally utilize the biomass residues for energy generation and then export clean power to the NEWNE grid. This electricity generation partly substitutes the power generation by carbon intensive NEWNE regional grid (which is primarily served by plants using carbon emissive conventional fuels like coal, diesel/oil, natural gas etc.). The supply of electricity to the grid was checked from the PPA[/52/] of the project activity signed between the PP and the Haryana Power Purchase Centre, and dated 22/06/2012.

The steam requirements of the turbine generator set will be met through Natural Circulation, Balanced Draft boiler of 47.5 TPH capacities producing high pressure steam at 67 kg/cm2 (a). This was validated by the assessment from page 08 of the Detailed Project Report/11/, dated April 2008, prepared by Resurgent India Limited (RIL). The assessment team is of the opinion that the technical description as mentioned in the PDD/1/ is accurate and complete.

Based on the implementation status of the project as reported under section A.2 of the final PDD/1/, the proposed project activity has been commissioned and synchronized to the grid for supplying of electricity on 03/05/2013, this status was validated based on the review of Protocol for Commissioning of 9.9 MW Turbo-generator, dated 03/05/2013/56/, issued by the appointed EPC contractor (ISGEC Heavy Engineering Limited) of the proposed project activity. This fact was also cross checked from the MOM of Synchronisation meeting/57/, dated 03/05/2013, signed by the PP and State Authorities.

It is to be noted that, the project was yet to be implemented during the validation site visit, which was carried out by the assessment team on 18/02/2011.It is confirmed that the monitoring plan and monitoring parameters are in compliance with the monitoring methodology as described under section 4.10 of this report. Also in line with the guidelines outlined under paragraph 133 of VVS version 06, the assessment team able confirm that

a) The monitoring plan described in the PDD is in compliance with the requirement of methodology and applicable tools.
b) Monitoring arrangements described in the monitoring plan are feasible within the project design.
c) Project participant is able to implement the monitoring plan.

However FAR 12 was raised by the assessment team to check the appropriateness of the implementation and the use of monitoring equipments during the first periodic verification. This is in line with the requirement 27 of VVS version 06.0 as the FAR raised is related to implementation issues and not related to CDM requirements for registration.

Discussion of CARs/CLs & FAR

CAR#03 was raised to substantiate the following information's–

Documentary evidence of project activity i.e. Technical specification of the Boiler & the turbine

Following CAR#03, the PP stated that-

Technical specifications of the boiler and turbine have been taken from the Detailed Project Report/11/ (DPR) prepared by a third party Resurgent India Limited (RIL) on April 2008. The same has been provided by the PP. The purchase order of the boiler and turbine has been provided by the PP. The lifetime of the boiler and turbine is taken as the 20 years/12/ each, provided by the technology supplier ISGEC Heavy Engineering Limited, dated- 11/12/2012. This was also checked from CERC Tariff Regulation, 2009 (http://cercind.gov.in/Regulations/Final_SOR_RE_Tariff_Regulations_to_upload_7_oct_09.pdf) which also states the life time of biomass projects as 20 years.

From the Contract for Supply between the PP and M/s ISGEC John Thompson, dated 16/03/2011/10/ installed capacity of project activity turbine was found to be 10MW however the PP got approval from HREDA for 9.9 MW. In this regard the PP further provided letter from IJT dated 06/09/2011/10.1/. The PP has also revised the PDD and mentioned the turbine capacity as 9.9 MW in line with the letter.

CAR#03 was further raised due to the initial version of the PDD capacity of the boiler was mentioned as 47 TPH, which was not matching with contracts signed with the technology suppliers. The PP has corrected the capacity of boiler as 47.5 in line to the Contract for Supply/10/ between the PP and M/s ISGEC John Thompson, dated 16/03/2011.

In addition to this, the PP was also requested to clarify the project description as mentioned in the PDD with regards to the implementation schedule of the project activity. Also the project description was not transparent with regards to the baseline scenario. It is unclear which grid system the power is being evacuated to, and the procedure of metering. Furthermore, the Government of India has not been designated as ratified to Kyoto Protocol as Host Party. The PP was requested to clarify the inconsistency.

Responding to this, the PP modified section A.1 of the PDD (under VVS track) and sufficient information on the project implementation was added. The PP has also clearly described the baseline scenario in the

section A.1 of the PDD. Furthermore, the Host Party has been corrected to India. The revised PDD was checked and was found to be correct.

Information regarding the project description (capacity of the turbine, life time of the project and technical specification of the equipment) has been checked from the DPR/11/ and the Contract for Supply between the PP and M/s ISGEC John Thompson, dated 16/03/2011/10/ by the assessment team and was found to be satisfactory. The revised PDD/1/ has also been reviewed and found to be correct.

Furthermore, the PP was requested to provide the implementation status of the project activity. Accordingly, the PP updated section A.2 of the PDD. The project was synchronised to the grid on 03/05/2013; this was checked from the Protocol for Commissioning/56/ of 9.9 MW Turbo-generator, dated 03/05/2013, issued by the EPC contractor. This was also checked from the MOM of Synchronisation/57/ meeting, dated 03/05/2013, signed by the PP and the State Authorities. Thus all the issues raised under CAR 03 were addressed by the assessment team. Thus, **CAR 03** was closed. For details please refer CAR 03 in the discussion of findings in Annex 3 of this report.

CAR#07 was raised because of the following reason;

1. In section B.2 of the webhosted PDD, it has been stated that the project activity utilizes only the renewable biomass like mustard husk, Julia flora and paddy waste, etc., in accordance with Annex 18 of EB 23. While in section B.6 of the webhosted PDD approach 1 mentions the use of fossil fuel for the project activity. The PP was requested to clarify. Furthermore, the PP was requested to explain and document transparently in the CDM-PDD the quantities and types of biomass and the biomass to fossil fuel ratio (in case of co-fired system) to be used during the crediting period and for the selection of the baseline scenario, an ex ante estimation of these quantities should be also provided as per para 19 of the methodology AMS I. D. Version 17.

2. The PP was also requested to provide all the documentary evidences and the calculations in an excel sheet for the determination of the leakages for the project activity as mentioned in section B.6 of the PDD.

In response to CAR#07 the PP clarified that the PP will use only biomass (mustard husk, Julia flora and paddy waste) in the project activity. The PP also envisaged that the project activity will not use any fossil fuel, however during contingency situations; the PP may use fossil fuel. The PP will consider project emission due to the use of fossil fuel during the course of verification (if any). Validation team has checked from the technology description as mentioned in the Detailed Project Report, dated April 2008, prepared by Resurgent India Limited (RIL) that project activity boiler is not co-fired or multi fuel fired boiler, thus it will not use fossil simultaneously with biomass. The PP has also mentioned the type of biomass used to generate electricity in section B.7.1 of the revised PDD. The PP has also clarified that there is surplus availability of biomass in the areas. This was checked from the biomass assessment report/26/, prepared by MCJ Energy Engineer's (P) Ltd, dated January, 2010 and approved by HAREDA, via letter/51/ dated 14/02/2012.

It was confirmed from the report that there is more than 25% surplus biomass available in District Mahendragarh, than the quantity of biomass that is utilized including the project activity. This is in line with the requirement of EB 47, Annex 28, General guidance on leakage in biomass project activities (Version 03), para 18. The response from the PP was found satisfactory and justified thus **CAR 07** was closed. For details please refer CAR 07 in the discussion of findings in Annex 3 of this report.

FAR 12:

FAR 12 was raised as follows-

As the project activity was not implemented during the validation site visit (conducted on 18/02/2011), hence a FAR is raised to check the appropriateness of the implementation and use of monitoring equipments during first periodic verification. This is in line with the requirement paragraph 27 of VVS version 06.0.

Opinion:

The PDD satisfies the requirements of paragraphs 62 & 64 of VVS[/7/] version 06.0. The PDD used as a basis for validation has been prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website. The PDD contains a clear description of the project activity that provides a clear understanding of the precise nature of the project activity. This description was found to be accurate and complete. All details have been consistently mentioned throughout the PDD.

With reference to paragraph 69 of VVS, version 06.0, the assessment team confirms that the accuracy and completeness of the project description was checked. The documentary evidences as mentioned above were also used as cross checked to confirm the accuracy and completeness of the project description. Thus on the basis of the assessment during the site visit and subsequent cross checking of documentary evidences, the assessment team concluded that the completeness of the project description is correct and consistent.

4.5 Eligibility as a Small Scale Project

The project activity correctly fits in to the category of small scale project activities. The total installed capacity of the project activity is 9.9 MW, which is under the threshold limit of small scale project activities as per 4/CMP.1, Annex II. The project is a grid connected renewable energy project and applies the methodology AMS ID[/8/], Version 17, which is correct for such type of project activities. The project capacity was checked and confirmed by the assessment team as described in section 4.4 of this report.

The PDD[/1/] has reported that the project participant does not have any other registered project or applied for registration of CDM project activity in the 1 km area from the present project activity by the same project participant within 2 years in same project category and technology. This was confirmed during the site visit and it was found that there is no other project activity by the same PP which has been under CDM process, this was checked from the UNFCCC website (http://cdm.unfccc.int/), and hence the assessment team is of the opinion that the proposed CDM project is not a de-bundled component of a large scale project as per EB 54, Annex 13. There is no public funding used in the project activity. The declaration letter for no ODA[/13/] diversion has been provided by the PP during the site visit, which was checked and was found to be satisfactory by the assessment team.

Opinion:

As per the requirements of paragraphs 150-153 of VVS[/7/] version 06.0, the validation team is of the opinion that the proposed project activity is eligible as a small-scale CDM project activity.

4.6 Applicability of selected methodology to the project activity

The proposed project activity confirm to AMS I.D.[/8/] version 17, under sectoral scope 01 (Energy Industries renewable-. Non- renewable sources) and justification for the applicability criteria has been mentioned clearly in the PDD[/1/]. The proposed CDM project involves generation of electricity from biomass resources and the net electricity generated will be exported to the NEWNE grid.

Applicability of AMS I.D, Version 17 to the project activity has been assessed as illustrated as below:

Para 1: *This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:*

a. *Supplying electricity to a national or a regional grid;*
b. *Supplying electricity to an identified consumer facility via national/regional grid through a contractual agreement such as wheeling.*

The project activity involves renewable energy generation utilizing renewable biomass and will supply the net electricity generated to the NEWNE grid. The project activity would displace the electricity generated by present grid mix which is dominated by fossil fuel / coal based power plants. This has been verified from the

technical description mentioned in the Detailed Project Report, dated April 2008/11/ prepared by Resurgent India Limited (RIL) of the project activity.

Para 2: *Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A[1]) applies as included in Table 2 of the methodology.*

AMS-I.D/8/ is the chosen methodology from Table 2 of the methodology as the project activity involves renewable energy generation utilizing renewable biomass and supplies the electricity to the regional grid. This has been verified from the Detailed Project Report/11/, dated April 2008, prepared by Resurgent India Limited (RIL) of the project activity, submitted by the PP and also during the validation site visit.

Para 3: *This methodology is applicable to project activities that (a) install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).*

The project activity is a Greenfield project, thereby fulfilling the given criterion (a). This was confirmed by the assessment team during the site visit and from review of the Contract for Supply/10/ signed between the PP and M/s ISGEC John Thompson, dated 16/03/2011.

Para 4: *Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:*

- *The project activity is implemented in an existing reservoir with no change in the volume of reservoir;*
- *The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m2;*

The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m2.

The project activity is a biomass based power project. Thus, this condition is not applicable for the project activity. This was confirmed by the assessment team during the validation site visit.

Para 5: *If the new unit has both renewable and non-renewable components (e.g., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.*

The proposed CDM project activity is a Greenfield project activity which is evident from the Contract for Supply/10/ between the PP and M/s ISGEC John Thompson, dated 16/03/2011This has also been verified during the site visit. The capacity of the renewable energy generation unit is 9.9 MW and is within the eligibility of 15MW for a small scale CDM project activity. Hence, this criterion is not applicable for the project activity.

Para 6: *Combined heat and power (co-generation) systems are not eligible under this category.*

The project activity is not a cogeneration system. This was verified from the DPR/11/ of the project activity by the assessment team and was found to be correct.

Para 7: *In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.*

The project is Greenfield project and does not involve any capacity expansion. This was checked from the DPR/11/ of the project activity and also from the Contract for Supply/10/ between the PP and M/s ISGEC John

[1] AMS-I.D “Grid connected renewable electricity generation”, AMS-I.F “Renewable electricity generation for captive use and mini-grid” and AMS-I.A “Electricity generation by the user”

Thompson, dated 16/03/2011. Hence, this criterion is not applicable for the project activity. This was confirmed during the validation site visit of the project activity and found to be correct.

Para 8: In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.

The project activity is a Greenfield project and there is no retrofitting or replacement involved in this project activity. This was checked from the DPR/11/ of the project activity and also from the Contract for Supply/10/ between the PP and M/s ISGEC John Thompson, dated 16/03/2011. Hence, this criterion is not applicable for the project activity. This was confirmed by the assessment team during the validation site visit of the project activity.

Opinion

As per the requirements of paragraphs 70-77 of VVS version 06.0 and 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/8/ version 17.

4.7 Project Boundary

As per the approved methodology AMS ID/8/, version 17, valid from 17th June 2011, the spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to. Thus, the project boundary covers the biomass based power generation plant, which starts from the biomass storage to the point of power supply to the regional grid. Thus, the project boundary includes biomass storage, biomass fired boiler, electricity system, auxiliary consumption and electricity supplied to the grid.

The PP has considered only CO_2 as applicable Green House Gas for the baseline emissions and it is conservative approach in line with the applied methodology. The exclusion of CH_4 & N_2O in the baseline scenario is appropriate, as there are no associated emissions of the same. The project activity involves the generation of electricity using biomass energy. There are no other sources of project emissions and considering the concept of the proposed project activity involving grid connected biomass energy generation this fact has been found reasonable, thus accepted; this is in line with the methodology and with Para 83-87 of VVS (version 6.0).

This has been confirmed during the site visit and found to be satisfactory. Thus, the PDD/1/ has correctly described the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating the project and baseline emissions for the proposed CDM project activity. Thus, it has been confirmed that the delineation in the PDDs/1/ of the project boundary is correct and meets the requirements of the applied methodology AMS ID/8/, version 17. There is no other emission occurring due to the project activity which is not accounted for by the PP. This was checked during the site visit.

Discussion of CARs/CLs

CAR 04 was raised due to following reason;

In order to provide the project boundary diagram in section B.3 of the PDD in accordance with para 9 of the baseline and monitoring methodology AMS I. D. version 16 (applicable version at the time of webhosting of the first PDD), and then the PP was further requested to clarify the project boundary in line with AMS I.D version 17 (applicable version).

In the response the PP inserted project boundary diagram in section B.3 of the revised PDD. The revised PDD version 05 has been checked and found correct. Sufficient information as provided by the PP has been duly verified by the assessment team and was found to be satisfactory. The project boundary was also checked and confirmed by the assessment team during validation site visit and no deviation from the description of the project boundary as mentioned in the PDD was observed. The final PDD/1/ has also been

reviewed and found to be correct. Thus, **CAR 04** was closed. For details please refer CAR 04 in the discussion of findings in Annex 3 of this report.

Opinion

The validation team is of the opinion that the project boundary has been correctly identified in the PDD[/1/] in line with paragraph 82-87 of VVS version 06.0[/7/].

4.8 Baseline Selection

The baseline scenario of the project activity has been chosen as per the applied methodology AMS I D[/8/], Version 17. The project activity involves the installation of a grid-connected biomass power project of installed capacity 9.9 MW, the project activity will supply the power to the NEWNE grid systems and thus replace electricity which would have otherwise been generated by the fossil fuel dominated electricity grid.

Assessment of Baseline scenario:

As per paragraph 10 of applied methodology (AMS – I D[/8/], Version 17), the baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid. This has been adopted for the proposed project activity, appropriately.

As per the clause 11 of the applied methodology, the baseline emissions are the product of electrical energy baseline ($EG_{BL,y}$) expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor. The PP has correctly adopted the baseline scenario for this project activity and is in line with the applied methodology. This was checked by the assessment team and was found to be acceptable.

As per the methodology, the emission factor can be calculated as per the procedures described in paragraph 12 (a) and (b) of the applied methodology.

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

(OR)

b) The weighted average emissions (in tCO_2equ/MWh) of current generation mix. The data of the year in which project generation occurs must be used.

The PP has selected approach 'a' i.e. combined margin emission factor with ex-ante approach. The baseline emissions are calculated based on the net energy provided to the grid (in MWh/ year) by renewable generating units, and an emission factor for the displaced grid electricity (in tCO_2/ MWh). As the project activity lies in the northern region of India, the PP has correctly identified NEWNE Grid as the connected electricity system. For the calculation of the combined margin emission factor the PP has followed to the "Tool to calculate emission factor for an electricity system[/9/]", version 4.0.0. Following the tool, the PP has referred to the CEA published database (the "CO2 Baseline Database[/31/] Version 05") for build margin and operating margin emission factors. The emission factor calculated for the NEWNE grid by the PP, as per the latest information available at the time of webhosting of the PDD is 0.8401 tCO_2e/MWh. The emission factors considered for the calculation of baseline emission was checked from the CEA website (http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm) and was found to be correct. The ex-ante determined grid emission factor will be remaining fixed for the entire project crediting period of 10 years.

On the basis of desk review of the documentary evidences (Contract for Supply[/10/] between the PP and M/s ISGEC John Thompson, dated 16/03/2011 and Detailed Project Report[/11/], dated April 2008, prepared by Resurgent India Limited (RIL)) and subsequent site visit of the project location the assessment team concluded that the project activity is a new grid connected renewable energy generation project. The

baseline scenario has been correctly established as per the applied methodology AMS I.D[/8/], Version 17, and "Tool to calculate emission factor for an electricity system[/9/]", version 4.0.0 has been correctly referred for calculation of combined margin emission factor of the NEWNE grid.

Discussion of CARs/CLs:

CAR 04 was raised, asking the PP to use latest "tool to calculate the emission factor for an electricity system" in section B.4 of the PDD. In response to CAR 04 the PP clarified that latest version of the 'tool to calculate the emission factor of an electricity system' has been used in the revised PDD version 05.

In CAR 04 the PP was asked to use latest version of methodology ASM I.D. In response to CAR 04 the PP used ASM ID version 17 which is latest in the revised PDD version 05.

CAR 04 was also raised asking the PP to justify the selection of PLF. In response to CAR 04, the PP clarified the PLF for the project activity has been referred from the DPR which is prepared by an independent third party consultant. The PP has taken PLF 80% from the DPR of the project activity, which has been prepared by a third party, M/s. Resurgent India Ltd[/11/]., contracted by the PP. This is in line with the requirement of para 3 (b) of Annex 11 of EB 48.

The revised PDD[/1/] has been verified by the assessment team and all the potential scenarios and possible alternatives included were found satisfactory. Thus CAR 04 was closed.

Opinion

It has been concluded that the approved baseline methodology AMS I.D[/8/]., version 17 has been correctly applied to identify the most reasonable baseline scenario as per para 88-95 VVS version 06.0 and reasonably represents what would occur in the absence of the proposed CDM project activity.

The emission factor for an electricity system calculation has been done as per the steps mentioned in "*Tool to calculate the emission factor for an electricity system*[/9/]".

4.8.1 Additionality of a project activity

The additionality of the project activity has been established on the basis of the requirements of Guidelines on the demonstration of additionality of small-scale project activities, version 09.0 (EB 68, Annex 27). The PP has demonstrated the project activity additionality through the aspects of investment barrier analysis i.e. a financially more viable alternative to the project activity would have led to higher emissions.

The steps taken to assess the additionality of the proposed CDM project have been discussed below:

The PP has opted to demonstrate the additionality of the project activity by performing an investment analysis using post tax Project IRR (Internal Rate of Return) as the financial indicator. The internal rate of return for the proposed project activity without CDM revenues was computed for a period of 20 years. This was found to be in line with the requirement of paragraph 3 of EB 62, Annex 5 and was accepted by the assessment team.

Assessment of Benchmark Calculation:

Since the project IRR has been considered as the financial indicator, thus the selection of Weighted Average Cost of Capital (WACC) as the investment benchmark was found to be in line with paragraph 12 of EB 62, Annex 5 and was accepted by the assessment team.

The investment benchmark, Weighted Average Cost of Capital (WACC) has been calculated as the weighted average cost of equity and cost of debt using the following equation, which was found to be appropriate.

$$WACC = [D/(D+E)] \times [Cost of\ Debt] \times [1 - T_c/100] + [E/(D+E)] \times [Cost of\ Equity]$$

Where,
D = Debt component of total investment

E = Equity component of total investment
T_c= Corporate Tax rate

For calculating the cost of equity, the **CAPM or Capital Asset Pricing Model** was used which is a well accepted methodology for estimating the expected rate of return on equity for a firm considering a new project investment. While considering an investment to a new project, CAPM can provide the required rate of return on equity that the project needs to yield, taking into account the volatility (risk) of the stock relative to the market (Beta). Thus found to be appropriate for the proposed project activity and hence accepted.

As per CAPM, the benchmark is the return of a risk-free security plus beta times the difference between the market return and the risk-free return.

The formula adopted of for computing CAPM as indicated below, found to be appropriate:

Ri= Rf + β (Rm-Rf)

Where:

Ri	=	Rate of return on equity;
Rf	=	Risk-free rate of return;
B	=	Beta or systematic risk for this type of equity investment coefficient reflecting the volatility (risk) of the stock relative to the market;
Rm	=	Expected market returns
Rm – Rf	=	Market risk premium;

The weighted average yield of Government Securities has been taken to represent the risk free return and compounded returns from the stock index have been used to represent the market return.

Risk free rate: The investment decision date/24/ of the proposed project activity was taken on 25/06/2010 by the PP. The prevailing average Government bond rate for the year 2008-09 was 7.69%. This was checked from "Weighted average yield for 2008-09 on Central Government Securities, RBI Annual Report 2008-09" which is publicly available in the link http://rbidocs.rbi.org.in/rdocs/AnnualReport/PDFs/58APTB_09.pdf). The assessment team confirmed that this was the latest available data to the PP at the time of decision making (i.e., on 25/06/2010) as the data for the year 2010 was not yet available. Thus the value for risk free rate considered by the PP was found to be correct.

Beta Value: The Beta value of the listed power companies engaged in similar business as the project activity i.e. power generation for a period of more than 10 years, at the time of investment decision are considered by the PP for the calculation of benchmark. PP has calculated the beta values using the covariance of selected power generating companies with respect to the BSE Sensex index for a period of 5 years.
Even though a time period of 5 years is relatively small as compared to the total expected operational lifetime of the proposed project activity, a smaller period for beta calculation for economies such as India is supported by CRISIL Report on "Cost of Capital for Central Sector Utilities" (link: http://cercind.gov.in/rep1304.pdf). The report states that for economies, whose capital structure and operating environment has been changing, the time period over which beta is calculated should be relatively small. As the operating environment of Indian power sector changed after the introduction of Electricity Act 2003, and is evolving, thus, 5 years value since June 2005 to May 2010 as used in the investment analysis, was deemed to be appropriate. The justification provided by the PP was found to be correct and accepted by assessment team. The average levered betas as calculated by the PP for the investment analysis is 1.56. The detailed calculation steps as shown in the benchmark analysis spreadsheet/5/ was checked by the assessment team and was found to be correct. Further, the financial expert was also consulted in this regard and the calculated value of average levered beta was found to be correct. The PP has adopted this average levered beta for further investment analysis of the project. This was found to be conservative and was found to be acceptable by the assessment team.

Market Rate of Return (Rm): In the proposed CDM project activity, the BSE Sensex/47/ has been used to represent the market return. BSE Sensex is a widely used market index in the host country and hence it was

found to be acceptable. With a view to eliminate the unsystematic risks associated with the projects, index of companies listed at BSE Sensex has been taken to represent the market return. The market return was arrived at based on the average annual return of BSE Sensex[/47/] from January 1991.

The following algorithm has been adopted to compute Market Rate of Return, which was found to be appropriate:

[{(BSE Sensex index at the time of start of project) / (BSE Sensex index at January 1991} ^ (Number of years since January 1991)] – 1

= 15.87%

Thus, Market Risk Premium has been appropriately calculated as (Rm – Rf)

= 15.87% - 7.69%
= 8.18%

Justification for suitability of time period: BSE Sensex has the market return data from 1979, leading to market returns of 30.25 years at the time of investment decision for the proposed project activity. However, January 1991 is the earliest possible date for which the historical data for many companies is available for BSE Sensex (http://www.bseindia.com/stockinfo/indices.aspx) thus providing the market returns for 20 years which is comparable with the operational lifetime of the project activity (20 years). Further, the use of data from 1991 is appropriate as the economic liberalization of the Indian economy started in 1991 (http://www.indiainbusiness.nic.in/economy/economic_reforms.htm). Hence, the selected time period is the appropriate and conservative.

The Cost of Equity (Expected Return on Equity): This works out to be 20.48% for the project activity which has been checked from the benchmark analysis spreadsheet[/5/] and found to be correct and acceptable.

Expected Rate of return on equity or cost of equity has been appropriately calculated as:
Ri = Rf + β (Rm-Rf)
= 20.48%

The cost of debt: the PP has considered the interest rate as 11.50% for the calculation of WACC. The rate of interest considered by the PP has been verified from DPR[/11/] of the project activity and found consistent. Appropriateness of the assumption was further cross checked from Reserve Bank of India Bulletin, Weekly Statistical Supplement dated 26 June, 2009 (http://www.rbi.org.in/scripts/PublicationsView.aspx?id=12765). It was observed that the prevailing Prime Lending Rate (PLR) at the time of the project investment decision making, was 11.00-12.00%. As the PP has considered the interest rate as 11.50%, which is comparable to the average PLR prevailing at that time of decision making, thus was accepted by the assessment team.

Corporate Tax Rate: The tax rate of 33.99% has been considered from the Income Tax Act for the year 2009-10 and the same has been verified[/46/] and was found to be acceptable.

The project financing for the Biomass based power generation project activity is proposed at 70% Debt and rest 30% Equity. This assumption was checked and conformed based on the DPR of the project activity (Page No 62), dated April 2008, prepared by Resurgent India Limited (RIL). This ratio is a standard practice for power projects in India. This ratio was further checked from CERC tariff regulation 2009 (http://cercind.gov.in/2009/February09/SOR-regulations-on-T&C-of-tariff-05022009.pdf) which also suggests a debt: equity ratio of 70:30 for such projects. The assumption of debt: equity ratio is also in line with EB 62, Annex 5, para 18. Thus this was accepted by the assessment team.

The investment benchmark computed by the PP for the proposed project activity has been validated as **11.46%**. The appropriateness of the calculation of benchmark value was duly checked through the financial expertise of the assessment team and was found to be correct.

As a part of the assessment process to confirm the correctness of the approach undertaken by the PP, the investment benchmark value of the project activity was also calculated using the default value provided in

Guidelines on the assessment of investment analysis, version 05 (EB 62, Annex 5). This value was then compared with the project IRR, calculated by the PP. As per the provision of paragraph 7 of Appendix of EB 62, Annex 5, the real time values of RoE was converted to RoE nominal.

The Return on Equity for India (in real terms), as per EB 62, Annex 5 is 11.75%. Inflation CAGR, as per Reserve Bank of India[/61/] published "Survey of Professional Forecasters: Results of the Eleventh Round (Q4:2009-10)", for the next ten year (WPI inflation, median value) is 5.0%. This value was appropriately considered as this report was available at the time of decision making by the PP. The conversion from real terms to nominal terms was done as shown below:

$ROE_{nominal}$ = ROE_{real} + Inflation
= 11.75% +5.0%
= 16.75%

Considering this RoE, the WACC was calculated by the assessment team.

$$WACC = \frac{E}{V} * Re + \frac{D}{V} * Rd * (1 - Tc)$$

= 30%*16.75% + 70%* 11.50% (1-33.99%)
= 10.34%

The WACC thus obtained considering all the remaining parameters (debt: equity ratio, cost of debt & interest rate) as same, was 10.34%. This value of investment benchmark was also higher than the IRR of the project activity, which is 6.78% only. Thus it was concluded by the assessment team that even by going the EB 62, Annex 5 suggested default values for RoE, the additionality of the project remains intact.

The suitability of benchmark (Weighted Average Cost of Capital (WACC)) applied in investment analysis for the proposed CDM project activity as per VVS[/7/], ver 06.0, Para 121 is illustrated below:

- **Para 121 (a)** - The project participant has chosen WACC as the investment benchmark for the comparison with the financial indicator, Project IRR. WACC for the project has been derived from the cost of equity and the cost of debt by taking the respective proportion of debt and equity in the financing pattern as weights, representing the opportunity cost of capital invested. The selection of this benchmark is in conformance with 'Guidelines on the Assessment of Investment Analysis', Version 05, paragraph 12, which states that "*…weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR*". Thus, it was found to be in accordance with Para 121(a) of VVS[/7/], version 06.0.
- **Para 121 (b)** - The risk premium applied for the calculation of the investment benchmark of the project activity reflects the risk profile associated with investments in the power sector. The beta values of listed private electricity generating companies in India have been considered for the calculation of WACC benchmark. This beta value accounts for systematic risk by quantifying the sensitivity of the stocks of the companies representing a particular project type/sector with the market portfolio and incorporating the risk of a specific sector in the calculation of the cost of equity. Thus, it was found to be in accordance with Para 121(b) of VVS[/7/], version 06.0.
- **Para 121 (c)** - The results of the investment analysis demonstrate that the returns from the project activity remain lower than the benchmark even under favourable circumstances. The project activity is the first project being implemented by the project participant and there are no previous instances of investment decisions undertaken by the project participant. Furthermore, the IRR of the project is even lesser than the interest rate/commercial lending rate of 11.50% applicable to the project activity. Hence, it can be reasonably assumed that no investment would have been made in the project if the rate of return would have been lower than this investment benchmark. Thus, it was found to be in accordance with Para 121(c) of VVS[/7/], version 06.0.

Assessment of the IRR calculation:

The assumptions used for the determination of the Project IRR are as follows:-

Particulars	PDD version 01 (ISHC)	PDD version 13 (Final)	Means of validation
Total Project Cost including	556.10 million INR	526.94 million INR	The project cost was including the IDC in the webhosted PDD[/1/], later on the PP has removed IDC part from the project cost. Project cost has been validated from the DPR[/11/] of the project activity.
Debt Portion	(70%)	(70%)	Debt and equity portion is same as was in the webhosted PDD[/1/]. This is validated from DPR page number 62. This is also in line with EB 62, Annex 5, para 18.
Equity Portion	(30%)	(30%)	
Subsidy	-	8.8 million INR	The project has availed MNRE capital subsidy of INR 8.79 Million. The PP has rounded up the value and has considered a conservative value of INR 8.8 Million. This was checked by the assessment team from the MNRE capital subsidy letter[/53/] issued by REC to the PP, letter dated 22/10/2012, ref number REC/CO/Ren./Haryana/Starwire.
Interest rate	11.50%	11.50%	The interest rate was considered from the DPR[/11/] of the project activity which was available at the time of decision making i.e. 25/06/2010. As this value is comparable with the prevailing prime lending rate (11.00%-12.00%) of Reserve Bank of India (http://www.rbi.org.in/scripts/WSSView.aspx?Id=14896) at the time of decision making, hence it was accepted by the assessment team.
Interest on Working Capital	12.50%	12.50%	Interest in working capital is same in the revised as well as the webhosted PDD. This was checked from the DPR of the project activity and was found to be correct. This was further checked from Haryana Electricity Regulatory Commission Order in the matter of determination of tariff for biomass based generation projects in Haryana, dated 06/11/2009[/49/], which has suggested a working capital of 12.75%. The PP has considered a lower interest rate on working capital, thus the assumption made by the PP was found to be correct and was accepted by the assessment team.
Price of biomass	1600 INR/tonne	1600 INR/tonne	Price of biomass is same in the revised as was in the webhosted PDD[/1/]. This value was taken from the Biomass Assessment Report[/26/] of the project activity dated January 2010, which was available to PP at the time of decision making on 25/06/2010. This value was found to be conservative in terms of IRR calculation when compared against actual biomass price (biomass quotation[/20/]) from biomass supplier of the regions.
Escalation on biomass price	7%	6%	The escalation on biomass price was checked from the DPR (Page no 63) of the project activity, prepared by Resurgent India Limited (RIL). The assessment team concluded that the assumption on biomass price escalation rate (taken from DPR[/11/] of the project activity) considered in the investment analysis sheet is appropriate and was available to the PP at the time of decision making.

Specific biomass consumption	-	1.36 Kg/kWh	The specific biomass consumption has been sourced from the DPR (page no 63) of the project activity, prepared by Resurgent India Limited (RIL). This was further cross checked from Haryana Electricity Regulatory Commission Order, dated 06/11/2009[/49/], and the value considered by the PP was found to be consistent with the commission order.
PLF	80%	80%	The PLF was considered from DPR[/11/] of the project activity, prepared by an independent third party consultant. This is in accordance with the requirement of EB 48, Annex 11, Para 3(b). This was accepted by the assessment team.
Power Tariff	INR 4.42	INR 4.46	Haryana Electricity Regulatory Commission Order[/49/], dated 06/11/2009. It states that 4 INR/kWh is the base price in FY 2007-08 and escalation shall take place at 2% per year). Further a notification[/50/] by Haryana Electricity Regulatory Commission stated that escalation on the base tariff shall be 3% from 2009-10 onwards. Accordingly escalation of 3% has been considered from 2009-10 onwards on a conservative note.
Wheeling Charges	-	2%	Wheeling charge was not considered in the web hosted PDD. However, in the revised PDD, the PP has included a wheeling charge of 2%. This was checked from Haryana Electricity Regulatory Commission order[/49/], dated 06/11/2009, which states "wheeling charges shall be levied @ 2% of the energy fed to the grid irrespective of the distance from the generating stations", thus this assumption made by PP was found to be correct and also in line with EB 62, Annex 5, paragraph 6. Further the correctness of including wheeling charge was also checked from paragraph 2.1.4 of the PPA[/52/] for the project activity. The paragraph 2.1.4 of the PPA, confirms that wheeling charges will be levied as per HERC guidelines/regulations for renewable energy projects. As the Haryana Electricity Regulatory Commission order, dated 06/11/2009[/49/] was valid at the time of decision making[/24/] date 25/06/2010, hence the assumption of 2% wheeling charge of the total electricity fed to the grid was found to be correct by the assessment team.
O & M cost per annum	7% of the total project cost of 526.94 million INR	7% of the total project cost of 526.94 million INR	The O&M cost of the project activity was considered from Haryana Electricity Regulatory Commission Order dated 06/11/2009[/49/], this was valid at the time of decision making and was accepted by the assessment team.
Benchmark	13.71%	11.46%.	There was a minor decrease in the benchmark of the project activity. At the time of PDD webhosting the index considered for the calculation of benchmark was BSE 500. BSE 500 was incepted during the year 1999. Thus only 12 years data from its inception to the project decision making year 2010 was available to the PP. As this duration is less than the project life time and also less than the assessment period considered,

			hence the PP voluntarily changed the index from BSE 500 to, BSE Sensex. BSE Sensex has the market return data from 1979, leading to market returns of 30.25 years at the time of investment decision for the proposed project activity. January 1991 is the earliest possible date for which the historical data for many companies is available for BSE Sensex (http://www.bseindia.com/stockinfo/indices.aspx) thus providing the market returns for 20 years which is comparable with the operational lifetime of the project activity (20 years) was found to be correct. This assumption lowered the benchmark from 13.71% as initially calculated and mentioned in the webhosted PDD. Since the revised benchmark value is correct and also conservative (being lower than the earlier calculated value) in terms of project investment analysis thus it was accepted.
Financial Indicator (Project IRR)	Negative	6.78%	The IRR value in the final PDD is 6.78%. the change in IRR value from the PDD, Version 01 is due to the reduced project cost (after excluding the IDC part), inclusion of MNRE subsidy, change in power tariff assumption, inclusion of wheeling charges and change of escalation rate in Biomass price. All the changes have been validated by the assessment team and was found to be correct. Further assessment of input parameters have been done below.

The suitability of input assumptions used for IRR calculation of the proposed CDM project activity as per VVS, ver 06.0[/7/], Para 122 is illustrated below:

- **Para 122** - The Detailed Project Report (DPR[/11/]) was the basis of the decision to proceed with the investment in the proposed CDM project activity. Most of the assumptions used in the PDD[/1/] and the financial analysis spreadsheet[/4/] are fully consistent with the DPR[/11/]. However, some of the sources for the values considered in the DPR[/11/] were not explicitly mentioned which were further crosschecked from the additional public domain information such as web articles/documents and found to be comparable and satisfactory. The DPR[/11/] for the project has been prepared by Resurgent India Limited, one of the country's most reputed technical consulting firm with vast experience in handling of biomass based power projects in the country. Resurgent India Limited has studied the economic viability of the project, as a part of the Detailed Project Report[/11/] under consideration based on the budgetary offers received from manufacturers and on the basis of in-house cost data compiled from other similar jobs executed in the recent past. The assessment team has confirmed that the validity of all assumptions used in investment analysis was **available and valid** at the time of project investment decision time which is required as Para 6 EB 62 Annex 5.
  - Although the time period between the finalization of the DPR dated April 2008 and the investment decision on 25/06/2010 was more than two years, however the values as adopted from the DPR, has been found duly cross verifiable based on other relevant publicly available and reliable sources valid at the time of project investment decision. All the assumptions and values were found to be relevant, correct and conservative from the projects investment analysis point of view.
  - The values used in the PDD and associated annexes are fully consistent with the DPR and comparable with the publicly available information and actual objective evidences.

- The input values adopted from the DPR are valid and applicable at the time of investment decision. This has been confirmed on the basis of local and sectoral expertise and by cross-checking with applicable public domain information as discussed below.

The Investment analysis has been verified for the accuracy as per VVS[/7/], ver. 06.0 Para 122 (a), (b) and (c). Thus, all the above assumptions are appropriate and are suitable as per accounting practices. The parameters have been cross checked from the publically available sources. Thus, as per VVS[/7/], version 06.0, Para 120 (a) and (c), the input values are validated and confirmed that assumptions are appropriate and financial calculations are correct.

Assessment of individual input/ assumption used for project IRR calculation for the proposed project activity:

- **No. of Days of operation in year:** - The number of operational days of has been considered as 365 days/year. This has been verified from the DPR[/11/] of the project activity. This assumption was further found to be conservative by the assessment team, as it has been assumed by the project activity that there is no shut down time. This has lead to higher estimated generation and subsequently higher IRR for the project activity.
- **Installed Plant Capacity:** - The project was initially designed for 10 MW, which was checked from the DPR[/11/] of the project activity, dated April 2008, prepared by Resurgent India Limited (RIL). However Haryana Renewable Energy Development Authority (HAREDA) vide letter[/51/] dated 14/02/2012 has granted an approval to the PP for 9.9 MW capacity based on the assessment of biomass available in the area for the project activity. Subsequently the capacity of the project was revised to 9.9 MW as per the approval granted from HAREDA.

  The PP has carried out the investment analysis for the project activity for both the installed capacities, i.e., 10 MW as initially planned and 9.9 MW as approved by HAREDA. This allowed a comparison of both the scenarios. While considering the installed capacity as 10 MW the IRR of the project activity turned out to be 6.78% and while considering the installed capacity the IRR turned out to be 5.41%. It is noteworthy that in both the cases the IRR of the project activity is below the benchmark value of 11.46%. However in the final version of the PDD, the PP has included the installed capacity as **10 MW**, as this was the capacity which was envisaged at the time of decision making. The investment analysis details of the project activity, considering **10 MW** installed capacity has been included in the PDD. This was checked and was confirmed by the assessment team.
- **Power feed to Auxiliary: -** The power feed to auxiliary of for this project activity has been assumed as 10% of the total power generated, this has been verified from the DPR[/11/]. CERC[/17/] notification (draft), dated 15th March, 2009 (http://www.cercind.gov.in/2009/May09/Final-Draft_CERC-Renewable_Regulations2009_150509.pdf, page 25) has been also referred and found to be mentioning the auxiliary consumption for biomass based power as 10%. Moreover, from sectoral expert's point of view the auxiliary consumption of 10% is reasonable for a project of total installed capacity 10 MW. This has been correctly used to compute investment analysis of the project activity.
- **Available Power for Export: -** Available power to export has been calculated as the difference of total installed capacity of the project activity and the power fed to auxiliary. The available power for export from this project activity has been assumed for the IRR calculation 63.072 GWh, considering project installed capacity as **10 MW**, as this was the capacity which was envisaged at the time of decision making. This has been verified from the DPR[/11/] of the project activity and was found to be consistent.

  It is noteworthy, that for emission reduction calculation the installed capacity has been considered as **9.9 MW** and available power for export as 62,441 MWh/year, as this is the actual implemented capacity of the project activity. The capacity of the project activity was checked by the assessment team as elaborated under the point "Installed Plant Capacity" above.
- **Plant Load Factor:** The plant load factor of the project activity has been considered as 80%. This is found to be consistent with the DPR[/11/] of the project activity submitted by the PP. The DPR[/11/] has been prepared by a third party company (an engineering company) named M/s. Resurgent India Ltd., (http://www.resurgentindia.com/index.aspx) contracted by PP. Thus, the PLF consideration is found to be in accordance with EB 48, Annex 11, Para 3(b).

The suitability and conservativeness of the PLF value was also cross checked from the CERC/16/ (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 (http://cercind.gov.in/Regulations/Final_SOR_RE_Tariff_Regulations_to_upload_7_oct_09.pdf). The regulation states PLF of biomass based power generation projects as 60% during stabilization, 70% during the first year after Stabilisation and 80% from 2nd year onwards.

Furthermore the appropriateness of the assumption adopted on PLF for the proposed project activity has been compared with the other CDM registered biomass based power generation project activity of comparable technical specifications from state of Haryana, India and found to be conservative.

UNFCCC Ref No	Installed capacity (MW)	PLF
UN PA 3441 (Project Start date: 23/06/2008)	7.5	80% (1st year) 90% (2nd year) 100% (3rd year onwards)

- **Total cost of project including financing charges:** - The total project cost INR 526.936 Million was validated from the DPR/11/. It is noteworthy, that in the proposed CDM project activity, the cost per MW for the project activity is Rs. 56.17 Million.

  Moreover, the breakup of total project cost (INR 526.936 Million) which further include the breakup cost for various component of the project activity as indicated below has been validated from the DPR/11/, which is the basis for the investment decision.

Particulars	Cost in INR million
Land	25
Site Development	3.5
Civil Works	70
Mechanical works	300
Electrical works	60
Preliminary expenditure and computer, furniture, fixture and vehicles	14
Technical Fee	12.5
Contingencies	10
Margin for Working Capital	31.936
Total	**526.936**

The detail of project cost break up was checked from the DPR of the project activity, dated April 2008. This was available to the PP at the time of decision making. The values mentioned in the PDD were found to be consistent with the DPR of the project activity.

Furthermore an analysis with respect to other similar registered small scale projects from the state of Haryana, India to cross check the suitability of the assumption used. However no such similar CDM registered project activity has been observed from the state of Haryana, India. Till date of this report, there are six biomass based small scale CDM registered project activity has been identified capacity, technical specification of the boiler and turbine involved for the proposed grid connected power generation project activity was not found comparable due to the following reasons:

1. UN PA 1492: Thermal energy in phase I & cogeneration in phase II; Start date: 20/12/2005
2. UN PA 3188: Thermal energy generation; Start date: 24/01/2008
3. UN PA 3441: Power generation; Start date: 23/06/2008
4. UN PA 7921: Cogeneration; Start date: 21/03/2011

5. UN PA 8666: Cogeneration; Start date: 27/05/2009
6. UN PA 9484: Cogeneration; Start date: 12/02/2010

Only UN PA 3441 has the comparability in terms of technical specification and project concept, however has gap in terms of implementation timeline, since the start date of UN PA 3441 is almost two year prior to the investment decision date of the proposed project activity.

Thus, it won't be appropriate to compare the project costs of the project activity with other plants with different technical specifications and of different timeline located in the region, where the project activity is located.

The major project cost components were further cross checked from the actual contract signed by the PP with the service providers. The assessment of the major project cost was carried out as follows:

Source	Component	Date of contract	Price in INR million
Contract for Supply/10/	Designing, Engineering, manufacturing, procuring, inspection, testing and supplying the plant and machinery for the plant.	16/03/2013	INR 314.8 Million
Contract for civil & structure works/35/	Excavation, Civil & structural works	17/03/2013	INR 51 Million
Contract for erection & commissioning/48/	Complete erection, commissioning, trials, reliability test of machinery & equipments	18/03/2013	INR 23 Million

The actual total project cost was also cross checked from CA certificate/55/ on total project cost dated 26/06/2013. As per the CA certificate, the actual total project cost is INR 596.38 Million. Thus the assessment team concludes that the project cost as assumed by the PP at the time of decision making is conservative an also in line with paragraph 6 of EB 62, Annex 05.

A sensitivity analysis of the project cost was also carried out to reflect the IRR of the project activity for a variation of ±10%.The sensitivity analysis has been validated by the assessment team and was found that a variation of ±10% is most unlikely in the project activity, as PP has already incurred the project cost, which is higher than the assumed value in the investment analysis sheet, as confirmed from the CA certificate/55/ on project cost, dated 26/06/2013. Hence this was accepted by the assessment team.

The financial spreadsheet/4/ includes the breakup details of total project cost and same has been checked against the DPR/11/ and found to be consistent.

- **O & M cost & escalation in O & M cost:** The assumption related to O&M expense per annum considered in the investment analysis is 7% of the total project cost 526.94 INR million. This was checked by the assessment team from the DPR/11/ of the project activity (page no 63) and was found to be consistent.

  Further the same has been cross checked from page 11 of Haryana Electricity Regulatory Commission Order dated 06/11/2009/49/ and was found consistent. A yearly escalation rate of 7% yearly for O&M cost has been considered by the PP, this was also validated from DPR/11/ (page no 63) and was found to be consistent. As the values mentioned in the DPR/11/ matches with that of the publicly available Haryana Electricity Regulatory Commission Order/49/, assessment team has accepted the same.

Since no such comparable similar CDM registered project activity has been identified from the project region (as explained above), thus suitability comparison with other CDM registered projects could not be performed. As the value considered from DPR matches with that of the publicly available HERC notification, dated 06/11/2009[/49/] which was the latest available information at the time of decision making the same was accepted by the assessment team thus found to be consistent as per the requirement of paragraph 6 of EB 62, Annex 05.

- **Biomass Price:** The cost of biomass (INR 1600/ tonne) in the investment analysis has been validated from the DPR[/11/] of the proposed project activity, carried out by an independent third party consultant. The DPR has also been approved by HREDA.

  The appropriateness of the assumption on biomass price has been further cross checked with other objective evidences; HERC order dated 06/11/2009[/49/] has specified the cost of biomass as INR 2039/MT. The price of biomass was also confirmed from the MNRE capital subsidy letter[/53/] issued by REC to the PP, letter dated 22/10/2012, ref number: REC/CO/Ren./Haryana/Starwire. As stated in the letter[/53/] cost of biomass at site is INR 2300/MT. Further the actual biomass price was also checked from biomass payment voucher[/54/], as per which the actual biomass price is INR 2400/MT.

  Even the assumption on biomass price for the proposed project activity was found to be conservative if compared with other (although non-comparable in terms of technical specification or size but comparable in terms of timeline) CDM registered biomass based project activities from state of Haryana, India.

UNFCCC Ref No	Technical Specification	Installed capacity	Biomass price
UN PA 8666 (Investment decision date: 18/04/2009)	Cogeneration	1.95 MW	INR 3092/ MT
UN PA 9484 (Investment decision date: 07/01/2010)	Cogeneration	3 MW	INR 2952/ MT

  Thus the assessment team is of the opinion that the biomass price considered by the PP for the investment analysis is conservative and was available to the PP at the time of decision making. Thus this was accepted by the assessment team.

- **Escalation in biomass price: -** The escalation on biomass price was checked from the DPR (Page no 63) of the project activity, prepared by Resurgent India Limited (RIL). The escalation rate considered in the DPR[/11/] of the project activity is 6%. As this value has been taken from the DPR, which was available to the PP at the time of decision making and it is meeting the requirement of paragraph 6 of EB 62, Annex 5, this was accepted by the assessment team. The escalation in biomass price is also supported by the increasing trend of biomass price:
  - The biomass fuel as considered from the DPR dated April 2008 is INR 1600 /MT.
  - As per the HERC order dated 06/11/2009[/49/] is INR 2039/ MT.
  - As per the MNRE capital subsidy letter[/53/], dated 22/10/2012 is INR 2300/ MT and
  - As per actual biomass payment voucher[/54/], dated 19/11/2012 it is INR 2400/MT.

  Thus a trend analysis shows that the escalation in biomass price has been more than 6.4% since the time of investment decision. Thus the assumption made by the PP was found to be conservative.

- **Power tariff rate:** The tariff rate of INR 4.46/kWh with escalation of 3% has been validated from the HERC order and found to be consistent. HERC Order dated 06/11/2009 (http://www.herc.gov.in/old_website/orders/pdf/2009/20091106.pdf) states that 4 INR/kWh is the base price in FY 2007-08 and escalation shall take place at 2% per year). Further a notification (http://www.herc.gov.in/old_website/orders/pdf/2011/20110527a.pdf) stated that escalation on the

base tariff shall be 3% from 2009-10 onwards. The same has been considered from 2009-2010 as per the notification. This has resulted in a tariff of INR 4.46/ kWh.

Similar project located in other states of India was not considered for cross checking the tariff rate, as the tariff rate for renewable energy projects such as biomass is published by State Electricity Regulatory Commission[/62/] (SERC) of each state from time to time. Thus there is large variation in tariff rates from state to state, as tariff for such projects depends on factors such as availability of biomass, price and demand of such resources which are basically local in nature. Thus comparing the tariff of two states (defined by two different SERCs) won't provide a conclusive result. Thus the assumption made by the PP which is well supported by the order[/49/] issued by HERC, it was found to be correct and applicable to the project activity for the entire project life time, further, this was also found to be in line with the requirement of paragraph 6 of EB 62, Annex 05.

- **Escalation on power tariff rate**: The escalation in power tariff rate has been sourced from HERC Order[/49/] dated 06/11/2009, which has mentioned the escalation in tariff rate as 2% with a tariff rate of 4.00 INR. However a further notification[/50/] from HERC has mentioned escalation of 3% on the base tariff (Rs. 4.00/kWh for the year 2007-08) applicable from 2009-10. Thus the PP has applied an escalation of 2% for the year 2008-09 and a 3% escalation has been considered from 2009-10 onwards. This was found to be a conservative approach for IRR calculation, as a higher escalation in tariff rate will provide a better tariff and a better IRR value. Thus this was accepted by the assessment team.

- **Depreciation Rate Used:** To calculate book profit and loss, Straight Line Method has been used. For the plant and machineries a book depreciation rate of 7.84% has been considered, this was checked from the HERC Order[/49/], dated 06/11/2009 and was found to be correct. Depreciation rate for the building as considered by the PP was checked from The Companies Act, 1956, SCHEDULE XIV (http://asa-india.com/Depreciation%20Rates%20Companies%20Act.pdf). The assumption made by the PP was found to be correct and was accepted by the assessment team.

  The income tax depreciation rate has been considered as 10% for buildings of the total depreciable value and 80% for that of plant and machinery of the project activity. This has been verified from Section 32 rule 5, New appendix I of Indian Income Tax Act[/21/]- http://law.incometaxindia.gov.in/DIT/File_opener.aspx?page=ITRU&schT=rul&csId=4a23cee1-1818-45d6-ab19-f155e08ed789&rNo=&sch=new%20appendix&title=Taxmann%20-%20Direct%20Tax%20Laws

  Thus the depreciation rates considered by the PP were found to be correct and as per the prevailing norms and regulations of the host country for the specific technology used in the project activity and was accepted by assessment team.

- **Interest rate: the** PP has considered the interest rate as 11.50% for the calculation of IRR of the project activity. The rate of interest considered by the PP has been verified from DPR[/11/] of the project activity. This was further cross checked from Reserve Bank of India Bulletin, Weekly Statistical Supplement dated 11/06/2010 (http://www.rbi.org.in/scripts/WSSView.aspx?Id=14896). It was observed that the prevailing Prime Lending Rate (PLR) at the time of decision making, was 11.00-12.00%. As the PP has considered the interest rate as 11.50%, which is comparable to the average PLR prevailing at that time of decision making, it was accepted by the assessment team.

- **Tax rate:** The MAT Rate of 16.995% and Income Tax rate/corporate tax rate of 33.99% has been considered by the PP for IRR calculation of the project activity. The tax rate is found consistent with the investment decision time as well as at the time of start date of project activity and the Tax rate has been further cross checked form the Indian Income Tax Act website[/40/] and found consistent.

  The effective corporate tax rate of 33.99% have been validated from, http://www.simpletaxindia.net/2011/11/income-tax-rate-chart-slab-fy-11-12-ay.html and found to be satisfactory. This is Calculated as, Effective Corporate Tax Rate = Corporate Tax rate*(1+ Surcharge)*(1+ Education Cess). The corporate tax rate of 30.00% and 10% surcharge and 3 % education cess surcharge.

The effective MAT rate of 16.995% have been validated from, http://www.itaxindia.org/2011/10/income-tax-rates-companies-ay-2012-13.html and found to be satisfactory. This is Calculated as, Effective Corporate Tax Rate = Corporate Tax rate*(1+ Surcharge)*(1+ Education Cess). The corporate tax rate of 15.00% and 10% surcharge and 3 % education cess surcharge. Thus the applicable statutory Tax rates considered by the PP were found to be correct and as per the prevailing norms and regulations of the host country for the specific technology used in the project activity and was accepted by the assessment team.

- **Working capital estimation:** Working capital has been calculated based on the following elements-

  a) Fuel costs for four months equivalent to normative PLF;
  b) Receivables equivalent to 2 months of fixed and variable charges for sale of electricity calculated on the target PLF;

  CERC/17/ notification (draft), dated 15th March, 2009 (http://www.cercind.gov.in/2009/May09/Final-Draft_CERC-Renewable_Regulations2009_150509.pdf) has been checked and it was found that the working capital estimation has been done as per the guidelines mentioned in the notification/17/, which was found to be correct and the same has been accepted by the assessment team. The PP has considered the interest on working capital as 12.50%, this was checked from the DPR (page no 63) of the project activity, this was checked by the assessment team. The PP has consistently used the working capital value in the PDD and in the IRR sheet. The interest on working capital was further cross checked from HERC Order/49/, dated 06/11/2009, which has mentioned the working capital interest rate as 12.75%. The rate considered by the PP is comparable to the HERC value, further it was observed that even considering the value mentioned by HERC there is only a minute change in the IRR of the project activity. However, as the PP has considered the value from the DPR of the project activity, which was the latest available information to the PP at the time of decision making, the working capital interest rate has been accepted by the assessment team.

- **Assessment period:** In the proposed CDM project activity, the PP has considered the financial assessment period of 20 years. This was also cross checked with CERC/17/ draft RE tariff regulation, 2009, (http://www.cercind.gov.in/2009/May09/Final-Draft_CERC-Renewable_Regulations2009_150509.pdf) which states that the useful life of biomass power project is 20 years. This is as per the "Guidelines on the Assessment of Investment Analysis" Version 5 (EB 62, Annex 5) paragraph 3 which suggests a minimum of 10 years and a maximum of 20 years assessment period should be considered. The assumption made by the PP was found to be correct against the "Guidelines on the Assessment of Investment Analysis" Version 5 (EB 62, Annex 5).

- **Salvage Value:** The 10% salvage value of the total project cost (excluding the land cost) assumed in the IRR sheet has been validated from page 14 of CERC notification (draft) dated 15 May 2009/17/ (http://www.cercind.gov.in/2009/May09/Final-Draft_CERC-Renewable_Regulations2009_150509.pdf) and found consistently adopted. It was found that the assumption has been appropriately adopted from the CERC notification (draft) dated 15 May 2009 which was valid and latest available document to the PP during investment decision for the project activity. Land cost has been added back at to the salvage value of the project activity. The IRR sheet was checked by the assessment team and was found that this has been reflected in the IRR calculation of the project activity. This was found to be in line with the requirement of paragraph 4 of EB 62, Annex 5. The break up for project cost has been verified from the DPR/11/ of the project activity.

- **Debt Equity Ratio:** The debt equity ratio considered in the project activity is 70:30. This assumption was checked from the DPR of the project activity (Page No 62), dated April 2008, prepared by Resurgent India Limited (RIL). This is ratio is a standard practice for power projects in India. This ratio was further checked from CERC tariff regulation 2009 (http://cercind.gov.in/2009/February09/SOR-regulations-on-T&C-of-tariff-05022009.pdf) which also suggests a debt: equity ratio of 70:30 for such projects. The assumption of debt: equity ratio is also in line with EB 62, Annex 5, para 18. Thus this was accepted by the assessment team.

The project IRR calculations based on above assumptions gives the IRR value of **6.78%** which is lower than the calculated benchmark and which signifies that the proposed CDM project activity is not financially attractive and, thus, it is additional. The investment analysis spreadsheet[/4/], including all the input parameters, its suitability & applicability has been duly verified by the financial expert and was found to be satisfactory.

Sensitivity Analysis:

In the proposed CDM project activity, Plant load factor, Project cost, Price of biomass, the tariff, are considered for sensitivity analyses, which are the important factors which impact the returns from the project. Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues have been subjected to reasonable variation. The other components are not required to undergo sensitivity analysis as they constitute less than 20% of total project cost and the same has been duly verified by the internal independent financial expert. Additionally, these are sourced from DPR[/11/] as well as from other publically available sources and found consistent and reasonable.

(a) Project cost:

The sensitivity analysis has been carried out for a 10% variation in the project cost. For a 10% decrease in the project cost the IRR of the project activity goes up to 12.03%. However a 10% reduction in project cost is not possible as the project has already incurred the cost for implementation of the project activity. The actual project cost was checked and confirmed from the CA certificate[/55/] on project cost, dated 26/06/2013. As per the CA certificate[/55/] the actual project cost is much higher than the project cost as considered in the investment analysis of the project activity.

Variation	Project IRR
Base Case	**6.78%**
10% increase in Project cost	Negative
10% decrease in Project cost	12.03%

(b) Price of Biomass:

The sensitivity analysis has been carried out for a 10% variation in the price of Biomass. It was found that with a 10% decrease in the price of Biomass the IRR of the project activity crosses the benchmark value. IRR value of the project activity reaches 16.22% when the price of biomass is reduced by 10%. But for a 10% increase in price of biomass the IRR of the project activity becomes negative.

Even though a decrease in biomass price may lead to rise in IRR of the project activity, however a decrease in 10% of biomass price is most unlikely. The biomass cost has been changing with the rising trend and there is a possibility that it may increase in the future leading to additional financial burden causing a decrease in the IRR. The CERC draft RE tariff regulations, 2009 also allows an escalation of 5% for biomass projects, indicating a rising in biomass price in future. Hence it has been accepted that there is no possibility of a decrease in biomass price and subsequently the project IRR crossing the benchmark of the project activity.

The PP has considered the price of biomass as INR 1600/ MT as mentioned in the Detailed Project Report of the project activity, dated April 2008, prepared by Resurgent India Limited (RIL). The assessment checked the biomass price from Haryana Electricity Regulatory Commission Order dated 06/11/2009[/49/]. The price of biomass as per the order is INR 2039 /MT. The price of biomass was also confirmed from the MNRE capital subsidy letter issued by REC to the PP, letter dated 22/10/2012, ref number REC/CO/Ren./Haryana/Starwire. As stated in the letter cost of biomass at site is INR 2300/MT. The price of biomass was further confirmed from actual biomass purchase payment voucher as provided by the PP, dated 19/11/2012. As per the actual payment voucher the price of biomass is INR 2400/MT. The assessment team observed that the price of biomass in India is continuously increasing over the past years, thus the assessment team is of the opinion that there are remote chances of a decrease in biomass prices.

Variation	Project IRR
Base Case	**6.78%**
10% increase in Biomass price	(Negative IRR)
10% decrease in Biomass price	16.22%

(c) Tariff:

The sensitivity analysis has been carried out for a 10% variation in the Tariff. With an increase in the tariff rate by 10%, the IRR for the project activity crosses the benchmark value. But this scenario is most unlikely as the tariff for the project activity has been taken from the HERC Order[/49/]. As per HERC Order[/49/] the escalation in tariff rate is 2% as per and the subsequent HERC notification[/50/] the escalation of tariff is 3%. The escalation in tariff as suggested by HERC order[/49/] and HERC notification[/50/] has been taken into consideration by the PP while preparing the investment analysis. Thus the PP has applied an escalation of 2% for the year 2008-09 and a 3% escalation has been considered from 2009-10 onwards. As per the investment analysis (Financial analysis spreadsheet[/4/]), which was checked by the assessment team, if tariff increases by 3%, the IRR of the project activity never crosses the benchmark value of 11.46%. Moreover, as the tariff rate is governed by numerous factors including the biomass price, therefore, even if at any stage the tariff rate increases, there would be a counter effect of the increase in biomass price as well and thus; it is not realistic that IRR would cross the benchmark.

Variation	Project IRR
Base Case	**6.78%**
10% increase in Tariff	16.51%
10% decrease in Tariff	(Negative IRR)

The financial spreadsheet[/4/] has been checked and verified by the assessment team including the financial expert as well as by the Sectoral expert and was found to be satisfactory.

(d) Electricity generation:

The sensitivity analysis has been carried out for a ±10% variation in electricity generation of the project activity. A 10% increase in project electricity generation results in IRR value crossing the estimated benchmark value. The 10% increase results in 12.72% of IRR, crossing the benchmark value of 11.46%. But this is quite unlikely considering the fact that, PP has considered 24*365 days of continuous operation for the project activity, and a PLF of 80% has been considered. In actual scenario there will be some forced outages leading to a lower number of operating days per year. Further, the PLF estimated is also on a higher side, which was checked from CERC[/16/] (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 (http://cercind.gov.in/Regulations/Final_SOR_RE_Tariff_Regulations_to_upload_7_oct_09.pdf). Further the PLF was also checked from (http://herc.gov.in/orders/pdf/2011/20110527a.pdf). Both the documents have mentioned a highest PLF of 80% for biomass based power projects. This was checked by the assessment team and the assessment team is of the opinion that an increase in power generation by further 10% (i.e. 90% PLF) is most unlikely to achieve for a biomass based power generation plant.

Variation	Project IRR
Base Case	**6.78%**
10% increase in electricity generation	12.72%
10% decrease in electricity generation	-(Negative IRR)

(e) O&M cost:

A sensitivity analysis has been carried out for 10% variation in O&M cost of the project activity. A 10% decrease in O&M cost results in 10.85% of IRR, which is below the benchmark value of 11.46%. Thus it is seen that even in scenarios where the O&M cost of the project activity goes down by a margin of 10% the IRR of the project activity remains below the benchmark value of 11.46%. The PP has considered O&M cost as 7% as per the DPR[11] of the project activity.

Variation	Project IRR
Base Case	**6.78%**
10% increase in electricity generation	-(Negative IRR)
10% decrease in electricity generation	10.85%

(f) Total cost of fuel:

A sensitivity analysis has been carried out for 10% variation in total fuel cost of the project activity. A 10% decrease in total fuel cost results in 20.49% of IRR, thus crossing the benchmark value. However this is a most unlikely scenario considering the fact that the fuel cost is continuously following a rising trend that it may increase in the future leading to additional financial burden causing a decrease in the IRR. The CERC draft RE tariff regulations, 2009 (http://www.cercind.gov.in/2009/May09/Final-Draft_CERC-Renewable_Regulations2009_150509.pdf) also allows an escalation of 5% for biomass projects, indicating a rising in biomass price in future. Hence it has been accepted that there is no possibility of a decrease in biomass price and subsequently the project IRR crossing the benchmark of the project activity.

Variation	Project IRR
Base Case	**6.78%**
10% increase cost of fuel	-(Negative IRR)
10% decrease cost of fuel	20.49%

Thus it is confirmed from the above analysis that in cases where the project IRR crosses the benchmark value is most unlikely to occur, and the assumptions made by the PP is already on the conservative side.

Discussion of CARs/CLs:

CAR 06 was raised asking the PP to provide the detailed investment analysis sheets as per para 8 of Annex 58 of EB 51 to demonstrate the investment barrier as mentioned in section B.5 of the PDD.

CAR 06 was also raised to provide the copies of all the supporting documents for the input values considered for the investment analysis as per para 120 of VVS version 06.0 and mention the references of all the input values in the investment analysis sheet.

In response to CAR 06 the PP provided detailed investment analysis sheet as per para 8 of annex 58 of EB51. The sheet was also complying the requirement of EB 62, Annex 5. The PP also provided supporting documents i.e. DLD, tariff order, purchase orders, quotation, etc, which have been checked and found appropriate and prior to the decision making date.

The CAR 06 also includes the following point raised by the assessment team-

1. The IRR calculated in the DPR dated April 2008 for the project activity is 5.98%; however the calculated IRR in the investment analysis sheet is coming out to be negative. The PP was requested to provide the reason for this difference in the IRR with proper evidences.
2. The PP was requested to justify the choice of index and time period considered for calculation of cost of equity.

3. The PP was requested to provide documentary evidence in line with considered biomass price and its escalation
4. The PP was requested to clarify how the tax has been calculated by correctly applying sec 80IA and carry forward of losses u/s 72
5. The PP was requested to justify why tax benefit arising from allowed accelerated depreciation under income tax act has not been considered while calculating IRR.
6. The PP was requested to include results of threshold limit (Scenario in which the calculated IRR crosses benchmark also explain the likelihood of that scenario)
7. The PP was requested to add the relevant parameter in sensitivity analysis as per 120 (e) of VVS Version 06.0.

In response to the above points raised the PP clarified that:

1. The IRR calculated in the DPR dated April 2008 has not considered IT depreciation into consideration. However, the same has been considered in the IRR calculation sheet submitted to DOE as it is a general practise while calculating IRR. Therefore, there is difference in both the IRR. This was found to be acceptable and was closed by the assessment team.
2. The BSE 500 has been widely adapted by Indian investors in difference sector as this contains approximately 94% market capitalization. The PP has selected beta for 10 years as most of the companies of similar profile to the project activity registered and their information was available. The response from PP was found correct and justified thus accepted.
3. The PP has taken biomass price and escalation of biomass price from the DPR. Since this is third party report and the same was put forward for approval from DNA, thus accepted.
4. The PP is not going to claim benefit in tax under 80IA, thus IRR calculation is independent of 80 IS assumption.
5. The tax benefit has been considered in accordance with the depreciation rates given for agricultural and municipal waste conversion devices producing energy. The approach followed by the PP is appropriated and correct, thus accepted.
6. The PP has considered the sensitivity analysis to figure out the threshold limit. The results have been provided into PDD version 5.
7. The PP has considered the parameters into sensitivity analysis as per 111 (b) of VVS Version 06.0. The PP also calculates the threshold limit for each parameter. Hence CAR 06 was closed.

Further the following points were raised as a part of CAR 06

1. It is unclear how 365 days operation is correct. The PP is requested to justify whether the power plants will never have scheduled maintenance shutdown.
2. Further,
    i. The PP was requested to provide source for subsidy considered in the investment analysis.
    ii. Value of base IRR and results obtained after applying variations under sensitivity analysis as mentioned in the PDD is not consistent with IRR sheet. The PP was requested to clarify.
    iii. The PP was requested to clarify about the increasing trend of biomass price as mentioned in section B.5 of the PDD. The PP was requested to provide publicly available and verifiable documentary evidences to support this.
    iv. The PP was requested to clarify the statement, “Also, any increase in tariff order shall be accompanied with increase in the price of the biomass which ultimately will compensate for the increase in IRR”, with documentary evidences.
    v. The escalation in biomass price has been sourced from DPR as 6%. However, the escalation as mentioned in the HERC Order dated 06/11/2009 is 5%. The PP was requested to justify the conservativeness of the assumption made.
    vi. The PP was also requested to provide all purchase order of equipments placed, and CA certificate for the total project cost. Further, the PP was also requested to provide a legible copy of the signed PPA.

3. For the sensitivity analysis, the PP is requested to correctly justify how,
    i. 10% decrease in project cost
    ii. 10% decrease in biomass price
    iii. 10% increase in electricity tariff
    iv. 10% increase in electricity generation
    v. 10% decrease in total fuel cost is not a likely scenario in this project activity. As in all these 5 scenarios, the IRR of the project activity crosses the benchmark value. The PP was requested to justify all these scenario.

In response to the above points the PP, stated that-

1. The PP has considered 80% PLF for the project activity which reflects the outage due to the scheduled maintenance. Moreover, considering higher number of operational days is a conservative approach while calculating IRR as it increases the IRR. The PLF and no of operating days was checked from DPR/11/ (page no 63) of the project activity. This was found to be correct and was accepted by the assessment team.
2. (i) The letter/53/ from REC, dated 22/10/2012 was checked by the assessment team and was found to be acceptable.
   (ii) The PP has updated the PDD. The base IRR value and the results obtained after applying sensitivity analysis were updated in the PDD to maintain conformity with the IRR sheet. This was checked and was accepted by the assessment team.
   (iii) The assessment checked the biomass price from HARYANA ELECTRICITY REGULATORY COMMISSION order dated 06/11/2009. The price of biomass as per the order is INR 2039 /MT. This price was compared against the price considered in the investment analysis sheet by the PP. The price considered in the investment analysis is INR 1600/MT, as per the Detailed Project Report of the project activity, dated April 2008, prepared by Resurgent India Limited (RIL). The assessment team observed that the price of biomass is continuously increasing over the years, as evident from the HERC order. The price of biomass was further confirmed from actual biomass purchase payment voucher as provided by the PP. As per the actual payment voucher the price of biomass is INR 2400/MT. The price of biomass was also confirmed from the MNRE capital subsidy letter issued by REC to the PP, letter dated 22/10/2012, ref number REC/CO/Ren./Haryana/Starwire. As stated in the letter cost of biomass at site is INR 2300/MT. Thus the assessment team is of the opinion that the price of biomass is continuously increasing and there are remote chances of a decrease in biomass prices. Thus accepted.
   (iv) The PP stated that the prices are decided as per HERC order which takes into account a number of parameters to determine the tariff price including the price of biomass. Therefore, any increase in the price of tariff shall automatically be accompanied by or even driven by the increase in price of biomass
   (v) The PP has provided actual receipts of biomass purchased for the project activity. It clearly depicts that the escalation in the prices of biomass are much more than 6% on year-on-year basis. Thus the assumption made by the PP was found to be conservative. Further, the increasing trend of biomass price was checked as assessed in the above point (i.e., point #iv). Thus the assessment team is of the opinion that the assumption made by the PP is conservative and correct.
   (vi) The PP has submitted CA Certificate/55/ for the project activity highlighting the expenditure towards project implementation. The certificate clearly reflects that the project cost has already exceeded the envisaged expenditure in the DPR. This would result in further reduction in the IRR of the project activity in comparison to the one considered in the PDD. Thus this was accepted by the assessment team. Further the PP also submitted one legible copy of the PPA, which was checked by the assessment team.

3. The PP has revised the PDD, and has included proper justification for the sensitivity analysis under section B.5 of the PDD. This was checked by the assessment team and was found to be correct.

In continuation of CAR 06, The PP was requested to justify why no information has been provided in the IRR sheet as well as in the PDD regarding the #Div/0! And #NUM! error. Responding to this, the PP has included a justification note in the PDD and also in the IRR sheet, stating that the values "#Div/0!" and #Num!" are not erroneous. The formulae for sensitivity is same for all the values. In many cases where excel is not able to calculate the values, in case of "#Div/0" the calculation of IRR contains near zero as denominator and in case of "#Num" the excel is not able to iterate the value to an accurate result and these figures appear which is normal. This was checked by the assessment team and was found to be correct and CAR 06 was closed.

Opinion:

The above mentioned validation of the investment analysis has been carried out as per the requirements of requirements of paragraphs 117-123 of the VVS[/7/] version 06.0. The validation team is of the opinion that the investment analysis satisfies all the relevant requirements of Guidelines on the assessment of investment analysis (EB 62 Annex 5):

- 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[/4/] and the PDD[/1/] have been consistently applied in all calculations. Thus, it satisfies the requirements of paragraph 6 of EB 62 Annex 5.
- 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 and reproducible; all cells are viewable and unprotected. Thus, it satisfies the requirements of paragraph 8 of EB 62 Annex 5.
- 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 62 Annex 5.
- It is confirmed that the calculated benchmark is based on parameters whose are standard in market and suitably applied in the context of the underlying project activity Thus; it satisfies the requirements of paragraph 13 of EB 62 Annex 5.
- The PP has used debt: equity as 70:30 which is the typical debt/equity finance structure observed in the biomass based power projects in India. Thus; it satisfies the requirements of paragraph 18 of EB 62 Annex 5.
- The PP has presented the results of the sensitivity analysis in the PDD[/1/] and the excel spreadsheet. The analysis is reproducible in the spreadsheet[/4/]. Thus, it satisfies the requirements of paragraph 20 of EB 62 Annex 5.

The sensitivity analysis appropriately covers a range from +10% to -10% and hence satisfies the requirements of paragraph 21 of EB 62 Annex 5

4.8.2 Prior Consideration of the Clean Development Mechanism

The proposed CDM project activity is considered as a new project category because the start date of the project activity is 16/03/2011 i.e. after 2 August 2008 (as per para 107 of VVS version 06.0). The start date of the project activity is the date when the contract[/10/] for supply (purchase order of equipments) between the PP and M/s ISGEC John Thompson, was signed on 16/03/2011; and it is the earliest date at which real action for the project activity begins as per EB70, Annex 04. The prior CDM consideration notification[/25/] for the project activity to the UNFCCC and to the Indian DNA was sent on 27/10/2010, which is prior to the contract signing date for 'erection and commissioning' for the project activity. This is as per the requirement of paragraph 7 of Project Cycle Procedure, version 6 and also as per the requirement of paragraph 107 of VVS, version 06. The project was not yet started, only land preparation was being done when the validation site visit was carried out by the assessment team on 18/02/2011. In order to confirm the implementation of the project activity as per the description mentioned in the PDD, the assessment team raised one FAR (FAR12). The verifying DOE will check the conformity of the implementation and monitoring arrangement of the project activity during the verification process of monitoring period 01.

The PP has demonstrated the awareness of CDM prior to the project start date and seriousness which is evident from the Board Meeting Resolution[/24/] dated 25/06/2010 which clearly indicates that consideration of CDM revenue was instrumental in the decision to proceed with the set up of the biomass based power plant. Further, the project participant had informed the UNFCCC of its intention to seek CDM revenues for the project activity in an e-mail dated 27/10/2010 which is found to be in line with paragraph 7 of Project Cycle Procedure, version 6 and also as per the requirement of paragraph 107 of VVS, version 06.

The chronology of events for CDM consideration for the project activity is as follows:-

Date	Activity	Assessment
25/06/2010	Board Resolution[/24/] was signed wherein CDM was seriously considered for the project activity	The certified true copy of the Board Meeting Resolution[/24/], signed by Director of Start Wire (India) Vidyut Pvt Ltd, dated 25/06/2010 was checked by the assessment team. The original MoM of the board meeting was checked by the assessment team during the site visit and the information mentioned was found to be consistent. It was concluded that the decision to invest in the project was taken on 25/06/2010. Further the consideration of CDM was also discussed in the meeting and the same has been reflected in the Board Meeting Resolution.
15/10/2010	Local Stakeholders Meeting	The local stakeholder's meeting details[/28/ /29/ /30/] was checked from the documentary and photographic evidences submitted by the PP.
27/10/2010	Intimation[/25/] to UNFCCC regarding prior CDM consideration for the project activity	The intimation[/25/] of Prior consideration of CDM to UNFCCC was checked and confirmed from the email communication to UNFCCC dated 27/10/2010. This email communication was further acknowledge by UNCCC via email[/25/] dated 05/11/2012. This information was checked by the assessment team and was found to be correct. Electronic copies of the emails were also collected as evidence by the assessment team.
27/10/2010	Intimation[/25/] to NCDMA (Indian DNA) regarding prior CDM consideration for the project activity	The hard copy of the documentary evidences[/25/] was checked by the assessment team and was found that the DNA was informed regarding the CDM consideration by PP on 27/10/2010. This was also confirmed from the courier receipt[/60/] of letter delivery to NCDMA office.
16/03/2011	Contract for Supply between the PP and M/s ISGEC John Thompson, dated 16/03/2011	The Contract for Supply[/10/] dated 16/03/2011 was checked by the assessment team. This is the start date of the project activity. This start date of the project activity is in line with the definition of "Start Date" as mentioned in EB 70, Annex 04 (Glossary of CDM Terms) and was accepted by the assessment team.

Discussion of CARs/CLs

CAR#05 was raised asking the PP to provide the documentary evidences for prior consideration of CDM for the project activity as described in section B.5 of the PDD and in accordance with EB49 Annex 22 (Valid at the initial phase of validation activity, now replaced by VVS, version 06).

While addressing the CAR#05, the PP stated that start date of the project activity is the date when the Contract for Supply between the PP and M/s ISGEC John Thompson, was signed on 16/03/2011 for the plant and machinery. Intimation/25/ to UNFCCC was given on 27/10/2010 by the PP (i.e., before the start date of the project activity). The PP also submitted the prior CDM consideration form as submitted to UNFCCC to the assessment team.

The purchase order/10/ date and the prior CDM consideration form submitted by PP was verified and found satisfactory. Thus the response provided by the PP was found to be satisfactory and **CAR 05** was closed. For details please refer CAR 05 in the discussion of findings in Annex 3 of this report.

CAR#09 was raised because of the following reason;

1. The section C.1.1. of the PDD mentions 01/04/2011 as the start date of the project activity. The PP was requested to provide the supporting documents for the same in line with para 67 of EB 41.
2. The PP was requested to provide the documentary evidences for the expected operational life time of 20 years of the project activity as mentioned in section C.1.2 of the webhosted PDD.

In response to the CAR#09 the PP clarified that the start date of the project activity has been considered as the date of the Contract for Supply between the PP and M/s ISGEC John Thompson, (i.e.16/03/2011). Since this was the earliest date on which the real action for the implementation begins and thus, the starting date of the project activity is found to be in line with line with the definition of “Start Date” as mentioned in EB 70, Annex 04 (Glossary of CDM Terms) and was accepted by the assessment team. Further to the response of CAR#09, the PP clarified that the project is a Greenfield project, the technical lifetime of the project activity has be safely assumed to be 20 years, i.e. of both boiler and STG, in line with “Tool to determine the remaining lifetime of equipment”, Annex 15, EB 50. The response from the PP was found appropriate and in line to the Annex 15, EB 50 thus **CAR#09** was closed. For details please refer CAR 09 in the discussion of findings in Annex 3 of this report.

Opinion:

The assessment team concluded that the start date of the project activity is after 2 August 2008 and prior to the date of publication of the PDD for global stakeholder consultation. The assessment team also concluded that the PP had an awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project and real and continuing actions were taken to secure CDM status for the project in parallel with its implementation. Validation of the prior consideration of CDM was carried out as per the paragraph 106-111 of VVS, version 06.0. On the basis of the assessment as described above, the assessment team is of the opinion that the project activity meets the requirement of paragraph 105 of VVS, version 06.0.

4.8.3 Identification of alternatives (if applicable)

The additionality of the proposed small scale project activity has been demonstrated as per the requirement of Guidelines on the demonstration of additionality of small-scale project activities (version 09.0); EB68 Annex 27 thus separate step for identification of alternatives as per Additionality Tool is not applicable.

4.8.4 Investment analysis (if applicable)

The additionality of the proposed small scale project activity has been demonstrated as per the requirement of Guidelines on the demonstration of additionality of small-scale project activities (version 09.0); EB68 Annex 27 thus separate step for investment analysis as per Additionality Tool is not required. Please refer above section 4.8.1 of this report for investment analysis.

4.8.5 Barrier analysis (if applicable)

The additionality of the proposed small scale project activity has been demonstrated as per the requirement of Guidelines on the demonstration of additionality of small-scale project activities (version 09.0); EB68 Annex 27 thus separate step for barrier analysis as per Additionality Tool is not required. Please refer above section 4.8.1 of this report for investment analysis

4.8.6 Common practice analysis

The additionality of the proposed small scale project activity has been demonstrated as per the requirement of Guidelines on the demonstration of additionality of small-scale project activities (version 09.0); EB68 Annex 27 thus separate step for common practice analysis as per Additionality Tool is not required.

4.9 Application of Baseline Methodology and Calculation of Emission Factors

The proposed CDM project activity has applied the methodology AMS I.D[/8/], version 17, as the project activity is generation of electricity by using renewable energy resources like biomass. The project activity supplies the net electricity generated to the NEWNE grid. The baseline scenario for the project activity is the electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.

As per paragraph 11 of AMS – I.D[/8/] (Version 17), the baseline emissions are the product of electrical energy baseline $EG_{BL,y}$ expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission factor calculated in a transparent and conservative manner as per paragraph 12 of AMS ID[/8/]:

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

   OR

b) The weighted average emissions (in t CO_2/MWh) of the current generation mix. The data of the year in which project generation occurs must be used.

The PP has selected approach 'a' i.e. combined margin emission factor with ex-ante approach. The baseline emissions are calculated based on the net energy provided to the grid (in MWh /year) by renewable generating units, and an emission factor for the displaced grid electricity (in tCO_2 /MWh). As the project activity lies in the state of Haryana, which is a covered by the NEWNE grid system, the emission factor for NEWNE Grid has been considered. This was approach was found to be correct by the assessment team.

The baseline emission factor (Combined Margin) has been calculated according to the methodological tool "Tool to Calculate the Emission Factor for an Electricity System[/9/]" Version 4.0.0. The data for calculation of combined margin emission factor has been sourced from "CO_2 Baseline Database for the Indian Power Sector", Version 5.0 published by Central Electricity Authority of India. This database is an official publication of the Government of India for the purpose of CDM baselines. It is based on the most recent data available to the Central Electricity Authority. The combined margin emission factor calculated for the NEWNE grid is 0.8401 tCO_2e/MWh and the same has been referred for calculation of baseline emission calculation for the project activity.

Baseline Emissions:

The baseline emissions are appropriately calculated as the product of net energy supplied to the grid (in MWh/year) multiplied by the emission factor for the NEWNE grid (in tCO_2e/MWh).

$\mathbf{BE_y = EG_{BL,y} \times EF_{CO2,grid,y}}$

Where,

BE_y = Baseline emission during the year y (tCO_2)
$EG_{BL,y}$ = Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh)
$EF_{CO2, grid, y}$ = the emission factor of the grid to which the project exports electricity (in tCO_2 /MWh)

Project Emissions:

As per the applied methodology AMS ID ver.17[/8/], for most renewable energy project activities, PEy = 0. The project emission may arise from the use of fossil fuels in the project activity. The PP does not envisage usage of any fossil fuel in the project activity. This was confirmed by the assessment team with reference to the project specifications as described under Detailed Project Report, dated April 2008[/11/].

However, if any amount of fossil fuel is used the same shall be monitored by the PP during the verification period. The project emissions shall be calculated using the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion", version 2, EB 41 following the below methodological choice:

The CO_2 emissions from fossil fuel combustion in process j are calculated based on the quantity of fuels combusted and the CO_2 emission coefficient of those fuels, as per equation 1 of the Tool:

$PE_{FF,j,.y} = \sum FC_{FF,y} * COEF_{i,y}$

Where,
$PE_{FF,j,.y}$ = CO_2 emissions from fossil fuel combustion in process j during the year y (tCO_2/yr);
$FC_{FF,y}$ = Quantity of fuel type i combusted in process j during the year y (mass or volume unit/yr);
$COEF_{i,y}$= CO_2 emission coefficient of fuel type i in year y (tCO_2/mass or volume unit)
i = Fuel types combusted in year y

The CO_2 emissions from fossil fuel combustion in process j during the year y (tCO_2/yr) will be monitored using a weighbridge and recorded in log book. The details of the monitoring of the parameter has been further discussed under section 4.10 of the report. The parameter $COEF_{i,y}$ will further be calculated as per the equation (4) of the tool (EB 41, Annex 2), as follows-

$COEF_{i,y} = NCV_{FF,i,y} * EF_{Fossil\ Fuel,i,y}$

Where,
$COEF_{i,y}$= Is the CO_2 emission coefficient of fuel type i in year y (tCO_2/mass or volume unit)
$NCV_{FF,i,y}$ = Is the weighted average net calorific value of the fuel type i in year y (GJ/mass or volume unit)
$EF_{Fossil\ Fuel,i,y}$ = Is the weighted average CO_2 emission factor of the fuel type i in year y (tCO_2/GJ)

Here for the parameters $NCV_{FF,i,y}$, information provided by supplier will be used. In case of non-availability of data from supplier the value shall be referred from IPCC. This was found to be in line with the requirement of the tool (EB 41, Annex 11). For the parameter $EF_{Fossil\ Fuel,i,y}$, IPCC default values will be used. This was found to be in line with EB 41, Annex 11 and hence accepted by the assessment team.

Leakage Emissions:

With reference to the leakage emissions applicability provision of the applied methodology AMS ID[/8/], it has been confirmed that the proposed project activity does not involve any transfer of energy generating equipment from another activity, thus as per the provision of paragraph 22 of the applied methodology no such no such leakage emissions are applicable for the proposed project activity.

However, with reference to the general guidance on leakage in biomass project activities, the PP has considered the possibility of leakage emissions in the case of the project activity as it utilizes biomass

residues from external sources. As per Annex 28 of EB 47, for this project activity the leakage emission may occur due to the competing use of biomass.

Therefore to determine if there are any leakage emissions due to competing use of biomass, on ex-ante basis the project participant has evaluated based on the biomass assessment report/26/ whether there is a surplus availability of the biomass in the region of the project activity, which is not utilized.

As per Annex 28, EB47, if the quantity of available biomass (Mustard husk, Mustard stick, Paddy Waste, Saw Dust and trees branch cuttings) and bushes) in the region, is at least 25% larger than the quantity of biomass that is utilized including the project activity, then this source of leakage can be neglected. The biomass availability assessment in the project region carried out based on the biomass assessment report/26/ suggests that biomass availability is more than 25% surplus in the region. With reference to the general guidance on leakage in biomass project activities, the PP has analyzed the possibility of leakage in the case of competing use of biomass, as per Annex 28 of EB 47. To determine if there is any leakage due to competing use of biomass, the project participant has evaluated *ex ante* whether there is a surplus of the biomass in the region of the project activity, which is not utilized through a detailed biomass assessment report/26/. The biomass requirement for the project activity is 94,356 MT/year. The biomass assessment study/26/ concludes that the biomass generation (Mustard husk, Mustard stick, Paddy Waste, Saw Dust and trees (Branch cuttings) and bushes) in the district Mahendargarh is 520, 852 MT/year. The consumption of the same in the region including in project plant is 313, 743 MT/year (page #8/32 of biomass assessment report).

Thus, the surplus biomass as a percentage of consumption is found to be more than the figure of 25% required by Annex 28 of EB 47. Therefore, leakage emissions are not taken into account. This was found to be correct by the assessment team. As the biomass assessment report was also approved by Renewable Energy Department, Haryana, thus the assessment team is of the opinion that the report is authentic and the information provided in the report is correct.

Further, in case of collection/processing/transportation of biomass residues is outside the project boundary CO_2 emission from collection/processing/transportation of biomass residues to the project site needs to be considered as the leakage emissions. As the biomass availability is more than sufficient to meet the demand of the project activity as per the biomass assessment report/26/, thus the biomass collection area lies in less than 200 km radius of the project activity, thus emission due to transportation of biomass was also found to be zero. Thus following Annex 28, EB 47 leakage emission has not been considered for the proposed project activity. This was checked and was found to be correct by the assessment team.

Emissions reduction:

As per paragraph 23 of AMS I D/8/ (Version – 17), the emission reductions calculations are as follows:

$$\mathbf{ER_y = BE_y - PE_y - L_y}$$

Where:

ER_y =Emission reductions (t CO2e/y)
BE_y =Baseline emissions (t CO2e/y)
PE_y =Project Emissions (t CO2e/y)
L_y =Leakage emissions (t CO2e/y)

$\mathbf{ER_y}$ **=** (52,453– 0 – 0) tCO_2/y

= 52,453 tCO_2 / year

For the calculation of emission reduction the PP has considered the total installed capacity of the project activity as 9.9 MW and the net electricity generated as 62,441 MWh/year (it is to be noted that for IRR calculation the value available at the time of decision making, i.e., 10 MW has been used, where as for emission reduction the actual implemented size of 9.9 MW has been considered). The detailed calculation of net electricity generated (for the purpose of emission reduction calculation) was checked from the CER spreadsheet/6/ and was found to be correct. The PP has used the combined margin emission factor of NEWNE grid as 0.8401 tCO_2/MWh as assessed above. The net electricity supplied to the grid in MWh has

been multiplied by the combined margin grid emission factor in tCO_2/MWh to arrive at the baseline emission value. Further, as the project and leakage emission in this project activity is zero hence the emission reduction achieved is equal to the baseline emission value. The calculations as shown in the CER spreadsheet were checked by the assessment team and were found to be correct.

Opinion:

Based on the above discussion and the requirements of paragraphs 88-100 of the VVS[/7/] version 06.0, the validation team confirms that:

1. All assumptions and data used by the PP are listed in the PDD[/1/], including their references and sources
2. All documentation used by the PP as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD[/1/]
3. All values used in the PDD[/1/] are reasonable in the context of the proposed CDM project activity
4. The baseline methodology AMS I.D Version 17 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[/1/].

4.10 Application of Monitoring Methodology and Monitoring Plan

The monitoring methodology of AMS I.D., version 17 is correctly followed in the PDD[/1/], and the required parameters of the monitoring plan are also inline to the applicable methodology. The monitoring methodology applies consistently the choice of the option selected for monitoring both of project and baseline emissions.

The monitoring plan 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. The information given for each monitoring variable by the presented table is sufficient to ensure the verification of a proper implementation of the monitoring plan. The PP has defined the following parameters in section B.6.1 (ex-ante) and section B.7.1 (monitored parameters) of the PDD[/1/]:

Ex-ante determined monitoring parameters:

- **$EF_{CO2,y}$:** "Ex- ante CO_2 emission factor for the NEWNE regional grid" has been calculated based following "tool to calculate emission factor for electricity system". The values for operating margin emission factor and build margin emission factor has been taken from CEA published CO2 database, version 05. The calculated value for emission factor is 0.8401 tCO2/MWh. This was checked by the assessment team and was accepted.
- **$SFC_{biomass,l}$:** "Biomass consumption per unit of electricity generated by the Power Plant" has been sourced from DPR[/11/] of the project activity. The purpose of the data is to calculate the consumption of biomass in the project activity. This value was also checked from Haryana Electricity Regulatory Commission Order[/49/], dated 06/11/2009 (http://herc.gov.in/orders/pdf/2009/20091106.pdf). This was found to be correct by the assessment team and was accepted.
- **Demonstration of Surplus Biomass:** Biomass surplus has been determined based on the analysis carried out by "MCJ energy Engineers (P) Ltd". MCJ was hired by the project participant for carrying out an assessment for biomass availability in the project region. The biomass assessment report[/26/] demonstrates that the quantity of available biomass in the region is at least 25% larger than the quantity of biomass that is utilized including the project activity. The fact and figures in the biomass assessment report[/26/] has also been authenticated by The Director General, Renewable Energy Department, Haryana, via letter dated 14/02/2012. This was checked by the assessment team and found justified.
- **$M_{biomass}$:** The value for "Moisture content of biomass" has been adopted based on the report issued by a third party laboratory (a NABL accredited laboratory), that carried out an independent assessment on the available biomass. This was checked from the third party lab report[/59/] (from

Shriram Institute for Industrial Research, Test certificate no- 000142270). This was found to be correct and was accepted by the assessment team. Further this was also found to be in line with the requirement of applied methodology AMS ID, version 17.

Parameters that will be monitored during the crediting period:

- **$EG_{gross,y}$: "**Gross electricity generated by project activity in year y" will be recorded by the energy meter on continuous basis. The recorded data will be archived both in paper and electronically. Energy Meters of accuracy class 0.5 is being installed at the generation point to monitor the gross electricity generated by the project activity. The energy meter would be calibrated by a NABL accredited third party annually.

- **$EG_{gross\ export,y}$:** The Gross electricity exported by project activity in year y will be recorded from the joint meter readings from the main meter installed at the grid interface. Energy Meters of accuracy class 0.2s would be used to measure the gross electricity exported by the project activity and the meter will be calibrated annually by a NABL accredited third party organisation. The main meter readings can be cross ch**ec**$_{ked\ with\ the\ re}$**ad**ing from the check meter and along with the electricity invoice records. The metering approach was validated based on the Article 9 of the PPA[/52/] signed for the project activity and found consistent.

- **$EG_{gross\ import,y}$:** The Gross electricity imported by project activity in year y will be recorded from the joint meter readings issued to the PP. Energy Meters of accuracy class 0.2s would be used to measure the gross electricity imported by the project activity and the meter will be calibrated annually by a NABL accredited third party organisation. The main meter readings can be cross checked with the reading from the check meter and along with the electricity invoice records. The metering approach was validated based on the Article 9 of the PPA[/52/] signed for the project activity and found consistent.

- **$EG_{facility,y}$:** It refers to the Net electricity exported by project activity in year y. This value will be determined as the difference of measured gross electricity export and electricity import. This parameter will be calculated based upon the two measured values **$EG_{gross\ export,y}$** & **$EG_{gross\ import,y}$**. The monitoring details of the parameter were found to be in line with the requirement of the applied methodology AMS ID, version 17.

- **$FC_{FF,y}$:** It refers to the "Quantity of fossil fuel consumed in year y". This value will be obtained from the Plant records. Quantity of fossil fuel used in the project activity would be measured continuously by weigh bridge and recorded in log books and the measuring equipment will be calibrated annually by NABL accredited third party. The monitored value can be cross checked based on energy balance on the purchased fuel and stock inventory changes. The monitoring details of the parameter were found to be in line with the requirement of "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", version 02.

- **$NCV_{FF,i,y}$** : The "net calorific value of fossil fuel type i combusted during the year y" will be sourced from the information provided by the fuel supplier. In case of non-availability of data from supplier the value shall be referred from IPCC default data. The value will be monitored annually. The monitoring of this parameter was found to be in line with the requirement of EB 41, Annex 11 and was accepted by the assessment team. The monitoring details of the parameter were found to be in line with the requirement of "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", version 02.

- **$EF_{Fossil\ Fuel,\ i,\ y}$:** It refers to "Weighted average CO_2 emission factor of fuel type i in year y". The data used for the calculation of the emission factor will be sourced from IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in table 1.4 of Chapter1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories. The monitoring details of the parameter was found to be in line with the requirement of "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", version 02.

- **$FC_{biomass,PJ,y}$:** It refers to "Quantity of the biomass type i consumed in year y". This value will be obtained from the Plant records. The parameter will be measured using a conveyor belt, equipped with load cells, and recorded in log book. Quantity of biomass used in the project activity would be measured continuously and the measuring equipment will be calibrated annually by a NABL accredited third party to ensure the accuracy of the measurement. The amount of biomass consumed will be cross checked with an annual energy balance that is based on purchased quantities (e.g. with sales/receipts) and stock changes. The monitoring details of the parameter were found to be in line with the requirement of the applied methodology AMS ID, version 17.

- **$NCV_{Biomass, i, y}$:** It refers to "Net calorific value of the biomass type k combusted during the in year y". This is a measured parameter and the value will be obtained from the Lab test reports. NCV of the biomass would be tested by a NABL accredited laboratory on dry basis. NCV would be tested once in a quarter, by taking three samples, for the first year. The average value from the quarterly assessment of first year shall then be used for the entire crediting period. The analysis of biomass will be carried out by an authorized testing agency. The average value of the first year shall be cross checked with relevant data sources (e.g. values in the literature, values used in the national GHG inventory) and default values by the IPCC. In case, the variation is significant in the fixed and latest available data, additional measurements shall be carried and conservative data shall be considered. The monitoring details of the parameter were found to be in line with the requirement of the applied methodology AMS ID, version 17.

The monitoring plan completely describes all measures to be implemented for monitoring all parameters required. The meters will be calibrated by external agency.

Data Uncertainty - During the site visit the PP was interviewed for the procedures for dealing with any data uncertainty during the crediting period. It has been found from interviewing the PP that if any of the meters is found to be registered inaccurately, the affected meter will be immediately replaced. In case of any irregularity observed, necessary action would be taken immediately. The data is monitored on day to day basis by the plant officials and the data will be archived both electronically and manually as hard copy and this has been confirmed during the site visit by the assessment team.

Discussion of CARs/CLs

CAR#08 was raised because of the following reason;

1. The PP has mentioned the accuracy class of the energy meters as 0.2s in section B.7.1 of the PDD. The PP was requested to specify exactly whether the accuracy class energy meters that will be used.
2. The PP was requested to specify the authorized laboratories for the determination of NCV of the biomass as mentioned in section B.7 of the webhosted PDD.
3. The PP was requested to specify the monitoring procedure of the fossil fuel and the coal.
4. The PP was requested to describe the monitoring procedure for the moisture content of the biomass residues as per para 22 of the methodology AMS I. D. version 17 in the section B.7.1 of the webhosted PDD.
5. The PP was requested to ensure that the monitoring procedure is in line with the para 22 of AMS I. D. version 17, specifically the column 'Measurement Methods and Procedures'.
6. The PP was requested to mention the calibration frequency of the meters in accordance with General Guidelines to SSC CDM methodologies and Annex 60 of EB 52.

In response to CAR#08 the PP provided the following justification, which was assessed by the assessment team-

1. The PP has confirmed the accuracy level for energy meters that will be installed in the project activity for measuring electricity as 0.2S. This was accepted by the assessment team.
2. The NCV of the biomass fuel will be determined in the NABL certified laboratories as required by para 24 of the methodology AMS I.D. version 16

3. The PP clarified that the Project activity will not use any fossil fuel. However the PP has added parameter to monitor fossil fuel in section B.7.1. Hence the PP incorporated all the parameters as per EB 41, Annex 11 in section B.7.1 of the PDD
4. The PP included monitoring procedure of moisture content in section B.7.1, which was found as per AMS ID version 17. Thus response from PP was accepted
5. The PP has corrected the monitoring procedure in line with the para 24 of AMS I. D. version 17, in the revised PDD, thus accepted.
6. The PP mentioned the calibration frequency for the monitoring equipments in section B.7.1 of the PDD as per the requirement of EB 52 Annex 60. The Response from the PP was found appropriate and in line to methodology AMS ID version 17, thus CAR#8 was closed.

The following points were also raised as a part of CAR#08

1. The PP is requested to clarify whether NCV measurement for biomass being carried out on dry basis. Also the QA/QC procedure discussed is not in line with AMD I.D version 17. The PP was requested to take a corrective action in this regard.
2. It is not clear why the parameter "Moisture content of biomass" is included in section B.7.1, as per meth AMS I.D; it shall be fixed ex-ante. Also it is not clear how the value 9.03% is arrived for this parameter. The PP was requested to justify the same.
3. The PP was requested to clarify which option is preferred to calculate PE as per "**Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion"** and why all the parameters required to be monitored is not reported as per tool.
4. The PP was requested to clarify with regard to the monitoring frequency whether it will be done electronically/manually. Also the archiving procedures of the monitored parameters are not clear in the PDD, the PP was requested to justify.
5. The PP was requested to clarify what is meant by special meters as mentioned in the section B.7.1 of the PDD. The PP was also requested to clarify how many meters are involved in the project activity.
6. The PP was requested to justify why monitoring of auxiliary consumption of the plant has not been included in the section B.7.1 of the PDD.

Responding to the above points raised as a part of CAR#08, the justification provided by the PP was assessed by the assessment team as follows-

1. NCV analysis of biomass is done on dry basis. The monitoring details of the parameter $NCV_{biomass,y}$ as mentioned in section B.7.1 of the revised PDD was checked by the assessment team. The PP has revised the PDD and the details (including QA/QC) mentioned in the revised PDD was found to be in line with the requirement of the monitoring parameter #8 of applied methodology AMS ID, version 17, under paragraph 24.
2. The parameter "Moisture content of biomass" has now been included in the revised PDD. The third party (Shriram Institute for Industrial Research) provided test certificate (No- 00142270), dated 18/09/2009 was checked by the assessment team and was found to be satisfactory. The stated moisture content in the report is 11.91%. This was accepted by the assessment team.
3. The PP has revised the section B.6.1 of the PDD, version 11, dated 19/11/2013. The steps to calculate project emission is now consistent with EB 41, Annex 11. This was checked and was found to be correct by the assessment team.
4. The PP has revised the details of monitoring in section B.7.1 of the PDD. This was accepted by the assessment team.
5. The meter details as mentioned in the section B.7.1 of the PDD was checked by the assessment team and was found to be satisfactory.
6. Auxiliary consumption does not contribute to the emission reduction calculation hence the same is not monitored separately. However, three additional parameters has been included in the PDD

namely, $EG_{gross,y}$ (Gross electricity generated), $EG_{gross\ export,y}$ (Gross electricity exported), $EG_{gross\ import,y}$ (Electricity import)to have more robust monitoring arrangement. The Gross electricity generated shall be monitored using a energy meter in the plant premises while the gross electricity exported and imported shall be monitored at the interconnection point using an energy meter with accuracy 0.2s. Further, Net electricity exported shall be calculated by subtracting the electricity imports (If any) from gross electricity exported from the project activity. The section B.7.1 of the revised PDD, version 11, dated 19/11/2013 was checked by the assessment team and was found to be correct.

Thus all the issues of CAR 08 was successfully addressed by the PP and was accepted by the assessment team and CAR 08 was closed. For details please refer CAR 08 in the discussion of findings in Annex 3 of this report.

Opinion:

Based on the above discussion and the requirements of paragraphs 70-77 of the VVS[/7/] version 06.0, the validation team confirms that:

1. The monitoring plan included in the PDD[/1/] is based on the approved methodology AMS I.D version 17 which has been applied to the proposed CDM project activity
2. The monitoring plan is in compliance with the applied methodology AMS I.D version 17
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[/1/].

4.11 Environmental Impacts

The proposed CDM project activity is a renewable energy biomass based power project. In the PDD[/1/], the PP has mentioned that the project activity does not fall under the purview of Environmental Impact Assessment (EIA) as per the notification of Ministry of Environment and Forest, Government of India as per the Schedule 1 of the EIA notification[/27/] 2006, given by the Ministry of Environment and Forests under the Environment (protection) Act 1986. This information was verified from the official website of Ministry of Environment and Forest, Government of India *(*http://envfor.nic.in/legis/eia/so1533.pdf). Also, from the LoA[/2/], it has been confirmed that the proposed CDM project activity contributes to the sustainable development in the host country. Finally, there is no significant environmental impact due to the project activity; this has been physically verified during the site visit. This was also on the basis of interviews of the personnel during the site visit.

Discussion of CARs/CLs

CAR#10 was raised to substantiate the following –

a) The PP was requested to provide the environmental Impact Assessment report for the project activity as mentioned in section D.2 of the webhosted PDD.

In response to the CAR 10, the PP clarified that is renewable energy project and this does not come under the purview of Environment Impact Assessment notification 2009.

All the information provided by the PP was checked by the assessment team and was found to be correct. Thus the CAR 10 was closed. For details please refer CAR 10 in the discussion of findings in Annex 3 of this report.

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

4.12 Local Stakeholder Comments

The PP identified the relevant stakeholder like individuals, groups or communities, affected, or likely to be affected, by the proposed CDM project activity. The PP invited the various stakeholders for the meeting

through personal invitation and public notice[/28/] in the local newspaper (Aaj, Hindi Newspaper) published on 01/08/2010. This was checked and was confirmed by the assessment team.

Subsequently, a meeting was organized at the project site on 15/10/2010. Representatives from Star Wire (India) Vidyut Pvt. Ltd. facilitated the meeting. Identified stakeholders[/29/] (local villagers, employees of STAR WIRE (INDIA) VIDYUT PVT. LTD and biomass suppliers) were explained the details of the project activity and were given an overview of the greenhouse gases emission, impact of GHG and CDM etc. They were informed how the project activity would lead to GHG emission reduction and contribute to sustainable development in the region. This was checked and was confirmed from the minutes of meeting[/30/] of the stakeholder's meeting, dated 15/10/2010 by the assessment team.

Discussion of CARs/CLs:

CAR 11 was raised asking the PP to provide the summary of the local stakeholders comments as given in the minutes of local stakeholder meeting dated 15/10/2010 in section E.2 of the PDD as per para 138-139 of the VVS version 06.0 and report in section E.3 of the PDD how due account was taken of the comments received.

Addressing the CAR 11 the PP has included the stakeholder's details in the revised PDD[/1/]. The PP clarified that the local stakeholders were invited by means of advertisement in the newspaper, announcements and personal invitations. The proof of the advertisement[/28/] has been provided to the assessment team. The PP also provided the summary and minutes of meeting[/30/] of the stakeholders meeting.

Further there were some editorial corrections in the PDD, which were also raised as a part of CAR 11-

1. Page 2 footnote 1 and page 34: web link was not working. Also the version number of methodology AMS I.D is not mentioned at Page 16 and Page 18 of PDD. The PP was requested to clarify.
2. Section B.6.4: Table containing the CERs does not use the standard format for number and commas. The PP was requested to clarify.
3. Section C.2.2: Start date of crediting period is not in line with the paragraph 62 of PS version 06. The PP was requested to clarify.

The PP revised and corrected the PDD, addressing all the issues. This revised PDD was checked by the assessment team and was accepted. Thus the CAR 11 was successfully addressed by the PP and was closed. For details please refer CAR 11 in the discussion of findings in Annex 3 of this report.

Opinion

According to the requirements of the paragraphs 138-139 of the VVS[/7/] version 06.0[/7/] the validation team is of the opinion that the local stakeholder consultation process has been satisfactorily carried out and there was no negative out come from the meeting.

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/EMJTIGVCKWJWZT9ZWRWR36G8GC5UKQ/view.html* and was open for comments from 15/01/2011 until 13/02/2011. Comments were invited through the UNFCCC CDM homepage

5.2 Compilation of all Comments Received

No comments was received

5.3 Explanation of How Comments Have Been Taken into Account

No comments was received

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
18/02/2011	Mr. Varun Todi	Director Star Wire (India) Vidyut Pvt Ltd.	Technical description of project activity and baseline, CDM consideration, data monitoring for project activity, O & M, monitoring procedures,
18/02/2011	Tushar Jindal	Consultant	Additionality, Baseline and Monitoring procedure.

7. Document References

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

/1/	• PDD, version 1, dated – 12/01/2011 (Webhosted) • PDD, version 2, dated – 20/07/2011 • PDD, version 3, dated – 10/12/2011 • PDD, version 4, dated – 14/02/2012 • PDD, version 5, dated – 05/07/2012 • PDD, version 6, dated- 04/12/2012 • PDD, version 7, dated- 19/02/2013 • PDD, version 8, dated- 18/04/2013 • PDD, version 09, dated- 13/09/2013 • PDD, version 10, dated- 01/11/2013 • PDD, version 11, dated- 19/11/2013 • PDD, version 12, dated 27/01/2014 • PDD, version 13, dated 25/04/2014 • PDD, version 14, dated 28/05/2014 (Final)
/2/	Letter of Approval, No. 4/6/2012-CCC dated 14/09/2012
/3/	Modalities of Communication, dated – 12/01/2013
/4/	Financial analysis spreadsheet (file name: IRR_19042013)
/5/	Benchmark analysis spreadsheet (file name: Benchmark Calculation_14032013)
/6/	ER spreadsheet (file name: Emission Reductions_12022014)

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

PDD Version	Date of Revision	Main changes reason for Revision
Version 14	28/05/2014	The PDD has been updated for- • Changes in Section A.1 of the PDD, in line with CAR 03. • Changes in section B.4 to include the baseline scenarios in line with CAR 04. • Changes in section B.3, the project boundary in line with CAR 04. • Changes in section B.5 of the PDD, in line with CAR 05. • Changes in Section B.5 (IRR calculation corrections) in line with CAR 06. • Changes in section B.6 of the PDD, in line with CAR 07. • Changes in section B.7.1 of the PDD, in line with CAR 08 • Changes in section C.1.1 of the PDD, in line with CAR 09. • Changes in section B.7.1 and B.7.2 in line with CAR 11 • The start date has been updated in Section C.2.2 and section B.6.4 is also updated accordingly.

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)

/7/	Clean Development Mechanism Validation and Verification standard Version 6.0
/8/	Approved methodology version , AMS I D, version 17
/9/	Tool to calculate emission factor for an electricity system, version 4.0.0
/10/	Contract for Supply (purchase order of equipments) between the PP and M/s ISGEC John Thompson, dated 16/03/2011
/10.1/	Letter from the project equipment supplier M/s ISGEC John Thompson regarding capacity of equipment date 06/09/2011
/11/	Detailed Project Report, dated April 2008, prepared by Resurgent India Limited (RIL)
/12/	Letter from the project equipment supplier M/s ISGEC John Thompson for life time of project dated 11/12/2012 as per Tool to calculate remaining life time of project activity
/13/	Undertaking letter for no ODA, Dated- 06/07/2011
/14/	Loan Sanction letter from REC, Dated -11/11/2011
/15/	CERC Notification, 16th September 2009 (http://cercind.gov.in/Regulations/CERC_RE-Tariff-Regualtions_17_sept_09.pdf)
/16/	CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 (http://cercind.gov.in/Regulations/Final_SOR_RE_Tariff_Regulations_to_upload_7_oct_09.pdf)
/17/	CERC notification (draft), dated 15th March, 2009
/18/	CDM Project Standard, Version 5.0
/19/	RBI PLR, http://rbidocs.rbi.org.in/rdocs/Wss/PDFs/WSS260609_F.pdf
/20/	Proposal from the project equipment supplier M/s ISGEC John Thompson, dated 18/01/2010
/21/	Depreciation - IT act , rule 5, http://law.incometaxindia.gov.in/DIT/income-tax-rules.aspx
/22/	Risk free rate (http://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/T27C_TCS0609.pdf)
/23/	Source of BSE Sensex (http://www.bseindia.com/stockinfo/indices.aspx)
/24/	Board Meeting Resolution of Star Wire (India) Vidyut Pvt. Ltd., dated 25/06/2010
/25/	Intimation to DNA & UNFCCC , Dated – 27/10/2010
/26/	Biomass assessment report, prepared by MCJ Energy Engineer's (P) Ltd, dated January, 2010
/27/	EIA weblink - MoEF notification for EIA - http://envfor.nic.in/legis/eia/so1533.pdf dated 14th September 2006
/28/	Local stakeholders advertisement, meeting date – 15/10/2010
/29/	Local stakeholders comments & attendance sheet, Dated – 15/10/2010
/30/	MOM of local stakeholders meeting, Dated – 15/10/2010
/31/	CEA database Version 5 (Ministry of Power, Government of India) http://www.cea.nic.in/reports/planning/cdm_co2/cdm_co2.htm
/32/	Uttar Pradesh State Electricity Regulatory Commission http://www.uperc.org/Default2.aspx
/33/	RERC - Rajasthan Electricity Regulatory Commission (http://rerc.rajasthan.gov.in/)
/35/	Contract for Civil & Structure Work, dated 17/03/2011
/36/	Indian DNA web site: http://www.cdmindia.gov.in/Approved_proj_reports_list_details.php?id=1&reporttype=1&page=10 And this project specific link is- http://www.cdmindia.gov.in/project_details_view.php?id=282&oid=1&page=67&reporttype=1

/37/	CDM Project Cycle Procedure, Version 4.0
/38/	Tamil Nadu Electricity Regulatory Commission, Comprehensive Tariff Order for Biomass based power plants (http://tnerc.gov.in/orders/Tariff%20Order%202009/Bio%20Mass%20Order%2027.04.2009.pdf)
/39/	Maharashtra Electricity Regulatory Commission (MERC) Tariff and Related Dispensation for Procurement of Power from Biomass-based Generation Projects (http://www.mercindia.org.in/pdf/Ord_2009_03_25_CNo_83_of_2008.pdf)
/40/	India Income Tax Act, 1961 (http://law.incometaxindia.gov.in/DIT/Income-tax-acts.aspx)
/41/	Punjab State Electricity Regulatory Commission, Petition number 32 of 2010. (http://peda.gov.in/eng/Data/pdfs/nov2010/pserc-32-2010.pdf) page : 5
/42/	Andhra Pradesh Electricity Regulatory Commission order (http://www.aperc.gov.in/)
/43/	Google Maps Latitude, Longitude Popup http://www.gorissen.info/Pierre/maps/googleMapLocation.php?lat=26.449722&lon=80.233056&setLatLon=Set
/44/	Consent to Establish issued by Haryana State Pollution Control Board, dated 30/09/2010
/45/	UNFCCC Website http://cdm.unfccc.int/
/46/	Income Tax India website http://www.itaxindia.org/2011/10/income-tax-rates-companies-ay-2012-13.html
/47/	BSE Sensex data (http://beta.bseindia.com/indices/IndexArchiveData.aspx?expandable=3)
/48/	Contract between PP and Isgec John Thompson for erection & commissioning of the plant, dated 18/03/2011
/49/	Haryana Electricity Regulatory Commission Order, dated 06/11/2009 in the matter of determination of tariff for biomass based generation projects in Haryana (http://www.herc.gov.in/old_website/orders/pdf/2009/20091106.pdf)
/50/	Haryana Electricity Regulatory Commission Notification, dated 27/05/2011 (http://www.herc.gov.in/old_website/orders/pdf/2011/20110527a.pdf)
/51/	Letter issued by the Director General, Renewable Energy Department, Haryana to the PP, dated 14/02/2012, regarding project capacity based on availability of biomass.

/52/	PPA of the project activity signed between the PP and the Haryana Power Purchase Centre, dated 22/06/2012
/53/	MNRE capital subsidy letter issued by REC to the PP, letter dated 22/10/2012, ref number REC/CO/Ren./Haryana/Starwire.
/54/	Biomass purchase payment voucher, dated 19/11/2012
/55/	CA certificate on project cost, dated 26/06/2013
/56/	Protocol for Commissioning of 9.9 MW Turbo-generator, dated 03/05/2013, issued by EPC contractor (ISGEC Heavy Engineering Limited)
/57/	MOM of Synchronisation meeting, dated 03/05/2013, signed by PP and State Authorities
/58/	Biomass Assessment Report authentication letter, dated 14/02/2012 by The Director General, Renewable Energy Department, Haryana.
/59/	Lab report for moisture content of biomass, dated 18/09/2009 (from Shriram Institute for Industrial Research, Test certificate no- 000142270)
/60/	NCDMA communication Courier receipt from BLAZEFLASH COURIERS LIMITED, dated 27/10/2010
/61/	Survey of Professional Forecasters: Results of the Eleventh Round (Q4:2009-10) http://rbidocs.rbi.org.in/rdocs/Publications/PDFs/PRELE030510.pdf
/62/	Link to State Electricity Regulatory Commission (http://www.cercind.gov.in/serc.html)
/63/	Email Communication with The National CDM Authority (Designated National Authority (DNA),dated 11/06/2014

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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 plant in Mahendargarh, Haryana.

It serves as a "**reality check**" on the project that is completed by the Assessment Team from SGS India.

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
QA/QC procedures for data monitoring or ISO certificates for the company (if applicable) and personnel training programme, Operation & maintenance	PP mentioned that there will be procedures for project performance reviews before data is submitted for verification.	Interviewed	Appropriate and accepted
Host country approval	Host country approval was not provided during the site visit	Site visit	PP provided HCA after the site visit
Does the project activity qualify as small scale project?	The project activity is found to be a small scale project activity as evident from the turbine name plate.	Site visit	Appropriate and accepted
Project boundary	The project boundary is found to be in accordance with the PDD.	Site visit	Appropriate and accepted
Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	PP has the ownership right for the project activity has been checked form PO and civil contract.	Interviewed and site visit	Appropriate and accepted
Technical specification	The technical specification has been checked from the purchase order as there was no activity going on site visit.	Site visit/ Purchase order date 16/03/2011	Appropriate and accepted
Environmental impact	During the site visit it has been found that there is no	Interviewed.	Appropriate and accepted

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
	environment affect envisage due to the proposed project activity.		
Debundling criteria	During the site visit it has found that the project is not a Debundle component of a large scale project	Site visit	Appropriate and accepted
Power Purchase Agreement	PP has provided the power purchase agreement document between client and the UPSEB.	Power purchase agreement	Appropriate and accepted

A.2 Annex 2: Validation Checklist

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

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
1. All Parties involved have approved the project activity 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 1.1.1. The country is a Party to the Kyoto Protocol 1.1.2. Participation is Voluntary 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 1.1.4. It refers to the precise proposed CDM project activity title in the PDD being submitted for registration	Annex 4, Clean Development Mechanism, Validation and Verification Standard, Version 5.0 (from this point forwarded referenced as VVS) – 39 a-d-42 /51 Paragraph 37 CDM Modalities and procedures	India has ratified the Kyoto protocol on 26th August 2002 and is allowed to participate. http://maindb.unfccc.int/public/country.pl?country=IN PP is requested to submit the host country approval for this project activity. PP has submitted host country approval	~~CAR 01~~ CAR 01 closed
1.2. If the project participant(s) listed in the PDD published at international stakeholder[2] consultation are not included in the PDD 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.	EB 30 Para. 41. EB50 Annex 48 para. 8	There is only one PP, Star Wire (India) Vidyut Pvt. Ltd., in the webhosted PDD and the same is expected to remain as PP for the project activity.	Y
1.3. The letter/s of approval are unconditional with respect to 1.1.1 to 1.1.4 above	VVS Para. 46-49	Pending to closure of CAR 01.	~~CAR 01~~ CAR

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

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
		Now point is closed as CAR 01 is closed For projects where there is a doubt to the authenticity of the LoA, action should be taken to verify its issuance from the respective DNA	01 closed
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	VVS Para. 34-37 Marrakech Accords, CDM Modalities, §40	Provide information on the global stakeholder process: website: http://cdm.unfccc.int/Projects/Validation/DB/EMJTIGVCKWJWZT9ZWRWR36G8GC5UKQ/view.html Starting date and closing date: 15th January 2011 – 13th February 2011 Number of comments received: No comments received	Y
3. The project design document is in accordance with the applicable CDM requirements for completing PDDs.	VVS Para. 62-63 Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The project activity has appropriately followed latest version 04.1 of Project Design Document form for Small-Scale CDM project activities and the PDD has completed in line with the requirement of Guidelines for completing the Project Design Document Form for Small-Scale CDM Project Activities, version 01.0 (Annex 9 of EB 66) The tables, headings, logo, format & fonts are in accordance with that used in the PDD template.	Y
4. The project participants shall submit a completed modalities of communication (MoC) Form	Para 53-58, VVS Ver 06.0 F_CDM_MOC form available on UNFCCC websitehttp://cdm.unfccc.int/Reference/PDDs_Forms/index.html#reg	Please submit the modalities of communications for this project activity as per EB45, Annex 59. PP submitted MOC	~~CAR 02~~ CAR 02 closed
5. Have the project participant been authorized by at	VVS para 45-49	Yes the Project participant has been authorized	Y

Requirement	Means of Validation Reference	Comments	Conclusion/CARs/CLs
least one Party involved in letter of approval		by the Party involved in letter of approval. It has been checked form LoA	
6. Has the DNA considered whether the proposed CDM project activity assists the host Party in achieving sustainable development	VVS para 50-52	Yes the DNA has considered that the proposed CDM project activity assists host party in achieving sustainable development	Y

Table 2PDD

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	Guidelines for completing a CDM-PDD (PDD) section A.1	DR	The title of the project activity is “Biomass based power plant in Mahendargarh, Haryana”. This title is unique and has been verified on UNFCCC website for its uniqueness.	Y
A.1.2. Has the PDD been completed using the latest version of the PDD form appropriate to the type of project activity?	VVS Para. 62 F-CDM-SSC-PDD - Project Design Document form for Small-Scale CDM project activities Guidelines for completing the Project Design Document Form for Small-Scale CDM Project Activities Annex 9 of EB 66	DR	The project activity has appropriately followed latest version 04.1 of Project Design Document form for Small-Scale CDM project activities and the PDD has completed in line with the requirement of Guidelines for completing the Project Design Document Form for Small-Scale CDM Project Activities, version 01.0 (Annex 9 of EB 66)	Y
A.1.3. Is there an indication of a revision number and the date of the revision?	PDD section A.1 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	The version number and date of version has been mentioned in section A.1 of the PDD.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A.1.4. Does the PDD clearly indicate the project participant, host party, sectoral scope and selected methodologies correctly as per contract with SGS	PDD template version 4.1 Guidelines for completing a CDM-PDD (PDD) section A.1	DR	Yes the PDD clearly indicates the project participant, host party, sectoral scope and selected methodologies correctly as per contract with SGS	Y
A.2. Description of the Project Activity				
A.2.1. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately?	VVS Para.64 PDD section A.1 see also A.3, and B.2	DR	Please provide the documentary evidences for the technical details of the project activity as described in section A.2 of the webhosted PDD. Also, please provide the references of the documents for the technical details in section A.2 of the PDD. ~~CAR 03 was raised~~. CAR 03 closed.	~~CAR#03~~ CAR 03 closed
A.2.2. Is all information provided consistent and in compliance with the actual situation or planning?	VVS Para.64-69 PDD section A.1see also A.3 B.2	DR	The proposed project activity is a Greenfield 10 MW biomass based power plant. However, this needs to be verified with the detailed project report and the statutory documents/ clearances of the project activity. PP was requested to provide the complete copy of the DPR as mentioned in section B.4 of the PDD to determine the baseline emissions. CAR 04 closed.	Y ~~CAR 04~~ CAR 04 closed
A.2.3. Is all information provided consistent with details provided in further chapters of the PDD?	VVS Para.64-69 PDD section A.1	DR	FAR 12 has been raised to check the details of project implementation and monitoring equipments during first periodic verification of the project activity. FAR 12 raised.	FAR 12
A.3. Location of Project Activity				
A.3.1. Is the Host Party clearly	PDD section A.2	DR	Yes, the table required for the indication of project participants is correctly applied.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
mentioned in the section A.2.				
A.3.2. Are Region/ State/ Province etc.in A.2.2. provided in consistency with details provided by further chapters of the PDD	PDD section A.2	DR	Pending to closure of CAR 04 CAR 04 is satisfactorily closed out.	~~CAR 04~~ CAR 04 closed
A.3.3. Are City/ Town/ Community etc.clearly mentioned in section A.2.3.	PDD section A.2	DR	Yes, the same information has been checked from section A.2.3	Y
A.3.4. Is Physical/ Geographical location provided in A.2.4.	PDD section A.2	DR	Yes, the same information has been checked from section A.2.4	Y
A.4. Technologies and/or measures				
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)? Are the latitude and longitude of the site indicated (decimal points)	V PDD section A.3 Guidelines for completing a CDM-PDD (PDD) section A.3	DR	Yes, the information provided on the location of the project activity allow for a clear identification of the sites. The latitude and longitude of the project activity has been provided in DMS format. PP need to provide the latitude and longitude of the project activity in decimal points.	Y
A.4.2. Does the proposed CDM project activity involve the alteration of	PDD section A.3 Guidelines for completing a	DR SV	No, the proposed project activity is a Greenfield project and thus, does not involve any alteration of existing installations.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
existing installations or process?	CDM-PDD (PDD) section A.3			
A.4.3. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	VVS Para.64-69 PDD section A.3 Guidelines for completing a CDM-PDD (PDD) section A.3	DR SV	Yes, the project participant 'Star Wire (India) Vidyut Pvt. Ltd.' possess the ownership or licenses which will allow the implementation of the project activity.	Y
A.4.4. Is the category(ies) of the project activity correctly identified?	VVS Para.64-69 PDD section A.3	DR SV	This is a Greenfield biomass based independent power plant. The category of the project activity has been correctly identified as ' I. D.: Renewable energy projects'	Y
A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?	VVS Para.64-69 PDD section A.3 EB 52 Para. 13	DR SV	The project activity is currently under implementation stage. The project implementation and planning is as per the actual situation specified.	Y
A.4.6. Is the table required for the indication of projected emission reductions correctly applied?	VVS Para.64-69 PDD section A.3	DR	The table is provided in section B.6.4	Y
A.5. Parties and Project participants				
A.5.1. Are the parties and project participants correctly mentioned in	VVS Para.64-69 PDD section A.4		Yes the parties and project participants are correctly mentioned in the A.4 of the PDD	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
the A.4 of the PDD				
A.6. Public Funding				
A.6.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?	PDD section A.5	DR	Public funding from Annex I and diversion of ODA is not involved in this project.	Y
A.6.2. Is all information provided consistent with details provided by further chapters of the PDD (in particular annex 2)?	PDD section A.5	DR	The project does not involve any public funding and hence, no diversion of funds from official development assistance is expected	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.5	DR	No annex I party is involved in the project.	Y
A.7. **Debundling**				
A.7.1. If the project is a debundled component of a larger project, does the larger project fall within the limits for	VVS Para. 1154-156	DR	No, the project activity is not a debundled component of a large scale project activity. This has been clearly demonstrated in accordance with EB 54, Annex 13 in section A.4.5 of the PDD.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
small-scale CDM project activities				
B. Baseline and Monitoring Methodology				
B.1. Reference of methodology and Project activity eligibility				
B.1.1. Is the baseline and monitoring methodology a valid version approved by the CDM EB?	VVS Para.70 PDD section B.1	DR	Yes, the Project applies Type-I Renewable Energy Projects and category I-D- version 16, grid connected renewable electricity generation. However PDD has been revised for the latest version 17 of AMS-I.D.	Y
B.1.2. is there any specific guidance and or clarification provided by the board on this methodlogy/tool? If yes, is this correctly applied	VVS Para.71 PDD section B (B.2)	DR	No specific guidance and clarification applicable to this project activity	Y
B.1.3. Does the project activity qualify as small scale project?	VVS Para. 72	DR	Yes, the project activity is 10 MW biomass based independent power plant. Hence, it qualify as small scale project activity as per the methodology AMS I. D. Version 16 and Appendix B of modalities and procedures. However PDD has been revised for the latest version 17 of AMS-I.D.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.4. Is the selected simplified methodology applicable to the project activity in the PDD?	VVS Para.76 PDD section B (B.2)	DR	Yes, the selected methodology AMS I.D. version 16 is applicable to the project activity 10 MW (actually 9.9 MW after approval) biomass based IPP. However PDD has been revised for the latest version 17 of AMS-I.D	Y
B.1.5. Does the project activity conform to one of the approved small-scale categories?	VVS Para. 151 EB55 Annex 35	DR	The proposed project activity confirms to AMS I.D./Version 16 under sectoral scope – 01 (Energy industries renewable - Non-renewable sources) and justification for the applicability criteria has been mentioned in the PDD. However PDD has been revised for the latest version 17 of AMS-I.D	Y
B.1.6. Is the project activity a bundle of several small scale activities and if so does it contain any sub-bundles?	VVS para 65c	DR	No, the project activity is not a bundle of several small scale project activities.	Y
B.1.7. 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	No, the project activity is not a bundle of several small scale project activities.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.8. 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	No, the project activity is not a bundle of several small scale project activities.	Y
B.1.9. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVS Para.74-76,77 PDD section B (B.2)	DR	The project activity is a 10 MW biomass based IPP. Yes, the discussion in the PDD is in conformance with all applicability criteria of the applied methodology.	Y
B.2. Project Boundary				
B.2.1. Are all emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified and described in a complete and transparent manner? Is there information on GHG emissions in proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which	VVS Para.82 PDD section B.3 VVS Para 86	DR	Please provide the project boundary diagram as mentioned in section B.3 of the webhosted PDD and in accordance with para 9 of the baseline and monitoring methodology AMS I. D. version 16. PDD has been revised for the latest version 17 of AMS-I.D and a transparent project boundary diagram has been provided, hence CAR 04 is closed out.	~~CAR 04~~ CAR 04 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.				
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the tool to calculate emission factor of electricity system (wherever applicable) and the underlying methodology?	VVS Para.83-- 85 PDD section B.3	DR SV	Please provide the reference of the latest "tool to calculate the emission factor for an electricity system" in section B.4 of the PDD. Reference of the latest Methodological Tool has been provided under revised PDD, hence CAR 04 is closed out.	~~CAR 04~~ CAR 04 closed
B.2.3. Does the project boundary include the physical delineation of the proposed CDM project activity?	VVS Para.83-85 PDD section B.3 also see section A.1 and A.3	DR	Please provide the project boundary diagram as mentioned in section B.3 of the webhosted PDD and in accordance with para 9 of the baseline and monitoring methodology AMS I. D. version 16. PDD has been revised for the latest version 17 of AMS-I.D and a transparent project boundary diagram has been provided, hence CAR 04 is closed out.	~~CAR 04~~ CAR 04 closed
B.2.4. Are the project's geographical boundaries and the project's system boundaries (components and	VVS Para.83-85 PDD section B.3 also see section A.1 and A.3	DR	Please provide the project boundary diagram as mentioned in section B.3 of the webhosted PDD and in accordance with para 9 of the baseline and monitoring methodology AMS I. D. version 16. PDD has been revised for the latest version 17 of AMS-I.D and a transparent project boundary diagram has been provided, hence CAR 04 is closed out.	~~CAR 04~~ CAR 04 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
facilities used to mitigate GHGs) clearly defined?				
B.3. Identification of the Baseline Scenario				
B.3.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	VVS Para..88 PDD Section B.4	DR	Since, the project activity is biomass based power project. The baseline of the project activity is in accordance with para 10 of the methodology AMS I. D. version 16. Hence, please provide the reference of para 10 of AMS I. D. version 16 in section B.4 of the PDD. PDD has been revised for the latest version 17 of AMS-I.D and appropriate clarification has been made under section B.4, hence CAR 04 is closed out.	~~CAR 04~~ CAR 04 closed
B.3.2. Are all tools/procedures in the methodology correctly applied to identify the most reasonable baseline scenario? This includes all potential realistic and credible baseline scenarios in the discussion taking into account relevant national and/or sectoral policies, macro-	VVS Para.89,90,91,92, 93 a,b PDD Section B.4	DR	Since, the project activity is biomass based power project. The baseline of the project activity is in accordance with para 10 of the methodology AMS I. D. version 16. Hence, please provide the reference of para 10 of AMS I. D. version 16 in section B.4 of the PDD. PDD has been revised for the latest version 17 of AMS-I.D and appropriate clarification has been made under section B.4, hence CAR 04 is closed out.	~~CAR 04~~ CAR 04 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
economic trends and political aspirations?				
B.3.3. Is the choice of the baseline compatible with the available data?	VVS Para.94, 95 PDD Section B.4	DR	The choice of the baseline scenario for the proposed project activity is found to be compatible with the available data. However pending to closure of CAR 04 CAR 04 is satisfactorily closed out.	~~CAR 04~~ CAR 04 closed
B.4. Additionality				
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?	VVS Para 158 EB 54 report, annex 15 EB 68 Annex 27 VVS Para.159, 160 PDD Section B.1/B.4/B.5	DR SV	1. PP is requested to objectively demonstrate the barrier due to prevailing practices as mentioned in section B.5 of the webhosted PDD. 2. Please clarify why the analysis of the barrier due to prevailing practices is restricted only to the state of Haryana or how the geographical area has been selected to demonstrate the barrier due to prevailing practices. 1. Please provide the detailed investment analysis sheets as per para 8 of Annex 58 of EB 51 to demonstrate the investment barrier as mentioned in section B.5 of the PDD. 2. Please provide the copies of all the supporting documents for the input values considered for the investment analysis and mention the references of all the input values in the investment analysis sheet.	~~CAR#05~~ CAR 05 closed ~~CAR 06~~ CAR 06 closed
B.4.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes	PDD Section B.1/B.4/B.5	DR	No, the additionality tool has not been used for demonstration of this project activity since the project activity has followed small scale methodology AMS-I.D.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
impact the discussion in the PDD? Are all steps followed in a transparent manner?				
B.4.3. Has all information been backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency to all available data and documentation?	VVS Para.103 PDD Section B	DR SV	Pending to closure of CAR 06 CAR 06 is satisfactorily closed out and all data/ assumption used for investment analysis found to be credible and reliable with complete transparency to all available data and documentation.	~~CAR 06~~ CAR 06 closed
B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project? If the project activity 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	VVS Para.105 PDD Section B.5	DR SV	Pending to closure of CAR 06 CAR 06 is satisfactorily closed out and the evidence provided against the investment analysis is found to be consistent with the project start date.	~~CAR 06~~ CAR 06 closed
B.4.5. If an investment analysis has been	VVS Para. 117, 118, 119	DR	The project activity has used benchmark analysis to demonstrate the additionality of the project activity through investment analysis.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
used, has it been demonstrated that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?	a,b,c, 120 a,b,c,d,e, 121 a,b,c, 122 a,b,c PDD Section B.5			
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).	VVS Para.121 PDD Section B.5	DR	Pending to closure of CAR 06 CAR 06 is satisfactorily closed out and the investment benchmark determined for the investment analysis is found to be consistent with the investment analysis tool.	~~CAR 06~~ CAR 06 closed
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	VVS Para. 124 125a-b/126 PDD Section B.5 EB50, Annex 13	DR	1. PP is requested to objectively demonstrate the barrier due to prevailing practices as mentioned in section B.5 of the webhosted PDD. 2. Please clarify why the analysis of the barrier due to prevailing practices is restricted only to the state of Haryana or how the geographical area has been selected to demonstrate the barrier due to prevailing practices. CAR 05 is satisfactorily closed out.	~~CAR#05~~ CAR 05 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
prevented the implementation of at least one of the alternatives?				
B.4.8. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVS Para. 113 PDD Section B.5	DR	Pending to closure of CAR 06 CAR 06 is satisfactorily closed out	~~CAR 06~~ CAR 06 closed
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?	VVS Para 124 EB 50 Annex 13	DR	Pending to closure of CAR 05 CAR 05 is satisfactorily closed out	~~CAR#05~~ CAR 05 closed
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?	VVS Para. 113 PDD Section A.3/B.5	DR	Since, the project activity is biomass based power project. The baseline of the project activity is in accordance with para 10 of the methodology AMS I. D. version 16. Hence, please provide the reference of para 10 of AMS I. D. version 16 in section B.4 of the PDD. PDD has been revised for the latest version 17 of AMS-I.D and the baseline determination approach found to be consistent with the provision of applied methodology, hence CAR 04 is closed out.	~~CAR 04~~ CAR 04 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.4.11. Has it been shown that the project is not common practice?	VVS Para. 128 PDD Section B.5	DR	This is a small scale project activity & common practice analysis is not applicable to small scale project activities.	Y
B.4.12. What are they key distinctions between the project activity and any similar projects that are widely used as common practice?	VVS Para. 129 a-c, 130 a-d PDD Section B.5	DR	This is a small scale project activity & common practice analysis is not applicable to small scale project activities.	Y
B.5. Application of the Simplified Methodology				
B.5.1. Has the simplified methodology been applied correctly for determining **baseline emissions**?	VVS Para. 96 PDD Section B (B.6.1 -B.7.2)	DR	Since, the project activity is biomass based power project. The baseline of the project activity is in accordance with para 10 of the methodology AMS I. D. version 16. Hence, please provide the reference of para 10 of AMS I. D. version 16 in section B.4 of the PDD. PDD has been revised for the latest version 17 of AMS-I.D and the baseline emission calculation approach found to be consistent with the provision of applied methodology, hence CAR 04 is closed out.	~~CAR 04~~ CAR 04 closed
B.5.2. Has the simplified methodology been applied correctly for	VVS Para. 95,96 PDD Section B	DR	In section B.2 of the webhosted PDD, it has been stated that the project activity utilizes only the renewable biomass like mustard crop residue, Julia flora, etc., in accordance with Annex 18 of EB 23. While in section B.6 of the webhosted PDD the approach 1	~~CAR#07~~ CAR 07 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
determining **project emissions**?	(B.6.2-B.7.2)		mentions the use of fossil fuel for the project activity. PP is requested to further clarify.	
B.5.3. Has the simplified methodology been applied correctly for determining **leakage**?	VVS Para. 96 PDD Section B (B.6.2 -B.7.2)	DR	Please provide all the documentary evidences and the calculations in an excel sheet for the determination of the leakages for the project activity as mentioned in section B.6 of the PDD. CAR 07 is satisfactorily closed out.	~~CAR#07~~ CAR 07 closed
B.5.4. Where applicable, has the simplified methodology been applied correctly for the **direct calculation of emission reductions?**	VVS Para 95, 96 PDD Section B (B.6.2 -B.7.2)	DR	Please provide the detailed emission reduction sheets in excel format, mentioning all the references for the input values in it. Please provide all the documentary evidences and the calculations in an excel sheet for the determination of the leakages for the project activity as mentioned in section B.6 of the PDD. CAR 07 is satisfactorily closed out.	~~CAR#07~~ CAR 07 closed
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?	VVS Para.95,96 PDD Section B (B.6.2 -B.7.2)	DR	Pending to closure of CAR#07 The methodological choice for emission reduction calculation has been found to in compliance with the applied methodology AMS-I.D version 17, hence CAR 07 is satisfactorily closed out.	~~CAR#07~~ CAR 07 closed
B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the	PDD Sections B.5-C	DR	Pending to closure of CAR#07 The methodological choice for emission reduction calculation has been found to in compliance with the applied methodology AMS-I.D version 17, hence CAR 07 is satisfactorily closed out.	~~CAR#07~~ CAR 07 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
documentation?				
B.6. Algorithm and /or formulae used to determine emission reductions				
B.6.1. Are the data provided in compliance with the methodology?	VVS Para. 97,98,99a PDD Section B.6.3 B.6.4	DR	Ex-ante data relating to EF of grid are default values curled out from CEA ver 5, which available at the time of first PDD availed to SGS for the commencement of validation.	Y
B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVS Para. 97,99a,b PDD Section B.6.3/B.6.4	DR	The Ex-ante data relating to EF of grid are default values curled out from CEA, which is a statutory under Government of India.	Y
B.6.3. Is the vintage of the baseline data correct?	PDD Section B.6.3/B.6.4	DR	Yes, the vintage data to determine baseline is in accordance with the applied tool to calculate the emission reductions. The baseline data for the determination of the emission factor has been taken from the CEA CO_2 emission database version 5.	Y
B.6.4. Is all the data appropriate and correctly applied to the CDM project activity?	VVS Para. 99c PDD Section B.6.3/B.6.4	DR	Yes, all the data has been applied appropriately to the proposed CDM project activity.	Y
B.6.5. If the project activity uses the PLF does it follow the guidance provided in EB48 annex 11?	EB48 Annex 11.	DR	Please provide the documentary evidence to substantiate the PLF of the project activity as mentioned in section B.4 of the webhosted PDD. CAR 04 is satisfactorily closed out.	~~CAR 04~~ CAR 04 closed
B.7. Calculation of Emissions Reductions				
B.7.1. Has the simplified methodology been applied correctly for	VVS Para. 99d PDD Section	DR	PP has mentioned the accuracy class of the energy meters as 0.2s/0.5s in section B.7.1 of the PDD. Please specify exactly whether 0.2s or 0.5s accuracy class energy meters will be used.	~~CAR#08~~ CAR 08 closed

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
determining **emission reductions**?	A.4.3/B.6		Please specify the authorized laboratories for the determination of NCV of the biomass as mentioned in section B.7 of the webhosted PDD. The monitoring procedure for the moisture content of the biomass residues has not been described as per para 22 of the methodology AMS I. D. version 16 in the section B.7.1 of the webhosted PDD. Please mention it. Please ensure that the monitoring procedure is inline with the para 22 of AMS I. D. version 16, specifically the column 'Measurement Methods and Procedures'. Please mention the calibration frequency of the meters in accordance with General Guidelines to SSC CDM methodologies (Annex 9 of EB 59) and Annex 60 of EB 52. Please provide the copy of the biomass assessment report as per para 18 of Annex 28 of EB 47. The methodological choice for emission reduction calculation has been found to in compliance with the applied methodology AMS-I.D version 17, hence CAR 08 is satisfactorily closed out.	
B.7.2. Are the emission reduction calculations documented in a complete and transparent manner?	VVS Para. 99e PDD Section B.6	DR	Please provide the detailed emission reduction sheets in excel format, mentioning all the references for the input values in it. Please provide all the documentary evidences and the calculations in an excel sheet for the determination of the leakages for the project activity as mentioned in section B.6 of the PDD. CAR 07 is satisfactorily closed out.	~~CAR#07~~ CAR 07 closed
B.7.3. Is the calculation of the emission reduction correct?	VVS Para. 99e PDD Section B.6	DR	The monitoring procedure of the fossil fuel and the coal is not clear. Kindly provide the project specific monitoring procedure. CAR 07 is satisfactorily closed out.	~~CAR#08~~ CAR 08 closed
B.8. Emission Reductions				
B.8.1. Is the form/table required for the	PDD Section /	DR	The table has been applied correctly.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
indication of projected emission reductions correctly applied?	Section B.6.4			
B.9. Monitoring Methodology				
Are all parameters and data that are available at validation consistent with the simplified methodology. Has this data been interpreted and applied correctly?	VVS Para. 72e PDD Section B.7 see also Annex 5	DR	Pending to closure of CAR#07 & CAR#08 CAR 07 and CAR 08 are satisfactorily closed out.	~~CAR#07 & CAR#08~~ CAR 07 and 08 closed
B.9.1. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?	PDD Sections B and C	DR	Since, the project activity is biomass based power project. The baseline of the project activity is in accordance with para 10 of the methodology AMS I. D. version 16. Hence, please provide the reference of para 10 of AMS I. D. version 16 in section B.4 of the PDD. PDD has been revised for the latest version 17 of AMS-I.D and the monitoring methodology found to be consistent with the provision of applied methodology, hence CAR 04 is closed out.	~~CAR 04~~ CAR 04 closed
B.10. Data and Parameters Monitored				
B.10.1. Is the description of the monitoring plan included in the PDD based on approved monitoring methodology and the	VVS Para. 132 (a) PDD Section B.7-B.7.2	DR	Yes, the description of the monitoring plan included in the PDD based on approved monitoring methodology AMS ID version 17	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
applicable tools				
B.10.2. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	PDD Section B.6.2-B.7.2 EB 55, annex 35	DR	Pending to closure of CAR#08 CAR 08 is satisfactorily closed out.	~~CAR#08~~ CAR 08 closed
B.10.3. 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.7.2	DR SV	Pending to closure of CAR#07 & CAR#08 CAR 07 and CAR 08 are satisfactorily closed out.	~~CAR#07 & CAR#08~~ CAR closed
B.11.				
B.12. Operational and Management Structure				
B.12.1. Is the authority and responsibility of project management clearly described?	PDD Section B.7.3/Annex 5	DR	Yes, the authority and responsibility of project management is clearly described	Y
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and	PDD Section B.7.3/Annex 5		Yes the authority and responsibility for registration, monitoring, measurement and reporting is clearly described	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
reporting clearly described?				
B.12.3. Are procedures identified for training of monitoring personnel?	PDD Section B.7.3/Annex 5		Procedures are identified for training of monitoring personnel.	Y
B.13. Monitoring Plan (Annex 5)				
B.13.1. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?	VVS Para. 132b EB55 Annex 35	DR	Yes, the monitoring plan completely describe all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality	Y
B.13.2. Are procedures identified for calibration of monitoring equipment?	VVS Para. 133a-b EB55 Annex 35	DR	Yes, procedures are identified for calibration of monitoring equipment in the PDD	Y
B.13.3. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	VVS Para. 133a-b EB55 Annex 35	DR	Procedures are identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	Y
B.13.4. Is the monitoring plan in absolute compliance with the monitoring	VVS Para. 132a-c	DR	Yes the monitoring plan is in absolute compliance with the monitoring methodology	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
methodology?				
B.14. Sampling				
B.14.1. Is there any indication of a Sampling?	PDD Section B.7.2/Annex 3	DR	Sampling is not applicable for this project activity.	Y
B.14.2. Is the sampling consistent with the requirement of the methodology ?	Also see revision history of the PDD Standard for sampling and surveys for CDM project activities and programme of activities	DR	Not applicable	Y
B.14.3. Is all data required provided in a complete manner by annex 5 of the PDD?	PDD Annex 5		The information has been provided in the relevant section B.7.1 & B.7.3 of the PDD.	Y
C. Duration of the Project / Crediting Period				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	VVS Para. 105 PDD Section C.1.1/C.1.2	DR	The section C.1.1. of the PDD mentions 01/04/2011 as the start date of the project activity. Kindly provide the supporting documents for the same inline with para 67 of EB 41. CAR 09 is satisfactorily closed out.	~~CAR#09~~ CAR 09 closed
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years	VVS Para. 108a PDD Section C.2/C.2.1/C.2.2	DR	Crediting life time is fixed 10 years	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
with potential for 2 renewals or fixed crediting period of max. 10 years)?				
C.1.3. Does the project's operational lifetime exceed the crediting period	VVS Para. 108a PDD Section C.1.2/C.2.1.1/C.2.1.2	DR	Yes, expected operational life time of the project activity is 20 years which is more than the fixed crediting period of 10 years. Please provide the documentary evidences for the expected operational life time of 20 years of the project activity as mentioned in section C.1.2 of the webhosted PDD. CAR 09 is satisfactorily closed out.	Y ~~CAR#09~~ CAR 09 closed
C.1.4. Does the start date indicate whether this is a new project activity or a pre-existing project activity?	VVS Para. 108a PDD Section C.1.1/C.2.1.1	DR	It is greenfield project.	Y
D. Environmental Impacts				
D.1.1. Does the project comply with environmental legislation in the host country?	VVS Para. 134,135 PDD section D	DR	Please provide the environmental Impact Assessment report for the project activity as mentioned in section D.2 of the webhosted PDD. CAR 10 is satisfactorily closed out.	~~CAR#10~~ CAR 10 closed
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVS Para. 134 PDD section D	DR	Pending to the closure of CAR#10 CAR 10 is satisfactorily closed out.	~~CAR#10~~ CAR 10 closed
D.1.3. Are there any Host	VVS Para.	DR	Pending to the closure of CAR#10	~~CAR#10~~

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	134 PDD section D		CAR 10 is satisfactorily closed out.	CAR 10 closed
D.1.4. Will the project create any adverse environmental effects?	VVS Para. 134 PDD section D	DR	Pending to the closure of CAR#10 CAR 10 is satisfactorily closed out.	~~CAR#10~~ CAR 10 closed
D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVS Para. 134 PDD section D	DR	Pending to the closure of CAR#10 CAR 10 is satisfactorily closed out.	~~CAR#10~~ CAR 10 closed
D.1.6. Have identified environmental impacts been addressed in the project design?	VVS Para. 134 PDD section D	DR	Pending to the closure of CAR#10 CAR 10 is satisfactorily closed out.	~~CAR#10~~ CAR 10 closed
E. Stakeholder Comments				
E.1.1. Have relevant stakeholders been consulted?	VVS Para. 138 PDD Section E.1	DR SV	Yes, the local stakeholders were identified and consulted before the webhosting of the PDD on UNFCCC website.	Y
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVS Para. 139a PDD Section E.1	DR SV	Yes, the local stakeholders were invited by sending the invitation letters to them. This has been described in section E.1 of the PDD.	Y

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVS Para. 139b PDD Section E.1	DR SV	Please provide the summary of the local stakeholders comments as given in the minutes of local stakeholder meeting dated 15/10/2010 in section E.2 of the PDD as per para 129 of the VVM version 1.2 and report in section E.3 of the PDD how due account was taken of the comments received. CAR 11 is satisfactorily closed out.	~~CAR#11~~ CAR 11 closed
E.1.4. Is a summary of the stakeholder comments received provided?	VVS Para. 139b PDD Section E.2	DR SV	Pending to closure of CAR#11 CAR 11 is satisfactorily closed out.	~~CAR#11~~ CAR 11 closed
E.1.5. Has due account been taken of any stakeholder comments received?	VVS Para. 139b PDD Section E.3	DR SV	Pending to closure of CAR#11 CAR 11 is satisfactorily closed out.	~~CAR#11~~ CAR 11 closed

A.3 Annex 3: Overview of Findings

	CARs	CLs	FARs
Total Number raised	11	00	01

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	01	Reference:	HCA
Lead Assessor Comment:					
PP is requested to submit the host country approval for this project activity.					
Project Participant Response:				**Date:** 08/07/2011	
PP has applied for Host Country Approval with the DNA (Ministry of Environment and Forest). The same is expected to be awarded shortly for the project activity.					
Documentation Provided by Project Participant:					
PP has provided HCA on 20/09/2012					
Information Verified by Lead Assessor:					
It was found that the LoA[12] is authentic and meets the requirements of Para 48 of VVM[77]; version 1.2.The assessment team has confirmed that the letter of approval has been issued by the Indian DNA and is valid for the proposed CDM project activity. The LoA[12] clearly confirms that the Government of India has ratified the Kyoto Protocol in 26th August 2002; participation is voluntarily for the project activity and clearly mentioned that the project activity contributes to the sustainable development of India. It has been also confirmed that the LoA[12] is unconditional with respect to the party to the Kyoto Protocol, voluntarily participation, contribution towards sustainable development and the title of the project activity					
Reasoning for not Acceptance or Acceptance and Close Out:				**Date:** 20/09/2012	
HCA is according to para 48 of VVM thus CAR is closed					
Acceptance and Close out by Lead Assessor: closed				**Date:** 20/09/2012	

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	02	Reference:	MoC
Lead Assessor Comment:					
Please submit the modalities of communications for this project activity as per EB45, Annex 59.					
Project Participant Response:				**Date:** 08/07/2011	
The modalities of communication for the project activity is enclosed for your perusal.					
Documentation Provided by Project Participant:					
Modalities of Communications					
Information Verified by Lead Assessor:					
Modalities of Communications, dated 08/07/2011					
Reasoning for not Acceptance or Acceptance and Close Out:				**Date:** 08/07/2011	
The modalities of communication has been provided in a earlier form ver 1.2 of Modalities of Communication. PP is requested to provide the modalities of communication in the latest form of modalities of communication version 1.4. The CAR 02 is open.					
Project Participant Response:				**Date:** 10/12/2011	
The latest version of Modalities of Communication, i.e. version 1.4 has been enclosed as Annexure - 1					
Documentation Provided by Project Participant:					
Annexure 1, Modalities of Communication					
Information Verified by Lead Assessor:					
Annexure 1, Modalities of Communication, dated 10/12/2011					
Reasoning for not Acceptance or Acceptance and Close Out:				**Date:** 16/12/2011	
The modalities of communication have been provided in the latest version of the form. However annexure II is missing from MOC, please clarify.					
Acceptance and Close out by Lead Assessor: Open				**Date:** 23/11/2012	
Project Participant Response:				**Date:** 12/12/2012	
The Annexure II of the format is not applicable for the project activity and has been removed from the submission.					
Documentation Provided as Evidence by Project Participant:					
N/A					
Information Verified by Lead Assessor:					
The annexure II of the format is not applicable to the project activity.					
Reasoning for not Acceptance or Acceptance and Close Out:					
The annexure II is deleted from MOC which is not accepted. Any page of MOC form cannot be deleted even if not applicable. Please refer EB45 annex 59.					
Acceptance and Close out by Lead Assessor: Open				**Date:** 04/01/2013	
Project Participant Response:				**Date: 11/02/2013**	
A copy of latest filled in MOC form is attached for reference.					
Documentation Provided as Evidence by Project Participant:					
MOC, dated 12/01/2013					
Information Verified by Lead Assessor:					
The MOC form, dated 12/01/2013 was completely filled with out deleting any section even if not applicable.					
Reasoning for not Acceptance or Acceptance and Close Out:					
MOC form was found correct and in compliance with EB45 annex 59, thus CAR 02 was closed					
Acceptance and Close out by Lead Assessor: closed				**Date:** 21/01/2013	

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	03	Reference:	A.2

Lead Assessor Comment:

Please provide the documentary evidences for the technical details of the project activity as described in section A.2 of the webhosted PDD. Also, please provide the references of the documents for the technical details in section A.2 of the PDD.

Project Participant Response:	**Date:** 08/07/2011

The work orders submitted by the vendor are enclosed for your perusal. The same were used for referring the technical details of the project activity.

Documentation Provided by Project Participant:

Work order, dated 16/03/2011 was submitted

Information Verified by Lead Assessor:

Work order, dated 16/03/2011 was checked by the assessment team.

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:**03/08/2011

The copies of the work orders and /or proposals have not been provided to the assessment team. PP is requested to provide the same. Open.

Project Participant Response:	**Date:** 10/12/2011

The proposal for design, engineering, supply and civil work of independent biomass based power plant from IJT is enclosed as Annexure – 2 for ready reference of DOE.

Documentation Provided by Project Participant:

1. **The proposal for design, engineering, supply and civil work of independent biomass based power plant from IJT is enclosed as Annexure – 2 for ready reference of DOE.**
2. **The purchase order placed for supply of independent biomass based power plant equipment is enclosed for ready reference of DOE as Annexure – 4.**

Information Verified by Lead Assessor:

1. The proposal for design, engineering, supply and civil work of independent biomass based power plant from IJT is enclosed as Annexure – 2 for ready reference of DOE.
2. The purchase order placed for supply of independent biomass based power plant equipment is enclosed for ready reference of DOE as Annexure – 4.
3. Environment clearance issued by Haryana State Pollution Control Board

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 16/12/2011

The project activity is 10 MW renewable biomass based independent power plant. This has been verified with the environment clearance issued by Haryana State Pollution Control Board, the contract for civil and structural work and for erection and commissioning signed with Isgec John Thompson and the proposal for design, engineering, supply and civil work of independent biomass based power plant from Isgec John Thompson. However, the capacity of the project activity boiler is not mentioned correctly in section A.2, section A.4.2 of the PDD. PP is requested correct the same.
Also, the provided 'Consent to Establish' dated 27/10/2010 was valid up to 01/02/2011. PP is also requested to provide the copy of renewed 'Consent to Establish' for the project activity.
Hence, CAR#03 is still open.

Project Participant Response:	**Date: 14/02/2012**

The capacity of the boiler is revised in the section A.2 and A.4.2 of the PDD to 47 TPH.
The revised consent to establish is enclosed for your perusal.

Documentation Provided by Project Participant:

1. PDD version 4 dated 14/02/2012
2. Consent to Establish from pollution angle issued by HSPCB dated 9th November, 2011

Information Verified by Lead Assessor:

1. PDD version 4 dated 14/02/2012
2. Consent to Establish from pollution angle issued by HSPCB dated 9th November, 2011
3. Letter from ISGEC Heavy Engineering Pvt. Ltd. dated 6th September, 2011(this document is submitted by PP but not mentioned in above section)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 23/02/2012

1. The capacity of the power plant has been revised from 10 MW to 9.9 MW. PP has submitted a letter from ISGEC Heavy Engineering Pvt. Ltd. dated 6th September, 2011 to this effect. However, the approval issued by HREDA for the same as mentioned in section A.2 of the PDD has not been provided. PP is requested to provide the same. Open.
2. The capacity of the boiler i.e. 47 TPH as mentioned in the PDD is not in line with the capacity of boiler mentioned in the contracts signed with the technology suppliers. PP is requested to correct the same. Open.
3. OK, PP has provided the 'Consent Establish' dated 9th November, 2011 issued by Haryana State Pollution Control Board, which is valid upto 31/03/2012. Closed.

The CAR#03 is still open due to non-closure of point 1 and 2 above.

Project Participant Response:	**Date:** 05/07/2012

1. The approval from HAREDA has been issued based on biomass availability in the region for 9.9 MW power plant instead of 10 MW. Keeping the same in mind, PP had decided to go for a 9.9 MW power project instead of 10 MW. A copy of the letter from HREDA is enclosed for your perusal.
2. The capacity of the boiler has been updated in the PDD to 47.5 TPH from 47 TPH as per the purchase order issued to the technology supplier.

Documentation Provided by Project Participant:

Revised PDD version 05, letter from HAREDA

Information Verified by Lead Assessor:

Capacity of boiler in PDD, version 5, dated – 05/07/2012
Letter issued by the Director General, Renewable Energy Department, Haryana to the PP, dated 14/02/2012, regarding project capacity based on availability of biomass.
and Contract between PP and Isgec John Thompson for erection & commissioning of the plant, dated 18/03/2011

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 04/09/2012

1. PP has provided HREDA, capacity is mentioned 9.9 and therefore PP justification is accepted.
2. PP has corrected the capacity of boiler 47.5 in line to the PO form technical supplier. Closed

Furthermore the PP is request to clarify following;

i. Project description is unclear with regard to the implementation schedule of the project activity
ii. PDD description is not as per the requirement of VVM 1.2 para 58. Also the project description is not transparent with regard to the baseline scenario. It is unclear which grid system power is being evacuated to and what is the procedure of metering
iii. Government of India has not been designated as ratified to Kyoto Protocol as Host Party. "India" is Host Party and not Government of India. Please clarify inconsistency.

Acceptance and Close out by Lead Assessor: Open	**Date:** 23/11/2012
Project Participant Response:	**Date: 12/12/2012**

i) The project is expected to be commissioned by Feb 2013. The same has been delineated in the PDD
ii) The generated electricity shall be exported to the NEWNE grid. The same has been delineated in the PDD
iii) The correction is done in the PDD. India is now mentioned as Host Party instead of Government of India

Documentation Provided as Evidence by Project Participant:

PDD Version 06, dated 04/12/2012.

Information Verified by Lead Assessor:

i) PDD Version 06, dated 04/12/2012 was checked by the assessment team.
ii) The Project is not commissioned yet, the same is expected to be done by Feb 2013.
iii) The PP has provided project description in section A.4.2. the same has been check and found correct.
iv) The PP has corrected the name (India) of host party in revised PDD.

Reasoning for not Acceptance or Acceptance and Close Out:	
The revised PDD version 06 dated 04/12/2012 has been checked and found correct. This CAR was further reopened as- In section A.1, PP has mentioned that It is mentioned that project is expected to be commissioned by Feb 2013. Please provide the realistic information about the same. If the project has been commissioned also provide the commissioning certificate. CAR open.	
Project Participant Response:	**Date: 13/09/2013**
The project has been commissioned and the synchronization with the grid happened in May 2013. The PDD is accordingly updated	
Documentation Provided as Evidence by Project Participant:	
PDD version 9, dated 13/09/2013	
Information Verified by Lead Assessor:	
PDD version 9, dated 13/09/2013 was checked by the assessment team.	
Reasoning for not Acceptance or Acceptance and Close Out:	
PP is requested to provide commissioning certificates to confirm the implementation status of the project activity. The document provided by PP, regarding synchronisation approval, does not say anything about commissioning of the plant on Feb 2013. Further PDD has mentioned the synchronisation as May 2013. CAR open.	
Project Participant Response:	**Date: 01/11/2013**
The completion certificate provided by the EPC contractor is attached for reference. The same mentions that the project activity has been synchronised with the grid in the month of May. Further, the grid synchronization letter is already provided with the DOE and the MOM of the synchronization meeting is attached for reference.	
Documentation Provided as Evidence by Project Participant:	
Synchronisation approval, dated 01/10/2012 MOM Synchronisation, dated 03/05/2013 Protocol for Commissioning of 9.9 MW Turbo-generator, dated 03/05/2013	
Information Verified by Lead Assessor:	
Synchronisation approval, dated 01/10/2012 was checked by the assessment team MOM Synchronisation, dated 03/05/2013 was checked by the assessment team Protocol for Commissioning of 9.9 MW Turbo-generator, dated 03/05/2013 was checked by the assessment team Revised PDD, version 10, dated 01/11/2013 was checked by the assessment team.	
Reasoning for not Acceptance or Acceptance and Close Out:	
The documents provided by PP towards implementation status of the project activity was checked by the assessment team. The project was synchronised to grid on 03/05/2013, this was checked from Protocol for Commissioning of 9.9 MW Turbo-generator, dated 03/05/2013, issued by EPC contractor. This was also checked from the MOM of Synchronisation meeting, dated 03/05/2013, signed by PP and State Authorities. The implementation status has also been included in section A.1 of the Revised PDD, version 10, dated 01/11/2013. CAR closed.	
Acceptance and Close out by Lead Assessor: closed	**Date: 06/11/2013**

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	04	Reference:	B.4

Lead Assessor Comment:

1. Since, the project activity is biomass based power project. The baseline of the project activity is in accordance with para 10 of the methodology AMS I. D. version 16. Hence, please provide the reference of para 10 of AMS I. D. version 16 in section B.4 of the PDD.

2. Please provide the reference of the latest "tool to calculate the emission factor for an electricity system" in section B.4 of the PDD.

3. PP is requested to provide the complete copy of the DPR as mentioned in section B.4 of the PDD to determine the baseline emissions.

4. Please provide the documentary evidence to substantiate the PLF of the project activity as mentioned in section B.4 of the webhosted PDD.

5. Please provide the project boundary diagram as mentioned in section B.3 of the webhosted PDD and in accordance with para 9 of the baseline and monitoring methodology AMS I. D. version 16.

Project Participant Response:	**Date:** 08/07/2011

1. Section B.4 of the PDD is modified to provide reference of para 10 of AMS I.D. version 16.
2. The reference to the tool has now been delineated in the PDD
3. The DPR has been sent through courier for ready reference of the DOE.
4. The PLF of the project activity has been referred from the DPR which is prepared by an independent third party consultant.
5. The project boundary diagram was already a part of the webhosted PDD.

Documentation Provided by Project Participant:

Revised PDD version 02 dated 20/07/2011

Information Verified by Lead Assessor:

Revised PDD version 02 dated 20/07/2011

Reasoning for not Acceptance or Acceptance and Close Out:	**Date**: 08/08/2011

1. Ok the reference of para 10 of the methodology AMS I. D. Version 16 has been provided in section B.4 of the PDD closed.
2. OK, the reference of the tool to calculate the emission factor has been mentioned in the revised PDD, however, the PP is requested to apply the latest version of the tool for the calculation of the baseline emission factor and should describe the procedure to calculate the emission factor in the PDD accordingly Open.
3. OK, the plant load factor of 80% has been taken from the DPR of the project activity, which has been prepared by a third party, M/s. Resurgent India Ltd., contracted by PP. This is in line with the requirement of para 3 (b) of Annex 11 of EB 48; closed
4. OK, the project boundary diagram has been delineated in section B.3 of the PDD as per para 9 of the methodology AMS I. D. Version 16; closed
5. PP is requested to apply the latest version 17 of the methodology AMS I. D. To this project activity Open.

The CAR 04 is still open due to point number 2 & 5.

Project Participant Response:	**Date:** 10/12/2011

2. The latest version of the tool to calculate the emission factor of an electricity system, i.e. version 02.2.0 is now referred for the project activity. The procedure to calculate the emission factor is now delineated in the PDD.
5. The PDD has been updated in accordance of the latest version, i.e. version 17, of the methodology AMS.I.D

Documentation Provided by Project Participant:

Revised PDD version 3 dated 10/12/2011

Information Verified by Lead Assessor:

Revised PDD version 3 dated 10/12/2011

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 28/12/2011
2. OK, PP has used the version 2.2.0 of the tool to calculate the emission factor of an electricity system in the revised PDD. However, PP is requested to describe all the steps of the tool to calculate the emission factor in the PDD. Open. 5. OK, the latest version 17 of the methodology has been applied to the project activity. However, please update the section B.3 'description of the project boundary' of the PDD as per para 9 of the methodology AMS I. D. Version 17. Open. Hence, the CAR 04 is still open.	
Project Participant Response:	**Date: 14/02/2012**
2. The PP has now presented the latest version 2.2.1 of the tool to calculate the emission factor of an electricity system in the revised PDD. All the steps of the tool to calculate the emission factor is now delineated in the PDD. 5. The description of the project boundary is updated in the section B.3 of the PDD in line with para 9 of the methodology AMS I.D., version 17.	
Documentation Provided by Project Participant:	
Revised PDD version 4 dated 14/02/2012	
Information Verified by Lead Assessor:	
Revised PDD version 4 dated 14/02/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 02/03/2012
2. OK, PP has applied the latest version 2.2.1 of the tool to calculate the emission factor of an electricity system in section B.4 of the PDD. However, the same has not been reflected in the IRR calculation sheet and also, the emission factor is not consistent throughout the PDD. PP is requested to correct the same. Open. ***5.*** Ok, the description of the project boundary is updated in the section B.3 of the PDD in line with para 9 of the methodology AMS I.D., version 17. It has been found to be correct and hence closed. The CAR 04 is still open.	
Project Participant Response:	**Date:** 05/07/2012
2. The tool to calculate emission factor of electricity system is now referred in the IRR calculation sheet. Also, the same is now made consistent throughout the PDD	
Documentation Provided by Project Participant:	
Revised PDD version 05 dated – 05/07/2012	
Information Verified by Lead Assessor:	
Version 2.2.1 has been mentioned in PDD version 05 dated – 05/07/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 04/09/2012
PP has used latest version 2.2.1 of the tool to calculate the emission factor of an electricity system in section B.4 of the PDD. The revised PDD has been checked and found correct. Furthermore the is has been found that; i. The description of the project boundary is not transparent as per the requirement of VVM 1.2 para 78 ii. The diagram provided in the section B.3 is not found to be consistent with the description provided in the section.	
Acceptance and Close out by Lead Assessor: Open	**Date:** 23/11/2012
Project Participant Response:	**Date:** 12/12/2012
i) The description of the boundary is further elaborated in the PDD to make it transparent for the readers ii) The diagram has been modified to bring consistency between the diagram and the text.	
Documentation Provided as Evidence by Project Participant:	
Revised PDD version 06 dated 04/12/2012	
Information Verified by Lead Assessor:	
i. The description of project boundary is now consistent to project activity. ii. Project activity diagram is not consistent to para9 of methodology AMS ID version 17, the PP has not marked all power plants connected to grid.	

Reasoning for not Acceptance or Acceptance and Close Out:	
Project activity diagram is not consistent to para 9 of methodology AMS ID version 17, the PP has not marked all power plants connected to grid. Hence CAR is opened.	
Acceptance and Close out by Lead Assessor: open	**Date:** 04/01/2013
Project Participant Response:	**Date: 11/02/2013**
This is a Greenfield project activity. The project activity diagram clearly shows the connection with state grid and is in line with the para 9 of the applied methodology AMS-I.D	
Documentation Provided as Evidence by Project Participant:	
Revised PDD version 07 dated 19/02/2013	
Information Verified by Lead Assessor:	
The PP has shown other power plant connected to grid in the revised PDD version 07 dated 19/02/2013	
Reasoning for not Acceptance or Acceptance and Close Out:	
The revised PDD version 07 has been checked and found correct. However, the CAR was further reopened; PP has to clarify, why other plants are considered under project boundary.	
Project Participant Response:	**Date: 13/09/2013**
The project boundary diagram is now updated and the other plants are removed from the boundary of the project activity	
Documentation Provided as Evidence by Project Participant:	
Revised PDD version 09, dated 13/09/2013	
Information Verified by Lead Assessor:	
Revised PDD version 09, dated 13/09/2013 was checked by the assessment team.	
Reasoning for not Acceptance or Acceptance and Close Out:	
The revised PDD was checked by the assessment team and was found to be correct. Thus CAR is closed.	
Acceptance and Close out by Lead Assessor: closed	**Date: 13/09/2013**

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	05	Reference:	B.5

Lead Assessor Comment:

3. Please provide the documentary evidences for prior consideration of CDM for the project activity as described in section B.5 of the PDD and in accordance with EB49 Annex 22.
4. PP is requested to objectively demonstrate the barrier due to prevailing practices as mentioned in section B.5 of the webhosted PDD.
5. Please clarify why the analysis of the barrier due to prevailing practices is restricted only to the state of Haryana or how the geographical area has been selected to demonstrate the barrier due to prevailing practices.

Project Participant Response: **Date:** 08/07/2011

1. The email communication with UNFCCC to intimate about the conceptualization of the project activity is enclosed for your perusal.
2. The PP has established financial additionality for the project activity. Since, project activity is a small scale project, the financial barrier is sufficient to demonstrate additionality of the project activity. Therefore, the barrier pertaining to prevailing practice has now been removed from the PDD.
3. Kindly refer to reply above, the barrier due to prevailing practices is now removed from the PDD.

Documentation Provided by Project Participant:

1. Snapshot of the UN website as an evidence to demonstrate the notification provided to UNFCCC for the prior CDM consideration of the project activity

Information Verified by Lead Assessor:

1. Snapshot of the UN website as an evidence to demonstrate the notification provided to UNFCCC for the prior CDM consideration of the project activity

Reasoning for not Acceptance or Acceptance and Close Out: **Date:**08/08/2011

1. PP has provided the snapshot of the UN website as an evidence to demonstrate the notification provided to UNFCCC for the prior CDM consideration of the project activity. It has been verified with the UN website and it was found that the PP has intimated about the project activity on 27 October, 2010. However, PP is requested to provide the evidences for the intimation sent to DNA of India for the notification of the project activity as required by para 2 of EB 62, Annex 13. Open.
2. The barrier due to prevailing practice is still there in the revised PDD. PP is requested to further clarify. Open.
3. Open due to point number 2 above. Open.

The CAR is open due to above issues.

Project Participant Response: **Date:** 10/12/2011

1. The email correspondence with UNFCCC is enclosed for ready reference of DOE as Annexure - 3.
2. The barrier due to prevailing practice has now been removed from the revised PDD. The PP has established financial adiitionality for the project activity. Since, project activity is a small scale project, the financial barrier is sufficient to demonstrate additionaility of the project activity.
3. Kindly refer to reply above, the barrier due to prevailing practices is now removed from the PDD.

Documentation Provided by Project Participant:

E-mail correspondence with UNFCCC as Annexure - 3.

Information Verified by Lead Assessor:

E-mail correspondence with UNFCCC as Annexure - 3.

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 28/12/2011

1. The intimation sent to Indian DNA for the prior CDM consideration as as required by para 2 of EB 62, Annex 13 has not been provided. PP is requested to provide the same. Furthermore, the project activity has been notified to UNFCCC three times as per the UN website on 16 Sep 2009, 22 Sep 2009 and on 27 Oct 2010 by Star Wire (India) Vidyut Pvt. Ltd. for securing the CDM status for the project activity. PP is requested to clarify why the project activity has been notified three times to UNFCCC for seeking CDM status. Open.
2. OK, the barrier due to prevailing practice has been removed from the PDD version 03, dated 10/12/2011. Closed.
3. OK, the barrier due to prevailing practice has been removed from the PDD version 03, dated 10/12/2011. Closed.

Project Participant Response:	**Date: 14/02/2012**
1. The PP earlier envisaged to install the project activity with capacity of 8 MW and informed the UNFCCC accordingly on 16/09/2009 (The PP is not sure why the same is also reflected on 22/09/2009 as no communication from PP has gone to UNFCCC on 22/09/2009). However, the PP later on decided to go for an enhanced capacity of 10 MW for the project activity. The board resolution for the same was passed on 25th June 2010. Therefore, the PP again intimated UNFCCC on 27th Oct 2010 and applied for revision of various approvals, like consent to establish, etc.	
Documentation Provided by Project Participant:	
Revised PDD version 4 dated 14/02/2012	
Information Verified by Lead Assessor:	
Revised PDD version 4 dated 14/02/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 02/03/2012
1. The PP has notified to UNFCCC of the commencement of the biomass based power plant on dates 16/09/2009, 22/09/2009 and 27/10/2010. The PDD for this project activity was published for the global stakeholder consultation on UNFCCC website from 15 January, 2011 to 13 February, 2011. The start date of the project activity is 16th March, 2011 based on the purchase order placed for the plant and the machinery to M/s. Isgec John Thompson dated 16th of March, 2011. Thus, the PDD has been published on for international stakeholder consultation before the start date of the project activity. So, as per para 2 of the EB 62, Annex 13, it is not necessary to notify UNFCCC or NCDMA to secure the prior CDM consideration for the project activity. Hence, it is concluded that the PP has seriously considered the CDM benefits for the implementation of the project activity. Hence, the CAR#05 has been closed satisfactorily.	
Acceptance and Close out by Lead Assessor: closed	**Date:** 02/03/2012

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	06	Reference:	B.5

Lead Assessor Comment:

3. Please provide the detailed investment analysis sheets as per para 8 of Annex 58 of EB 51 to demonstrate the investment barrier as mentioned in section B.5 of the PDD.
4. Please provide the copies of all the supporting documents for the input values considered for the investment analysis as per para 111 of VVM version 1.2 and mention the references of all the input values in the investment analysis sheet.

Project Participant Response: **Date:** 08/07/2011

1. The IRR calculation sheet is enclosed for your perusal.
2. All the supporting are now mentioned in the IRR sheet and the same are enclosed for your ready reference.

Documentation Provided by Project Participant:

1. IRR calculation sheet
2. Detailed project report of the project activity dated April, 2008

Information Verified by Lead Assessor:

1. IRR calculation sheet
2. Detailed project report of the project activity dated April, 2008

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 08/08/2011

8. OK, the investment analysis sheet has been provided. However, as the purchase orders have been placed for the project activity on 01/04/2011 as mentioned in section C.1.1 of the PDD. The PP is requested to provide the copies of the proposal and purchase orders of the project activity to cross verify the input values provided in the investment analysis sheet as per para 111 of VVM version 1.2.
9. Please address the comments raised in the IRR calculation sheet
10. The IRR calculated in the DPR dated April 2008 for the project activity is 5.98%, however the calculated IRR in the investment analysis sheet is coming out to be negative. PP is requested to provide the reason for this difference in the IRR with proper evidences.
11. Please provide the evidences for the O & M costs considered for the project activity
12. Please provide documentary evidence in line with considered biomass price and its escalation
13. Please clarify how the tax has been calculated by correctly applying sec 80IA and carry forward of losses u/s 72
14. Please justify why tax benefit arising from allowed accelerated depreciation under income tax act has not been considered while calculating IRR.
15. Please check #NUM! Errors in sheet and correct.
16. Please include results of threshold limit (Scenario in which the calculated IRR crosses benchmark also explain the likelihood of that scenario)
17. WACC calculation: Please connect values from respective cell to calculate WACC.

The CAR is still open due to above issues.

Project Participant Response: **Date:** 10/12/2011

1. Earlier there was no purchase order placed for the project activity. Therefore, PP had put an envisaged date, i.e. 01/04/2011, as the starting date of the project activity. However, the same is now revised to 16/03/2011 as the first purchase order for supply of independent biomass based power plant equipment was placed on that day. The purchase order placed is enclosed for ready reference of DOE as Annexure – 4.
2. The comments in the IRR calculation sheet have been duly addressed
3. The IRR calculated in the DPR dated April 2008 has not considered IT depreciation into consideration. However, the same has been considered in the IRR calculation sheet submitted to DOE as it is a general practise while calculating IRR. Therefore, there is difference in both the IRR
4. The O&M cost considered for the project activity is in accordance of the DPR
5. The biomass price and its escalation values are referred from the DPR.
6. The tax calculation has been revised to maintain conformity with section 80IA
7. The benefit arising from allowed accelerated depreciation under income tax act has already been accounted in the IRR calculation. Please refer the depreciation sheet of the IRR calculation sheet already submitted with DOE.
8. The #NUM! value in the sensitivity sheet is not an error and is due to the negative IRR.

9. The result of threshold limit is now explained in the PDD.
10. All the values are connected in the benchmark sheet utilized for the calculation of WACC.

Documentation Provided by Project Participant:

1. The proposal for design, engineering, supply and civil work of independent biomass based power plant from IJT as Annexure – 2.
2. The purchase order placed for supply of independent biomass based power plant equipments as Annexure – 4.

Information Verified by Lead Assessor:

1. The proposal for design, engineering, supply and civil work of independent biomass based power plant from IJT as Annexure – 2.
2. The purchase order placed for supply of independent biomass based power plant equipments as Annexure – 4.

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 28/12/2011

1. OK, the start date of the project activity has been considered as 16th March, 2011 based on the purchase order placed for the plant and the machinery to M/s. Isgec John Thompson on 16th of March, 2011. This is the earliest date on which the real action for the implementation of the project activity begins and thus, the starting date of the project activity is found to be inline with para 67 of EB 41. Closed.

For rest of the queries, PP is requested to submit the revised IRR calculation sheet and the revised benchmark calculation sheet.
Hence, the CAR 06 is still open.

Project Participant Response:	**Date:** 14/02/2012

The revised IRR calculation sheet and benchmark calculation sheet is enclosed for your perusal.

Documentation Provided by Project Participant:

Revised IRR Calculation Sheet

Information Verified by Lead Assessor:

Revised IRR Calculation Sheet

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 13/02/2012

1. PP is requested to provide the evidences for the cost of the computer, furniture, fixtures and the vehicles. Furthermore, the cost of computer, furniture & fixtures and vehicles comes out to be only 4 million INR as per the DPR, page 62. PP is requested to clarify the same. Open.
2. OK, the plant load factor of 80% has been taken from the DPR of the project activity, which has been prepared by a third party, M/s. Resurgent India Ltd. contracted by PP. This is in line with the requirement of para 3 (b) of Annex 11 of EB 48; closed
3. Considered D/E ratio in line with Para 18 of EB62 Annex 5. However, all the comments in the IRR sheet have not been addressed. There are still some comments which need to be addressed by the PP. Open.
4. PP is required to consider O&M in sensitivity analysis, PP is also requested to provide the evidences for cross checking the O & M cost such as invoices as per para 111 (b) of VVM Version 1,2. OPEN
5. PP has not applied provision of sec 80IA correctly, PP is requested to revise tax calculation by correctly applying sec 80IA and carry forward of losses u/s 72 OPEN
6. It is not clear how PP has considered Tax benefit arising from allowed accelerated depreciation under income tax act while calculating IRR. Please clarify. OPEN
7. To be rechecked in next submission of response. OPEN
8. PP is requested to include biomass cost (Biomass consumption * Biomass Price) in sensitivity analysis. OPEN
9. PP is requested to justify the choice of index and time period considered for calculation of cost of equity. Open.
10. PP is requested to justify the choice of companies considered for calculation of beta also please justify why the same has been limited to 8 companies. Open.
11. PP is requested to justify why a rate of 12.25% has been considered instead of 11.5% (loan interest rate) for calculation of cost of debt. Open.

The CAR 06 is still open.

Project Participant Response:	**Date:** 05/07/2012

1. The expenditure has not been made yet as the project is in construction phase. Moreover, the cost mentioned in cell C22 of IRR sheet is a collation of preliminary expenses, computer, furniture, fixtures and vehicles purchase which is as per DPR, page no 62. The DPR was prepared by a third party and was the source of financial calculation used for board decision to implement the project.
3. All the comments are now addressed in the IRR sheet
4. O&M cost is now subjected to sensitivity analysis. As the supplier is providing a warranty of 1 year, PP has not signed any O&M agreement as of now. The assumption has been taken in line with the HERC tariff order dated 06/11/2009.
5. The PP has not claimed 80 IA benefit in the IRR calculation sheet as the cumulative profit for the project is negative throughout the project
6. The depreciation has been considered in accordance with the depreciation rates given for agricultural and municipal waste conversion devices producing energy
7. Is this relevant to our project?
8. PP has already carried out sensitivity analysis for biomass consumption and biomass price. Applying sensitivity to both the parameters simultaneously may not be logical as the biomass consumption is not linked to biomass price in any sense. At a given point of time the biomass consumption may be less while biomass price is higher than considered for calculation or vice versa.
9. BSE 500 represents about 94% of the market capitalization and hence provides better overview of the market return over the years. The PP has selected beta of more than 10 years to have a holistic overview of the returns over the period
10. The beta calculation is carried out for companies operating in same sector as project activity, i.e. power production, to provide actual return available with the sector.
11. The loan interest rate has been modified to 11.5%

Documentation Provided by Project Participant:

Revised PDD version 05, revised IRR calculation sheet

Information Verified by Lead Assessor:

1, Revised PDD version 05, dated – 05/07/2012 and revised IRR calculation sheet was checked by the assessment team.
2.Plant has not commissioned yet, however the cost has been referred from DPR which was available at the time of decision making.
3, The PP has addressed all the comments in IRR sheet
4, O&M cost has been taken by PP in sensitivity analysis. It has been check with variation of +/-10% of O&M IRR does not exceed benchmark
5, PP has not claimed 80IA benefit.
6, the PP has considered tax benefit arising from depreciation as per the depreciation rates given for agricultural and municipal waste conversion devices producing energy.
8, the PP has done sensitivity analysis with biomass price. It has been found that project IRR cross benchmark if biomass price reduced by 10%. However this is not possible because the PP has already taken lesser price in comparison to other CDM registered project. And as per HERC biomass price escalation is 5.5% every year.
9. Since BSE 500 represent more than 94% of market capitalization thus selection of this index is widely adapted throughout the Indian scenario. PP has also considered data since 1999 till decision date Jun 2010. It is almost 12 year. Data has been take form 1999 because this is the year when many similar companies have been registered and there data was available.
10, PP has selected similar companies in power section to calculate beta.
11, the PP has corrected the calculation and taken 11.5% as loan interest. This is taken from DPR and lower and conservative.

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 04/09/2012

The response from PP was found satisfactory for the above queries, however;

1. The PP has not provided date when NCDMA was notified about the project.
2. Traceability of DPR is not clear in PDD and in IRR sheet as well, please provide defence of DPR with page no. etc for each input value.
3. The biomass type does not match with the one mentioned in section A.2 of the PDD. Please clarify? Section A.2 mentions wild grass and section B.5 mentions paddy waste. Please clarify this inconsistency

4. Source of adoption of MAT rate is not found to be consistent. Please clarify
5. The value of benchmark as per the values in the PDD comes to 12.27% as compared to the benchmark sheet which has a value of 13.00%. Please clarify the inconsistency in Cost of Debt in PDD and benchmark sheet. PDD mentions it as 10.71%. Benchmark sheet as 12.25%. It is unclear as to why benchmark (WACC) in the benchmark sheet is not linked to any other cell in the sheet and is direct calculation
6. PP has to clarify the #Div/0! and #Num! Errors in the excel sheet of IRR and subsequently in the PDD
7. How the assessment period of 20years correct with the project lifetime of 25yrs. Please clarify.

Acceptance and Close out by Lead Assessor: Open	**Date:** 23/11/2012
Project Participant Response:	**Date: 12/12/2012**

1. The date of communication to NCDMA is delineated in PDD
2. The details of page number referred from DPR is now provided in PDD
3. The wild grass was mistakenly put in the PDD. Paddy waste shall be used and the same has been delineated in the PDD
4. Reference of MAT rate has been made consistent
5. The benchmark calculation has been modified and the benchmark is further reduced to 12.30%. A 5 year beta has been calculated using the covariance of selected power generating companies, companies with a listing period of nearly 5 years before the decision date are chosen for calculation, with respect to the BSE 500 index. The same is delineated in the PDD.
6. The #Div/0 and #Num values are due to high negative values which the excel is unable to process and reflect
7. The project lifetime is 20 years and not 25 years. The same may be cross checked with the certificate provided by the technology supplier. The lifetime is updated in the PDD

Documentation Provided as Evidence by Project Participant:

Revised PDD version 06 dated 04/12/2012, revised benchmark and IRR calculation sheet date 11/12/2012

Information Verified by Lead Assessor:

1. The PP has provided date of communication to NCDMA in revised PDD.
2. The details of page number referred from DPR is now provided in PDD, however the same is not followed in IRR calculation sheet.
3. The PP has removed wild grass from the PDD. The PP will not use wild grass the same has been checked from DPR.
4. The source of MAT is made consistent to http://www.itaxindia.org/2011/10/income-tax-rates-companies-ay-2012-13.html
5. The formula (Cost of equity)*(Equity%) + (Cost of debt)*(Debt%)*(Marginal tax rate)) is not followed in benchmark calculation sheet.moreover the PP hastyped the value in formula instead of connecting the cells.
6. The reason of displaying #Div/0 and #Num values are due to negative value.
7. Certificate of technology supplier is not provided.

Reasoning for not Acceptance or Acceptance and Close Out:

1. The PP did not provided traceability of DPR, please provide the same with appropriate evidence. Also insert page number in IRR calculation sheet where the value has been referred from DPR.
2. The formula (Cost of equity)*(Equity%) + (Cost of debt)*(Debt%)*(Marginal tax rate)) is not followed in benchmark calculation sheet.moreover the PP hastyped the value in formula instead of connecting the cells.
3. Please provide error free excel sheets i.e #Div/0 and #Num free excel sheet.
4. Certificate of technology supplier is not provided.
5. The PP shall further justify the suitability of the input values to the benchmark, in particular, beta value given that it is not clear how the PP has validated that the risk of 8 companies used to calculate the assumed beta can be considered similar to risk that would face by the project activity. Please refer to para 14 & 15 of EB62-Annex 5.
6. The considered project cost used for calculation of Project IRR as IDC has been involved in project cost while calculating project IRR, this is not in line with requirement set out in para 9 of EB62 Annex 5. Please clarify
7. The PP is requested to provide evidence to confirm the interest rate was from the latest available information at the time of decision making.
8. The PP is requested to clarify Why Only 11 years data has been considered to calculate a benchmark

comparable to financial indicator calculated for 20years investment period?
9. The PP is requested to mention D/E ratio used to calculate WACC in separate cell and link WACC calculation.
10. Please mention benchmark value in % .
11. The PP is requested to clearly why torrent power is excluded from beta calculation

Acceptance and Close out by Lead Assessor: Open	**Date:** 04/01/2013
Project Participant Response:	**Date: 11/02/2013**

1. The reference of DPR along with the page numbers is now delineated in the PDD as well as IRR sheet.
2. The same formulae (Cost of equity)*(Equity%) + (Cost of debt)*(Debt%)*(Marginal tax rate) has been applied in the benchmark sheet. For more clarity PP has put all the assumptions in the sheet and linked the assumptions with the calculations.
3. This is not an error. The formulae for senstivity is same for all the values. In many cases where excel is not able to calculate the values, in case of "#Div/0" the calculation of IRR contains near zero as denominator and in case of "#Num" the excel is not able to iterate the value to an accurate result and these figures appear which is normal.
4. The lifetime certificate from technology supplier is attached for reference
5. It has been clearly delineated on page 13 of the PDD (1st paragraph of under heading "Beta value" that the *"The Beta value taken for this analysis is based on the beta values of the listed power companies engaged in similar business as the project activity i.e. power generation".* Since these are the companies which existed in the power generation arena and were listed on BSE index, the beta returns of these companies were considered for comparison.
6. The guidance referred does not allow PP to consider cost of financing as expense. In line, PP has not considered any interest paid during the project operation for IRR calculation. However, IDC is an expense which is made during the construction period and is not a part of project financing (during operation phase of plant). Also, as per financial practice it is included in project cost.
7. The prime lending rate as per the database of Reserve Bank of India is between 11% - 12% (http://www.rbi.org.in/scripts/WSSView.aspx?Id=14896). The average of the extreme values was considered for calculation to ascertain the cost of debt.
8. The data of the BSE-500 has been considered since inception till the date of Board decision. Since, the data was only available for little over 11 years, the same was considered for benchmark calculation.
9. The benchmark sheet is accordingly updated to transparently highlight the debt and equity component for the project cost
10. The figure is now represented in %
11. Torrent power got listed on BSE index in Nov 2006. Due to this, 5 year data for the company was not available for calculation and hence has not been considered.

Documentation Provided as Evidence by Project Participant:

Revised PDD version 07, revised IRR sheet and benchmark calculation sheet, letter from technology supplier regarding life time.

Information Verified by Lead Assessor:

1. The PP has provided page number of DPR as reference in the PDD where it was required.
2. The PP have provided link to the formula.
3. It has been checked that "#Div/0" and "#Num" are appeared where IRR is going to be decreased. For example -10% reduction in generation or +10% increases in project cost, therefore in those cells IRR is significant below to bench mark. Point is closed
4. The PP has provided certificate from technology supplier, life time of project has been verified 20 year.
5. The PP has selected the company in similar business. All are power generating company.
6. Response from PP is not in line to para 9 of EB62 Annex 5.
7. The PP has provided evidence for the prime lending rate and it is as per Reserve bank of India.
8. PP has not considered data comparable to the considered investment period to confirm suitability and comparability of considered benchmark in doing so please refer para 112 and 114 of VVM.1.2.
9. Bench mark sheet has been updated and mentioning debt and equity component for the project cost.
10. The PP presented benchmark value in %
11. The PP has selected company for which the 5 years data available. This is not likely scenario for Torrent power, the same has been checked from http://www.torrentpower.com/pdfs/torrentpower_ltd.pdf.

Reasoning for not Acceptance or Acceptance and Close Out:	
1. The considered project cost used for calculation of Project IRR as IDC has been involved in project cost while calculating project IRR, this is not in line with requirement set out in para 9 of EB62 Annex 5. Please clarify. 2. The PP is requested to clarify Why Only 11 years data has been considered to calculate a benchmark comparable to financial indicator calculated for 20years investment period, please refer para 120 and 121 of VVS. ver 03.	
Acceptance and Close out by Lead Assessor: Open	**Date: 13/02/2013**
Project Participant Response:	**Date:** 19/02/2013
1. IDC has now been removed from the calculation of the project IRR to meet the requirement of the para 9 of EB62 Annex 5. 2. The PP had earlier considered BSE-500 index for the calculation of market return that serves as an input parameter for the WACC calculation. Since, only 11 year data of BSE-500 was available till the board decision date (BSE-500 index came into existence in 1999), PP had considered the same for calculation. However, PP has now considered data of BSE-Sensex for a period of 20 years to calculate the market returns. As a result the benchmark considered for the project activity has reduced from 12.30% to 11.46% but the project activity still remains additional as the IRR calculated is 5.53% which is well below the benchmark considered for the project activity	
Documentation Provided by Project Participant:	
Revised PDD ver 07, and revised ER sheet, benchmark sheet and IRR sheet.	
Information Verified by Lead Assessor:	
The PP used BSE sensex as index for the benchmark calculation. The PP has removed IDC from the calculation of project IRR.	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 09/03/2013
1. IDC has been removed hence acceptable. Closed 2. There is Ref error in the benchmark sheet and benchmark sheet still mentions BSE500 as the used index. In the PDD section B.5 still BSE500 mention. OPEN During further assessment it was found that the point no 5 mentioned in CAR above has not been addressed, please refer the comment dated 13/02/2012 “PP has not applied provision of sec 80IA correctly, PP is requested to revise tax calculation by correctly applying sec 80IA and carry forward of losses u/s 72”. PP needs to take into account the tax benefit available to the project as cash inflow. OPEN CAR 06 OPEN	
Acceptance and Close out by Lead Assessor: Open	**Date:** 09/03/2013
Project Participant Response:	**Date:** 14/03/2013
1. The data taken for benchmark calculation is from BSE-Sensex and not BSE – 500. It was a typographic mistake which has been revised in the updated PDD documents and Benchmark Calculation Sheets attached for reference. 2. Further, PP has not at all considered the benefit under sec 80IA of Income Tax act. The 80IA benefit of the Income Tax can only be claimed for a period of ten consecutive years in the period of first 15 years of operation and that too only when the cumulative profit from the business of electricity generation becomes positive after charging accelerated depreciation or the cumulative depreciation charged can be entirely absorbed/written off in the books against profit accrued of other profit making divisions of the company but to avail the benefit of Section 80IA, the electricity generation business has to still be able to absorb the entire depreciation charged. Since, neither of the situations are applicable to the project activity, i.e. the cumulative profit remains negative throughout lifetime of the project activity and PP is solely involved in the business of producing electricity from biomass and there is no other business in the company, the benefit under the clause 80IA of Income tax cannot be claimed. Hence, PP is in conformity with the requirements under section 80IA and 72 of the Income tax act.	
Documentation Provided by Project Participant:	
Revised PDD version 08, revised benchmark calculation sheet dated 14/03/2013	
Information Verified by Lead Assessor:	
Revised PDD version 08, dated 18/04/2013 and revised benchmark calculation sheet dated 14/03/2013 was checked by the assessment team,	

"The PP has not applied provision of sec 80IA correctly, however the PP was requested to revise tax calculation by correctly applying sec 80IA and carry forward of losses u/s 72". The PP needed to take into account the tax benefit available to the project as cash inflow.	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 05/04/2013
The Response from the PP was not found in line to para 39 of "Tool for the demonstration and assessment of additionality" version 07. Hence CAR 06 is opened. The PP is therefore requested to provide following; 1. Tax benefit due to allowed accelerated depreciation: PP is required to submit verifiable documentary evidence in response to its claim, the document should clearly mention nature of company, sponsor of SPV, control and consolidation approach. In doing so, please also refer para 120 a of VVS version 06.0. 2. Please justify why capital subsidy available for biomass power projects from Government of India Ministry of New & Renewable Energy Biomass Power Division, has not been considered in calculation of IRR in doing so please refer para 39 of "Tool for the demonstration and assessment of additionality" version 07. 3. Wheeling charges: As this is export to grid (No third party sale) please justify wheeling charges considered while calculating project cash flow. 4. Sensitivity Analysis: Please clarify why Total cost of fuel has not been considered in sensitivity anlaysis, in doing so please refer para20, 21 of EB62 annex 5.	
Acceptance and Close out by Lead Assessor: Open	**Date:** 05/04/2013
Project Participant Response:	**Date:** 18/04/2013
1. Project Participant is an SPV working only for the development of Biomass based power plants. (Balance sheet of PP for last three years is already shared with the validation team which clearly demonstrates that there is no other source of revenue in last three years apart from certain interest generated from the fixed deposits. Also, the balance sheets do not make a mention of the company being a subsidiary of a firm as required under law for any subsidiary. This clearly states that PP is not a subsidiary of any other firm and is a standalone company). The company was taken over by the current promoters in the year 2009 for development of power projects (Please refer clause A.1 of the MOA submitted to DOE). Subsequently, the decision for its first power plant (project activity) was taken on 25/06/2010. Now, since PP is an SPV and the depreciation benefit is not getting absorbed in the first 15 years of operation due to generated revenue PP is not able to claim the tax benefit specified under Section 80IA of the Income tax act. Further, since PP is SPV the provision of adjusting losses in the early years of operation is also not an option as PP does not have any other business stream. **2.** The subsidy benefit available for biomass power projects is now included in the IRR calculation. **3.** As per the Haryana Electricity Regulatory Commission Order dated 06/11/2009 (http://herc.gov.in/orders/pdf/2009/20091106.pdf) 2% of the revenue shall be charged as wheeling charges irrespective of the distance from the grid. Moreover, the wheeling charges have been mentioned in the PPA signed for the project activity and it delineates that wheeling charges shall be applicable for the project activity in line with the latest HERC order. (Copy of the relevant pages of the PPA are sent to the validation team through courier) 4. The total cost of the fuel is now subjected to sensitivity analysis of the project IRR. However, please note that the tariff calculated for the project activity is linked to the biomass price in the market, i.e. any rise in the total cost of fuel (biomass) will automatically result in the increase of tariff price thus compensating for the positive sensitivity in the fuel cost. Similarly, any decrease in fuel cost will lead to a lower tariff thus resulting in an insignificant impact on the project IRR.	
Documentation Provided by Project Participant:	
Balance sheets of PP for the year 2010-11, 2011-12	
Information Verified by Lead Assessor:	
Balance sheets of PP for the year 2010-11, 2011-12 was checked by the assessment team.	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 25/07/2013
The justification provided by PP was found to be correct and was accepted by the assessment team. However this CAR was further re opened as- 4. It is unclear how 365 days operation is correct. Will the power plant never have scheduled	

maintenance shutdown?

5. Further,

vii. Please provide source for subsidy considered.
viii. Value of base IRR and results obtained after applying variations under sensitivity analysis is not consistent with IRR sheet.
ix. Please clarify about the increasing trend of biomass price as mentioned in section B.5 of the PDD. PP is requested to provide publicly available and verifiable documentary evidences to support this.
x. PP is requested to clarify the statement, "Also, any increase in tariff order shall be accompanied with increase in the price of the bagasse which ultimately will compensate for the increase in IRR. Kindly provide a documentary evidence to justify the argument as mentioned in the PDD.
xi. The escalation in biomass price has been sourced from DPR as 6%. However, the escalation as mentioned in the HERC Order dated 06/11/2009 is 5%. PP is requested to justify the conservativeness of the assumption made.
xii. Also provide all purchase order of equipments placed, and CA certificate for the total project cost. Further, PP is also requested to provide a legible copy of the signed PPA.

6. For the sensitivity analysis, PP is requested to correctly justify how,
   - vi. 10% decrease in project cost
   - vii. 10% decrease in biomass price
   - viii. 10% increase in electricity tariff
   - ix. 10% increase in electricity generation
   - x. 10% decrease in total fuel cost is not a likely scenario in this project activity. As in all these 5 scenarios, the IRR of the project activity crosses the benchmark value.

CAR open

Project Participant Response:	**Date: 13/09/2013**

1. PP has considered 80% PLF for the project activity which reflects the outage due to the scheduled maintenance. Moreover, considering higher number of operational days is a conservative approach while calculating IRR as it increases the IRR.
2.

i) A letter from REC clearly making a mention of the amount of subsidy granted to the project activity under MNRE scheme is enclosed

ii) The base IRR value and the results obtained after applying sensitivity are updated in PDD to maintain conformity with the IRR sheet
iii) Actual bills of biomass purchased for the project activity are enclosed for reference
iv) The prices are decided as per HERC order which takes into account a number of parameters to determine the tariff price including the price of biomass. Therefore, any increase in the price of tariff shall automatically be accompanied by or even driven by the increase in price of biomass
v) Please refer the actual receipts of biomass purchased for the project activity. It clearly depicts that the escalation in the prices of biomass are much more than 6% on year-on-year basis.
vi) The CA certificate for total project cost is already provided with DOE

3. The sensitivity analysis section has clearly earmarked that there is no possibility of benchmark being preached in the project activity

Documentation Provided as Evidence by Project Participant:

Revised PDD, version 09, dated 13/09/2013

Information Verified by Lead Assessor:

Revised PDD, version 09, dated 13/09/2013 was checked by the assessment team.

Reasoning for not Acceptance or Acceptance and Close Out:

1. The PLF and no of operating days was checked from DPR (page no 63) of the project activity. This was found to be correct and was accepted by the assessment team. Closed.
2. (i) The letter from REC, dated 22/10/2012 was checked by the assessment team and was found to be acceptable. Closed.

(ii) The base IRR value and the results obtained after applying sensitivity are updated in PDD to maintain conformity with the IRR sheet. This was checked and was accepted by the assessment team. Closed.
(iii) The increasing trend was validated by checking the actual biomass purchase receipt, dated 19/04/2012,

provided by PP which confirms the current price of biomass what PP is paying . However no assessment report /survey/ literature provided to justify the trend as requested. Open
(iv) The justification provided by PP was found to be acceptable. Closed.
(v) The justification provided by PP was found to be correct and was accepted by the assessment team. Closed.
(vi) PP has provided only the balance sheet. No CA certificate on project cost has been provided. Further, PP has submitted the following contract document-
CONTRACT FOR SUPPLY, dated 16/03/2013- total price is INR 314.8 Million
CONTRACT FOR CIVIL & STRUCTURE WORK, dated 17/03/2013, total price is INR 51 Million
CONTRACT FOR ERECTION & COMMISSIONING, dated 18/03/2013, total price INR 23 Million
These three document is unable to justify the total project cost of INR 526.94 Million, as assumed in the IRR sheet. PP is requested to justify the project cost.
Further PP has not provided a legible copy of the signed PPA and the links provided in the IRR sheet for depreciation rates are now working, PP is requested to correct the same. CAR open

3. This part of the CAR is pending due to the point 2(vi). CAR open.

Project Participant Response:	**Date: 01/11/2013**

2 (iii) As per the order passed by the hon'ble Appellate Tribunal for Electricity, dated 18/08/2009, the cost of biomass in Haryana has been considered as Rs. 2039/Tonne for the purpose of determining tariff with respect to biomass based electricity generation. This clearly reflects that the biomass price in the state is increasing.

Further, PP is already paying a higher cost to procure biomass for the project activity. PP has already provided receipt of biomass purchased for the project activity to the validation team which clearly reflects that PP is paying higher cost of biomass than INR 1600 per MT as envisaged at the project conception stage in the IRR calculation.

2 (vi) CA Certificate for the project activity highlighting the expenditure towards project is enclosed for perusal. The certificate clearly reflects that the project cost has already exceeded the envisaged expenditure in the DPR. This would result in further reduction in the IRR of the project activity in comparison to the one considered in the PDD.

Further, a clear scan of the signed PPA is enclosed for reference.

3. Please refer to the response given in the above point.

Documentation Provided as Evidence by Project Participant:

NA

Information Verified by Lead Assessor:

Haryana Electricity Authority Regulatory Commission (http://herc.gov.in/orders/pdf/2009/20091106.pdf)

Reasoning for not Acceptance or Acceptance and Close Out:

2 (iii) The document referred by PP could not be traced. CAR open.
(vi) The total project completion cost was checked from the CA certificate for the project cost. The completed cost of the project activity is INR 712.83 Million, which is higher than the estimated project cost of INR 526.94 Million. Thus the assumption made by PP was found to be correct and was accepted by the assessment team. Closed.
The PPA between PP and the Haryana Power Purchase Centre, dated 22/06/2012 was checked by the assessment team and was found to be satisfactory.
However, PP did not submit an revised IRR sheet, including correct link for depreciation rates. CAR open.
3. This point is open due to the above two points. CAR open.

Project Participant Response:	**Date: 19/11/2013**

2 (iii) Please refer page 16 of the document verified by the team (http://herc.gov.in/orders/pdf/2009/20091106.pdf). The same order is referred by the HERC while passing the order on 06/11/2009. The order clearly mentions that the price of biomass is taken as 2039 INR/MT.

(vi) IRR sheet with revised link for depreciation values is attached for reference.

3. Please refer to the responses in the above point.

Documentation Provided by Project Participant:	
Revised PDD, version 11, dated 19/11/2013	
Information Verified by Lead Assessor:	
Revised PDD, version 11, dated 19/11/2013 was checked by the assessment team.	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date: 03/12/2013**

2. (iii) The assessment checked the biomass price from HARYANA ELECTRICITY REGULATORY COMMISSION order dated 06/11/2009. The price of biomass as per the order is INR 2039 /MT. This price was compared against the price considered in the investment analysis sheet by the PP. The price considered in the investment analysis is INR 1600/MT, as per the Detailed Project Report of the project activity, dated April 2008, prepared by Resurgent India Limited (RIL). The assessment team observed that the price of biomass is continuously increasing over the years, as evident from the HERC order. The price of biomass was further confirmed from actual biomass purchase payment voucher as provided by the PP. As per the actual payment voucher the price of biomass is INR 2400/MT. The price of biomass was also confirmed from the MNRE capital subsidy letter issued by REC to the PP, letter dated 22/10/2012, ref number REC/CO/Ren./Haryana/Starwire. As stated in the letter cost of biomass at site is INR 2300/MT. Thus the assessment team is of the opinion that the price of biomass is continuously increasing and there are remote chances of a decrease in biomass prices. Thus accepted. Closed.

(vi) The web links provided in the IRR sheet was checked by the assessment team. It was found to be appropriate and was accepted. Closed.

3. This point is closed as the point 2(iii) was satisfactorily addressed by the PP. closed

The PP is requested to justify why no information has been provided in the IRR sheet as well as in the PDD regarding the #Div/0! And #NUM! error. Open

Acceptance and Close out by Lead Assessor: Open	**Date: 03/12/2013**
Project Participant Response:	**Date: 23/01/2014**
The justification is now included in the IRR calculation sheet. The IRR sheet is attached for reference.	
Documentation Provided by Project Participant:	
IRR sheet and revised PDD, version 11, dated 27/01/2014	
Information Verified by Lead Assessor:	
IRR sheet and revised PDD, version 11, dated 19/11/2014 was checked by the assessment team	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date: 28/01/2014**

The PP has included a justification note in the PDD and also in the IRR sheet stating the reason, why the #Div/0! And #NUM! error is showing in the IRR sheet. This was checked by the assessment team and was found to be acceptable and the issue was closed. CAR 06 closed.

Acceptance and Close out by Lead Assessor: closed	**Date: 28/01/2014**

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	07	Reference:	B.6

Lead Assessor Comment:

3. In section B.2 of the webhosted PDD, it has been stated that the project activity utilizes only the renewable biomass like mustard crop residue, Julia flora, etc., in accordance with Annex 18 of EB 23. While in section B.6 of the webhosted PDD the approach 1 mentions the use of fossil fuel for the project activity. PP is requested to further clarify.
4. Please provide the detailed emission reduction sheets in excel format, mentioning all the references for the input values in it.
5. Please provide all the documentary evidences and the calculations in an excel sheet for the determination of the leakages for the project activity as mentioned in section B.6 of the PDD.

Project Participant Response: **Date:** 08/07/2011

1. Project activity shall be utilizing only the renewable biomass like mustard crop residue, Julia flora, etc for the power generation at the project site and the PP do not envisage the use of fossil fuel in the project activity. However, in unavoidable circumstances the PP may use some miniscule amount of fossil fuel to avoid shutdowns. Therefore, the same has been mentioned in the PDD, but the section B.6 is modified in accordance with referred methodology.
2. Emission reduction sheet is enclosed for your perusal
3. The leakage calculation is delineated in the emission calculation sheet itself.

Documentation Provided by Project Participant:

Revised PDD version 02 dated 20/07/2011

Information Verified by Lead Assessor:

Revised PDD version 02 dated 20/07/2011

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 08/08/2011

1. Ok, the project activity will utilize only the renewable biomass and the fossil fuel will be utilised for the emergency purpose to avoid the shutdowns. However, PP is requested to mention the name of the fossil fuel that will be used during emergency situations to avoid the shutdowns. Open.
2. The emission reduction sheet has not been submitted. Please submit. Open.
3. The emission reduction sheet is awaited. Open.

Hence, the CAR#07 is kept open.

Project Participant Response: **Date:** 10/12/2011

1. The project activity shall involve use of renewable biomass for power generation. However, in certain unforeseen/unavoidable situations PP may resort to use of coal for start-up or power generation for smaller period of time to avoid shutdown. In such case project emissions shall be taken into account for the amount of coal burnt in the plant. The calculation methodology for the same is delineated in the PDD in accordance with the referred methodology.
2. The emission reduction sheet is enclosed as Annexure – 5 for your ready reference.
3. The emission reduction sheet is enclosed as Annexure – 5 for your ready reference.

Documentation Provided by Project Participant:

Revised PDD version 03 dated 10/12/2011

Information Verified by Lead Assessor:

Revised PDD version 03 dated 10/12/2011

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 28/12/2011

1. OK, in case of exigencies or in unavoidable situations coal will be used as an alternate fuel for the project activity. It has now been mentioned in section B.6.1 of the PDD. Furthermore, PP is requested to explain and document transparently in the CDM-PDD the quantities and types of biomass and the biomass to fossil fuel ratio (in case of co-fired system) to be used during the crediting period and for the selection of the baseline scenario, an ex ante estimation of these quantities should be also provided as per para 19 of the methodology AMS I. D. Version 17. Open.
2. PP has submitted the emission reduction calculation sheet. However, PP is requested to use use a 3-year generation-weighted average simple OM instead of arithmetic average of the simple OM of last three years. Furthermore, please provide sources of all the assumptions used in the emission reduction sheet. Open.
3. As per para 22 of the methodology AMS I. D. version 17, the leakage is to be considered if the energy

generating equipment is transferred from another activity. Since, this project activity is a new project activity and does not involve the transfer of the equipments from another project activity. Hence, no leakage has been considered. To be on safer side, PP has calculated the leakage for the transportation of the biomass as per the 'General guidance on leakage in biomass project activities' in the PDD and the ER calculation sheet, where the source of all the input parameters are not provided. Hence, PP is requested to provide the source of all the assumptions in the ER calculation sheet for the calculation of the leakage. Open. Hence, the CAR#07 is still open.
Project Participant Response: **Date:** 14/02/2012
1. The project activity shall not be a co-fired system and shall only use biomass as the fuel for generating power. In accordance with MNRE guideline, which takes into account 15% of fossil fuel usage for start-up and exigency purpose, the PP shall use coal. Therefore, since this is not a regular fuel the ex-ante estimation for the same is not applicable. 2. The emission factor is now calculated using a 3 year generation weighted average simple OM. Also, the references for the values are also delineated in the sheet 3. The PP has removed the leakage emission calculation to be in line with the methodology requirement and to avoid confusion.
Documentation Provided by Project Participant:
Revised PDD version 4 dated 14/02/2012
Information Verified by Lead Assessor:
Revised PDD version 4 dated 14/02/2012
Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 29/02/2012
1. Biomass to fossil fuel ratio is required for the co-fired systems; however the quanties and types of biomass to be used during the crediting period need to be explained and documented transparently in the PDD as per para 19 of the methodology AMS I. D. Version 17. So, please provide the details of the quantities and types of the biomass to be used during the crediting period of the project activity. PP is also requested to refer the clarification request number SSC_563 while responding to this issue. Open. 2. Some of the cells (e. g. Cell no. G5 in 'electricity' worksheet) in the ER calculation sheet are not showing the values. Please submit the amended ER calculation sheet. Open. 3. PP is requested to consider the leakage from the project activity in accordance with EB 47, Annex 28 and the clarification request number SSC_575 and SSC_563. Open. The CAR#07 is still open.
Project Participant Response: **Date:** 05/07/2012
1. The project activity is not a co-fired project. The quantities and types of biomass are now delineated in the PDD **2.** The ER sheet is suitably modified and enclosed for your reference. **3.** The leakage is not considered in the project activity as the latest version of methodology applied requires PP to consider leakage only in case of transfer of equipment from another activity.
Documentation Provided by Project Participant:
Revised PDD version 05, revised ER calculation sheet
Information Verified by Lead Assessor:
Revised PDD version 05, dated – 05/07/2012 and revised ER spread sheet sheet
Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 04/09/2012
1. The project activity is not a co-fired system. Project activity will use don biomass as a fuel; PP has mentioned the type of biomass used in project activity. It has been checked from section B.7.1 of revised PDD and found correct. closed 2. PP has sent revised ER calculation sheet, the same has been checked and found correct. 3. Since there is surplus biomass available for this project activity leakage due to competitive use of biomass is not applicable for this project activity. As per AMS ID version 17 leakage is not applicable to this project activity. Closed However, this CAR was further re opened as- PP is requested to clarify why the specific dates are chosen to calculate ER e.g. 15/02/2013 to 14/02/2014.

Project Participant Response:	**Date: 13/09/2013**
The dates have been revised in the PDD.	
Documentation Provided as Evidence by Project Participant:	
Revised PDD, version 09, dated 13/09/2013	
Information Verified by Lead Assessor:	
Revised PDD, version 09, dated 13/09/2013 was checked.	
Reasoning for not Acceptance or Acceptance and Close Out:	
PP has revised the dates for crediting period; this was checked and was found to be correct by the assessment team. CAR closed.	
Acceptance and Close out by Lead Assessor: closed	**Date: 13/09/2013**

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	08	Reference:	B.7

Lead Assessor Comment:

7. PP has mentioned the accuracy class of the energy meters as 0.2s/0.5s in section B.7.1 of the PDD. Please specify exactly whether 0.2s or 0.5s accuracy class energy meters will be used.
8. Please specify the authorized laboratories for the determination of NCV of the biomass as mentioned in section B.7 of the webhosted PDD.
9. The monitoring procedure of the fossil fuel and the coal is not clear. Kindly provide the project specific monitoring procedure.
10. The monitoring procedure for the moisture content of the biomass residues has not been described as per para 22 of the methodology AMS I. D. version 16 in the section B.7.1 of the webhosted PDD. Please mention it.
11. Please ensure that the monitoring procedure is inline with the para 22 of AMS I. D. version 16, specifically the column 'Measurement Methods and Procedures'.
12. Please mention the calibration frequency of the meters in accordance with General Guidelines to SSC CDM methodologies (Annex 9 of EB 59) and Annex 60 of EB 52.
13. Please provide the copy of the biomass assessment report as per para 18 of Annex 28 of EB 47.

Project Participant Response:	**Date:** 08/07/2011

1. Since, the plant has not commissioned till date, PP was not sure whether to go for an accuracy of 0.5s or 0.2s. However, the same has now been identified and subsequently modified in section B.7.1 of the PDD.
2. PP is still to identify the authorised laboratories in the vicinity of the project plant. However, PP is determined to go only for a NABL certified laboratory for NCV determination to have reliable results for the plant performance.
3. The PP does not envisage utilizing any fossil fuel in the project activity. However, to address the unavoidable situations where fossil fuel may be used a monitoring procedure has been delineated in the PDD and the same is now modified to bring in more clarity.
4. The monitoring procedure for moisture content of the biomass is now described in the section B.7.1 of the PDD.
5. Section B.7.1 has been modified in line with paragraph 22 of AMS I.D, version 16
6. The calibration frequency of the monitoring meters is modified to be in line with the Annex 60 of EB 52
7. A copy of the biomass assessment report is enclosed for your perusal.

Documentation Provided by Project Participant:

Revised PDD version 02 dated 20/07/2011

Information Verified by Lead Assessor:

Revised PDD version 02 dated 20/07/2011

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 08/08/2011

1. Ok, 0.5s accuracy class energy meter will be used for the monitoring of the net electricity export to the grid and the same has been incorporated in section B.7.1 of the PDD
2. OK, the NCV of the biomass fuel will be determined in the NABL certified laboratories as required by para 24 of the methodology AMS I.D. version 16.
3. OK, the fossil fuel will be utilised only at the time of emergency situations to avoid the shutdowns. However, all the parameters to determine the emission reductions of the fossil fuel consumed as per EB 41, Annex 11 have not been mentioned in section B.7.1 of the PDD. PP is requested to incorporate all the parameters as per EB 41, Annex 11 in section B.7.1 of the PDD. Open.
4. The moisture content of the biomass need to be determined ex-ante as per para 24 of the methodology AMS I. D. Version 17. PP need to clarify accordingly. Open,
5. OK, the monitoring procedure is has been corrected inline with the para 24 of AMS I. D. version 17, in the revised PDD.
6. OK, the calibration frequency for the monitoring equipments has been mentioned in section B.7.1 of the PDD as per the requirement of EB 52 Annex 60
7. The copy of the biomass assessment report is awaited. Please submit. Open.

The CAR#08 is still open.

Project Participant Response:	**Date:** 10/12/2011
3. PP shall resort to use of coal in case of unforeseen/unavoidable circumstances in order to avoid shutdown. The parameters required to determine the project emissions, in case coal is used, are now included in the section B.7.1 of the PDD. 4. The project is still in commissioning phase. Therefore, the moisture content of the bagasse shall be determined in later stage when the plant becomes operational. 7. The copy of biomass assessment report is sent through courier.	
Documentation Provided by Project Participant:	
Revised PDD version 3 dated 10/12/2011	
Information Verified by Lead Assessor:	
Revised PDD version 3 dated 10/12/2011	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 29/12/2011
3. OK, the parameters to monitor the project emissions due to consumption of coal in case of exigencies have been included in section B.7.1 of the PDD. However, please include the value of the emission factor for the coal in the PDD for the determination of the project emissions. Open. 4. The moisture content of the biomass need to be determined ex-ante as per the para 24 and clarification request number SSC_563. Please include the moisture content of the biomass in the PDD. Open. **7.** The biomass assessment report has not been received. Kindly submit. Open	
Project Participant Response:	**Date: 14/02/2012**
3. As explained above the project activity shall utilize the coal in case of exigencies only and coal shall not serve as an alternate fuel. Moreover, MNRE considers use of fossil fuel up to 15% in a renewable energy project and PP shall maintain coal consumption well below 15%. Therefore, this shall not contribute towards project emissions. Hence, the parameters for determining project emissions due to coal consumption are being removed from the PDD. 4. The moisture content of the biomass shall be around 9.03%. This is taken on the basis of third party assessment of the biomass in the vicinity of the project activity and the same is delineated in the PDD.	
Documentation Provided by Project Participant:	
Revised PDD version 4 dated 14/02/2012	
Information Verified by Lead Assessor:	
Revised PDD version 4 dated 14/02/2012	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 29/02/2012
3. PP is requested to consider the project emissions due onsite fossil fuel consumption as per para 21 of the methodology AMS I. D. Version 17. Open. 4. PP is requested to submit the copy of third party assessment of biomass in the vicinity report to substantiate the moisture content (9.03%) as mentioned above. Open. **7.** The biomass assessment report has not been received. Kindly submit. Open	
Project Participant Response:	**Date:** 05/07/2012
3. The PP shall not be utilizing any fossil fuel at the project site and the auxiliary requirement shall be met from the project itself. Therefore, project emissions are not envisaged from the project activity. However, in case of fossil fuel consumption, PP shall account for the project emissions in the crediting period. 4. The third party analysis report highlighting a moisture content of 9.03% is enclosed. 7. The biomass assessment report is enclosed.	
Documentation Provided by Project Participant:	
Revised PDDD version 05, and revised IRR and bench mark calculation sheet.	
Information Verified by Lead Assessor:	
3, project activity will not use any onsite fossil fuel to generate power, thus this parameter is not required to be monitored. 4, the PP has submitted third party biomass assessment report. It is found that biomass moisture 9.03% has been considered. Moisture content is appropriate thus acceptable. 7, the PP has provided third party biomass report.	

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 04/09/2012
The response from the PP was found satisfactory thus all above points have been closed. However the PP is requested to clarify following; 1. During the plant shutdown what is the source of auxiliary consumption?? How is it met 2. Traceability of the third party assessment of biomass is unclear as to who has conducted the study. Has this report being certified by local nodal renewable energy generation agency, please also provide contact detail of third party. 3. Calibration responsibility is not specified in monitoring plan of PDD. 4. It seems that Net electricity exported by project activity in year, y is calculated parameter, however methodology required continuous measurement. Please clarify	
Acceptance and Close out by Lead Assessor: Open	**Date:** 23/11/2012
Project Participant Response:	**Date: 12/12/2012**
1. The plant shall be sourcing some electricity from grid in shutdown phase. The same shall be taken care by the monitoring parameter $EG_{facility,y}$ which monitors the net export, i.e. total export minus the total import 2. The biomass assessment report is prepared by a third party "MCJ Energy Engineers (P) Ltd". The same was presented to HAREDA also based on which approval of 9.9 MW was provided to the PP 3. The calibration of meters shall be carried out by a third party. The same is delineated in the PDD 4. The collation of data shall be done from continuously monitored values. The same is delineated in the PDD	
Documentation Provided as Evidence by Project Participant:	
Revised PDD version 06, dated 04/12/2012	
Information Verified by Lead Assessor:	
1. The PP will outsource electricity form grid during outage for plants auxiliaries. 2. The PP did not provide contact detail of third party who has conducted biomass assessment. 3. Calibration of meters will be done by third party 4. This parameter will be calculated from monitored parameters.	
Reasoning for not Acceptance or Acceptance and Close Out:	
1. The PP did not provide contact detail of third party who has conducted biomass assessment. The PP is also requested to provide biomass assessment report. 2. Cross check procedure of parameters Net electricity supplied and biomass consumption are not discussed as per methodology ASM ID version 17.	
Acceptance and Close out by Lead Assessor: Open	**Date:** 04/01/2013
Project Participant Response:	**Date: 11/02/2013**
1. Validation team has already closed the comments of not receiving biomass assessment report via response 05/07/2012 as mentioned above in this CAR. However, a copy of biomass assessment report is again attached. The contact detail of the third party that carried out the biomass assessment is given on the front page of the biomass assessment report. 2. The cross check procedures of parameters are now delineated in line with requirements mentioned in AMS-I.D, version 17	
Documentation Provided as Evidence by Project Participant:	
Revised PDD version 07, IRR and benchmark calculation	
Information Verified by Lead Assessor:	
1. The PP did not provide Biomass assessment report in response on dated on 11/02/2013 2. The PP has provided cross check requirement of net electricity export as per methodology AMS ID version 17.	
Reasoning for not Acceptance or Acceptance and Close Out:	
The requested to provide biomass assessment report as evidence.	
Acceptance and Close out by Lead Assessor: Open	**Date:** 13/02/2013
Project Participant Response:	**Date:** 19/02/2013
The biomass assessment report is enclosed for reference	
Documentation Provided by Project Participant:	
Biomass assessment report.	
Information Verified by Lead Assessor:	
The Biomass report has been prepared by third party named MCJ ENERGY ENGINEERS (P) LTD.	

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

The biomass report has been check and found correct thus CAR was closed.
This CAR was further reopened as-

- **i.** It is not clear whether NCV measurement for biomass being carried out on dry basis. Also the QA/QC procedure discussed is not in line with AMD I.D version 17.
- **ii.** It is not clear why the parameter "Moisture content of biomass" is included in section B.7.1, as per meth AMS I.D; it shall be fixed ex-ante. Also it is not clear how the value 9.03% is arrived for this parameter.
- **iii.** It is not clear what kind of fossil fuel expected to be consumed in project. Also clarify which option is preferred to calculate PE as per "**Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion"** and why all the parameters required to be monitored is not reported as per tool.
- **iv.** It is not clear with regard to the monitoring frequency whether it will be done electronically/manually. Also the monitoring is not clear with regard to archiving.
- **v.** What is meant by special meters as mentioned in the section B.7.1 of the PDD? How many meters are involved please clarify clearly.
- **vi.** What about auxiliary consumption of the plant? Also confirm, whether the parameter "$EG_{facility,y}$" is a measured one or a calculated one.

Project Participant Response:	**Date: 13/09/2013**

I. NCV measurement of biomass is carried out on dry basis
II. The calculation of moisture content is now fixed post first year of operation
III. Fossil fuel shall be used in the project activity. The same is mentioned in detail in the project activity
IV. The details of the monitoring is now further explained in the PDD
V. The special meters are a two way meters to measure both export and import from the project activity.
VI. The auxiliary consumption is considered in the calculation and is reflected in the PDD

Documentation Provided as Evidence by Project Participant:

PDD version 09, dated 13/09/2013

Information Verified by Lead Assessor:

PDD version 09, dated 13/09/2013 was checked by the assessment team.

Reasoning for not Acceptance or Acceptance and Close Out:

1. PP did not mention this in PDD. CAR open.
2. PP has mentioned the parameter "Moisture content of biomass" as ex-ante parameter, however, it is still not clear how the value 9.03% is arrived for this parameter. PP is requested to provide relevant supportive for this parameter. CAR open.
3. PP has not mentioned any steps to calculate project emissions under section B.6.1, further in section B.7.1, NCV for fossil fuel consumption has not been included. CAR open.
4. The details of monitoring has now been explained in section B.7.1 of the PDD. Closed.
5. Kindly specify the meter detail in section B.7.1 of the PDD. Description is not clear enough. CAR open.
6. Auxiliary consumption has not been considered in the PDD. PP is requested to include gross, export, import & Auxiliary consumption as monitored parameter. CAR open.

Project Participant Response:	**Date: 01/11/2013**

1. NCV analysis of biomass is done on dry basis. The same is now mentioned in the PDD.

2. The moisture content of biomass was analysed by a NABL accredited laboratory "Shriram Institute for Industrial research". The analysis resulted in moisture content of 11.91%. The same is updated in PDD and the parameter shall remain ex-ante. The certificate of the analysis is enclosed for reference.

3. The PP does not envisage usage of fossil fuel in the project activity. However, in case of unforeseen events, if the same is consumed in the project activity the same shall lead to project emissions. A step wise approach is now mentioned in section B.6.1 of the PDD to calculate these project emissions, if any.

Further, a monitoring parameter "NCV of the fossil fuel" is now included in the PDD to enable calculation of project emission, in case fossil fuel is used.

4. Comment already closed

5. The meter details are now mentioned in the section B.7.1 of the PDD. The scan of the meter details is also enclosed for reference.
6. Auxiliary consumption does not contribute to the emission reduction calculation hence the same is not monitored separately. However, two additional parameters are included in the PDD namely, $EG_{gross,y}$ (Gross electricity generated) and $EG_{gross\ export,y}$ (Gross electricity exported) to have more robust monitoring arrangement. The Gross electricity generated shall be monitored using a energy meter in the plant premises while the gross electricity exported shall be monitored at the interconnection point using an energy meter with accuracy 0.2s. Further, Net electricity exported shall be calculated by subtracting the electricity imports (If any) from gross electricity exported from the project activity.

Documentation Provided as Evidence by Project Participant:

Revised PDD, version 10, dated 01/11/2013

Information Verified by Lead Assessor:

Revised PDD, version 10, dated 01/11/2013 was checked by the assessment team.

Reasoning for not Acceptance or Acceptance and Close Out:

1. The details ("Measurement methods and procedures" & "QA/QC procedures") of the monitoring parameter **$NCV_{biomass,y}$** is not as per the applied methodology. CAR open.
2. The parameter "Moisture content of biomass" has now been included in the revised PDD. The third party (Shriram Institute for Industrial Research) provided test certificate (No- 00142270), dated 18/09/2009 was checked by the assessment team and was found to be satisfactory. The stated moisture content in the report is 11.91%. This was accepted by the assessment team. CAR closed.
3. PP is requested to include the project emission steps clearly in the PDD, including tool and version number. CRA open.
4. Already closed.
5. Meter details could not be checked. CAR open.
6. PP has not included import of electricity as monitored parameter. CAR open.

Project Participant Response:	**Date: 19/11/2013**

1. The details of measurement methods and QA/QC procedures of the monitoring parameter $NCV_{biomass,y}$ are now made in line with the applied methodology.
3. Steps to calculate project emissions are now clearly mentioned in the PDD along with reference to Tool used.
5. Meter details are not required in the PDD and hence are removed for now. The same shall be made available for check in the verification period. However, accuracy and type of meter is mentioned in the PDD.
6. Parameter related to Import of electricity is now included in the PDD

Documentation Provided by Project Participant:

Revised PDD, version 11, dated 19/11/2013

Information Verified by Lead Assessor:

Revised PDD, version 11, dated 19/11/2013 was checked by the assessment team.

Reasoning for not Acceptance or Acceptance and Close Out:	**Date: 03/12/2013**

1. The monitoring details of the parameter $NCV_{biomass,y}$ as mentioned in section B.7.1 of the revised PDD was checked by the assessment team. The PP has revised the PDD and the details (including QA/QC) mentioned in the revised PDD was found to be in line with the requirement of the monitoring parameter #8 of applied methodology AMS ID, version 17, under paragraph 24. Closed.
2. Already closed.
3. The PP has revised the section B.6.1 of the PDD, version 11, dated 19/11/2013. The steps to calculate project emission is now consistent with EB 41, Annex 11. This was checked and was found to be correct by the assessment team. Closed.
4. Already closed.
5. The meter details as mentioned in the section B.7.1 of the PDD was checked by the assessment team and was found to be satisfactory. Closed.
6. Electricity import from the grid by the project activity has now been included under section B.7.1 of the revised PDD, version 11, dated 19/11/2013. This was checked by the assessment team and was found to be correct. Closed.

Acceptance and Close out by Lead Assessor: closed	**Date: 03/12/2013**

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	09	Reference:	C.1, C.2

Lead Assessor Comment:

3. The section C.1.1. of the PDD mentions 01/04/2011 as the start date of the project activity. Kindly provide the supporting documents for the same inline with para 67 of EB 41.
4. Please provide the documentary evidences for the expected operational life time of 20 years of the project activity as mentioned in section C.1.2 of the webhosted PDD.

Project Participant Response: **Date:** 08/07/2011

1. The start date was initially not fixed and has been revised in the PDD.
2. Technical detail provided along with the purchase orders delineates the lifetime of the project equipment as 20 years. On the basis of the same, the PP is envisaging a lifetime of 20 years for the project activity.

Documentation Provided by Project Participant:

Revised PDD version 02 dated 20/07/2011

Information Verified by Lead Assessor:

Revised PDD version 02 dated 20/07/2011

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 08/08/2011

1. 01/04/2011 has been mentioned as the start date of the project activity. Kindly submit the evidences for the same as per para 67 of EB 41. Open.
2. PP is requested to submit the purchase orders of the project activity to substantiate the technical details as mentioned in the PDD and the technical lifetime of the project activity. Open.

The CAR#09 is still open.

Project Participant Response: **Date:** 10/12/2011

1. The start date of the project activity was tentatively mentioned as 01/04/2011 as the PP had not made any significant financial commitment at that time. However, the date is now revised to 16/03/2011 as the first purchase order for supply of independent biomass based power plant equipment was placed on that day. The purchase order placed is enclosed for ready reference of DOE as Annexure – 4.
2. The purchase order placed for supply of independent biomass based power plant equipment is enclosed for ready reference of DOE as Annexure – 4.

Documentation Provided by Project Participant:

The purchase order placed for supply of independent biomass based power plant equipments as Annexure – 4.

Information Verified by Lead Assessor:

The purchase order placed for supply of independent biomass based power plant equipments as Annexure – 4.

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** 29/12/2011

1. OK, the start date of the project activity has been considered as 16th March, 2011 based on the purchase order placed for the plant and the machinery to M/s. Isgec John Thompson on 16th of March, 2011. This is the earliest date on which the real action for the implementation begins and thus, the starting date of the project activity is found to be in line with para 67 of EB 41. Closed.
2. The purchase orders for the plant and machinery, the contract for civil and structural work and for erection and commissioning signed with Isgec John Thompson and the proposal for design, engineering, supply and civil work of independent biomass based power plant from Isgec John Thompson have been submitted. However, the evidence for the technical life time of the project activity as mentioned in section C.1.2 of the PDD is not provided. Kindly provide. Open

Project Participant Response: **Date:** 14/02/2012

The certificate for technical lifetime of the project equipment are provided by the technology supplier. The same is enclosed for the reference.

Documentation Provided by Project Participant:

Revised PDD, ER calculation sheet and IRR sheet,

Information Verified by Lead Assessor:

Revised PDD, version 4, dated 14/02/2012 was checked by the assessment team
ER calculation sheet and IRR sheet was also checked by the assessment team,
PP has not provided certificate

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 29/02/2012
2. The certificate for technical lifetime of the project activity has not been provided. PP is requested to provide the same. Open.	
Project Participant Response:	**Date:** 05/07/2012
Since, the project is a Greenfield project, the technical lifetime of the project activity can be safely assumed to be 25 years, i.e. of both boiler and STG, in line with "Tool to determine the remaining lifetime of equipment", Annex 15, EB 50.	
Documentation Provided by Project Participant:	
Revised PDD, ER calculation sheet and IRR sheet,	
Information Verified by Lead Assessor:	
Revised PDD, version 05, dated 005/07/2012 was checked by the assessment team. ER calculation sheet and IRR sheets were also checked,	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 04/09/2012
PP refer default value of remaining life time form "Tool to determine the remaining lifetime of equipment", Annex 15, EB 50. Which is in line to procedure and accepted.	
Acceptance and Close out by Lead Assessor: closed	**Date:** 04/09/2012

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	10	Reference:	D.2

Lead Assessor Comment:

1. Please provide the environmental Impact Assessment report for the project activity as mentioned in section D.2 of the webhosted PDD.

Project Participant Response:	**Date:** 08/07/2011

[Note to PP: Insert your Response to SGS Finding here]

Documentation Provided by Project Participant:

The project activity is a renewable energy project and does not under the purview of Environment Impact Assessment notification 2009. Therefore, EIA was not carried out for the project activity.

Information Verified by Lead Assessor:

Revised PDD version 02 dated 20/07/2011

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 08/08/2011

1. The response is not inline with the description made in section D.1 and D.2 of the PDD. PP is requested to further clarify. Open.

The CAR#10 is still open.

Project Participant Response:	**Date:** 10/12/2011

1. The Project activity is not required to carry out an Environment Impact Assessment as per the Environment Impact Assessment Notification (http://envfor.nic.in/legis/eia/so1533.pdf)vide S.O.1533 dated 14/09/06 and its subsequent notification in 2009. Therefore, the section D.1 and D.2 of the PDD are suitably modified.

Documentation Provided by Project Participant:

Revised PDD version 03 dated 10/12/2011

Information Verified by Lead Assessor:

Revised PDD version 03 dated 10/12/2011

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 29/12/2011

OK, as per the Environment Impact Assessment Notification vide S.O.1533 dated 14/09/06, this biomass based project activity does not require the environment impact assessment prior to implementation of the project activity. However, the justification provided in section D.1 of the PDD i.e. “project activity being less than 20 MW does not require EIA to be conducted according to this notification” is not correct. Kindly amend it appropriately.

Hence, the CAR#10 is still open.

Project Participant Response:	**Date: 14/02/2012**

As per the latest notification issued by the government on 1st December 2009, EIA is required to be conducted for biomass based projects with capacity of equal or more than 20 MW. Since, the project activity is 9.9 MW the EIA is not required to be conducted. The same is now delineated in the PDD.

Documentation Provided by Project Participant:

Environmental Impact Assessement Notification-2009

Information Verified by Lead Assessor:

Environmental Impact Assessement Notification-2009

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 29/02/2012

OK, the EIA is not required for the biomass power project activities with capacity below 20 MW as per the Environmental Impact Assessement Notification-2009. The same has been incorporated in the PDD. Thus, CAR#10 has been closed satisfactorily.

Acceptance and Close out by Lead Assessor: closed	**Date:** 29/02/2012

Date:	07/05/2011		Raised by:	Assessment Team	
Type:	CAR	Number:	11	Reference:	E.1. E.2 & E.3

Lead Assessor Comment:

1. Please provide the summary of the local stakeholders comments as given in the minutes of local stakeholder meeting dated 15/10/2010 in section E.2 of the PDD as per para 129 of the VVM version 1.2 and report in section E.3 of the PDD how due account was taken of the comments received.

Project Participant Response:	**Date:** 08/07/2011

1. A summary of the local stakeholder comments as given in the minutes of stakeholder meeting dated 15/10/2010 is delineated in the section E.2 of the PDD. Section E.3 is also modified suitably.

Documentation Provided by Project Participant:

Revised PDD version 1.2 dated 20/07/2011

Information Verified by Lead Assessor:

Revised PDD version 2 dated 20/07/2011

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 08/08/2011

1. The summary of the local stakeholder comments have been provided in section E.2 of the PDD. There were no adverse comments received as per the minutes of local stakeholder consultation meeting dated 15/10/2010.

Hence, the CAR#11 has been closed satisfactorily.

CAR #11 Reopened_23/04/2014:

1. Please clarify why the monitoring frequency of the parameter "**$FC_{biomass,PJ,y}$" & "$NCV_{biomass,y}$"** not reported as per the applied methodology.

Please clarify why the sampling plan as mentioned in section B.7.2 of the PDD not discussed as per the latest sampling guideline available in UNFCCC website?

Acceptance and Close out by Lead Assessor: Reopened	**Date:** 08/08/2011
Project Participant Response:	**Date:** 25/04/2014

Monitoring frequency of the said parameters has been revised in line with the methodology Sampling plan is not applicable for the project. Same has been updated in the revised PDD.

Documentation Provided by Project Participant:

PDD version 13, dated 25/04/2014

Information Verified by Lead Assessor:

PDD version 13, dated 25/04/2014 was checked by the assessment team.

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 01/05/2014

1. The section B.7.1 of the revised PDD version 13, dated 25/04/2014 was checked by the assessment team and was found to be correct. Closed.
2. The section B.7.2 was revised by the PP. The project monitoring does not involve any sampling. 100% of the data will be monitored. This was checked by the assessment team and was found to be correct. Closed.

The CAR is re opened on 27/05/2014:

4. Page 2 footnote 1 and page 34: web link is not working. Also please clarify why the version number of methodology AMS I.D is not mentioned at Page 16 and Page 18 of PDD.
5. Section B.6.4: Table containing the CERs does not use the standard format for number and commas. Please clarify
6. Section C.2.2: Start date of crediting period is not in line with the paragraph 62 of PS version 06.

Project Participant Response:	Date: 28/05/2014
1. The web link on page 2 has been updated while the web link on page 34 has been deleted as it was not necessary. 2. The format for number and commas has been updated in the table of Section B.6.4 3. The start date has been updated in Section C.2.2 and section B.6.4 is also updated accordingly.	
Documentation Provided by Project Participant:	
PDD version 14, dated 28/05/2014	
Information Verified by Lead Assessor:	
PDD version 14, dated 28/05/2014 was checked by the assessment team.	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** 28/05/2014
The revised PDD submitted by the PP was checked and was found to be correct. Closed.	
Acceptance and Close out by Lead Assessor: closed	**Date:** 28/05/2014

Date:	23/04/2014		Raised by:	Assessment team	
Type:	FAR	Number:	12	Reference:	-
Lead Assessor Comment:					
As the project activity was not implemented during the validation site visit (conducted on 18/02/2011), hence a FAR is raised to check the appropriateness of the implementation and use of monitoring equipments during first periodic verification. This is in line with the requirement of para 27 of VVS version 06.0.					

A.4 Annex 4: Team Members Statements of Competency

Name: Ravi Kant Soni

Status

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

Scopes of Expertise

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

Approved Member of Staff by: Siddharth Yadav Date: 12/10/2012

Name: Ahmed Rekibuddin

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)
Technical Area(s)*:*

2. Energy Distribution
Technical Area(s)*:*

3. Energy Demand
Technical Area(s)*:*

4. Manufacturing
Technical Area(s)*:*

5. Chemical Industry
Technical Area(s)*:*

6. Construction
Technical Area(s)*:*

7. Transport
Technical Area(s)*:*

8. Mining/Mineral Production
Technical Area(s)*:*

9. Metal Production
Technical Area(s)*:*

10. Fugitive Emissions from Fuels (solid, oil and gas)
Technical Area(s)*:*

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride
Technical Area(s)*:*

12. Solvent Use
Technical Area(s)*:*

13. Waste Handling and Disposal
Technical Area(s)*:*

14. Afforestation and Reforestation
Technical Area(s)*:*

15. Agriculture
Technical Area(s)*:*

Approved Member of Staff by: Siddharth Yadav Date: 02/11/2012

Name: Sauvik Banerjee

Status

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

Scopes of Expertise

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

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

Name: Chandra Prakesh Singh

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)

Technical Area(s)*:*

2. Energy Distribution

Technical Area(s)*:*

3. Energy Demand

Technical Area(s)*:*

4. Manufacturing

Technical Area(s)*:*

5. Chemical Industry

Technical Area(s)*:*

6. Construction

Technical Area(s)*:*

7. Transport

Technical Area(s)*:*

8. Mining/Mineral Production

Technical Area(s)*:*

9. Metal Production

Technical Area(s)*:*

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

Technical Area(s)*:*

11. Fugitive Emissions from Production and

Consumption of Halocarbons and Sulphur Hexafluoride

Technical Area(s)*:*

12. Solvent Use

Technical Area(s)*:*

13. Waste Handling and Disposal

Technical Area(s)*:*

14. Afforestation and Reforestation

Technical Area(s)*:*

15. Agriculture

Technical Area(s)*:*

Approved Member of Staff by: Siddharth Yadav Date: 29/10/2013

Name: Shivaji Chakraborty

Status

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

Scopes of Expertise

1. Energy Industries (renewable / non-renewable) **x**

Technical Area(s*):*

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

TA 1.2 Energy generation from renewable energy sources

2. Energy Distribution **x**

Technical Area(s*): TA 2.1 Electricity distribution*

TA 2.2 Heat distribution

3. Energy Demand **x**

Technical Area(s*): TA 3.1 Energy Demand*

4. Manufacturing

Technical Area(s*):*

5. Chemical Industry

Technical Area(s*):*

6. Construction

Technical Area(s*):*

7. Transport

Technical Area(s*):*

8. Mining/Mineral Production

Technical Area(s*):*

9. Metal Production

Technical Area(s*):*

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

Technical Area(s*):*

11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride

Technical Area(s*):*

12. Solvent Use

Technical Area(s*):*

13. Waste Handling and Disposal

Technical Area(s*):*

14. Afforestation and Reforestation

Technical Area(s*):*

15. Agriculture

Technical Area(s*):*

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