VALIDATION REPORT
THE SIMBHAOLI SUGAR MILLS LIMITED

VALIDATION OF THE
SSML-SIMBHAOLI BIOMASS POWER PROJECT

REPORT NO. INDIA-VAL/76.49/2007
REVISION NO. 02

BUREAU VERITAS CERTIFICATION

VALIDATION REPORT

Date of first issue:	Organizational unit:
16/04/2007	Bureau Veritas Certification Holding SA
Client:	**Client ref.:**
The Simbhaoli Sugar Mills Limited	Vikas Rungta

Summary:

Bureau Veritas Certification has made the validation of the SSML-Simbhaoli Biomass Power Project a project of The Simbhaoli Sugar Mills Limited located in Simbhaoli, District Ghaziabad, State of Uttar Pradesh, India on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology ACM 0006 and version 04 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Report No.:	Subject Group:
INDIA-val/76.49/2007	CDM

Project title:
SSML-Simbhaoli Biomass Power Project

Work carried out by:
K.H.Sharma- Team Leader
H.B.Muralidhar- Team Member & Power Sector Specialist
Sushil Budhia-Financial Expert from Sushil Budhia & Associates, Mumbai

Work verified by:
Name of the ICC member
Ashok Mammen

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Indexing terms

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VALIDATION REPORT

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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO_2	Carbon Dioxide
DOE	Designated Operational Entity
GHG	Green House Gas(es)
I	Interview
IETA	International Emissions Trading Association
MoV	Means of Verification
NGO	Non Government Organization
PCF	Prototype Carbon Fund
PDD	Project Design Document
UNFCCC	United Nations Framework Convention for Climate Change
BMS	BVQI HOLDING S.A. Management System
BVC	Bureau Veritas Certification India Private Limited
CEA	Central Electricity Authority
CH_4	Methane
CL	Clarification Request
CO_2	Carbon Dioxide
DIS	Draft of International Standard
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organisation for Standardization
MP	Monitoring Plan
DSCL	DCM Shriram Consolidated Ltd.
NRLDC	Northern Region Load Distribution Center
SSML	Simbhaoli Sugar Mills Limited

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1 INTRODUCTION

The Simbhaoli Sugar Mills Limited has commissioned Bureau Veritas Certification to validate its CDM project SSML-Simbhaoli Biomass Power Project (hereafter called "the project") at Simbhaoli, District Ghaziabad, State of Uttar Pradesh, India.

This report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of 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 a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

1.2 Scope

The validation scope 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.

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.

1.3 GHG Project Description

The project activity of SSML-Simbhaoli Biomass Power Project is the expansion of electricity generation capacity of the Simbhaoli Sugar Mills Limited (SSML) plant located at village Simbhaoli, District Ghaziabad in the state of Uttar Pradesh, India.

The SSML-Simbhaoli Biomass Power project involves installation of a new high-pressure (87 kg/cm2) 110 TPH capacity boiler and new 22 MW backpressure type turbo generator. The subject project activity, primarily aims to generate power and steam for the captive consumption in sugar mill purposes, along with export of surplus electricity to Uttar Pradesh Power Corporation Limited (UPPCL) grid. The export of electricity thus would reduce GHG emissions by replacing fossil fuel dominated grid based electricity with a renewable source of electricity.

Bagasse will be fired in the boiler to generate steam, which in turn will power the steam turbine to generate electricity.

SSML – Simbhaoli Sugar Mill is energy independent as it has co-generation for its captive steam and power requirement. The Simbhaoli Sugar Mills Limited also exports 2.2 MW of electricity to regional grid but has not claimed CDM credits for this electricity export to the grid. The present captive steam and power requirement of the sugar unit is met by this cogeneration plant comprising of four boilers and three turbines.

By displacing the electricity from fossil fuel based electricity-generating systems, total estimated GHG reduction from the project activity is expected to be 446,820 t of CO2e per year.

The category of the project activity is in Scope 1 – Energy industries (renewable - / nonrenewable sources). The approved and applied baselines and monitoring methodologies are ACM0006 / Version 04 “Consolidated baseline methodology for grid-connected electricity generation from biomass residues” and ACM0002 / Version 06 “Consolidated baseline methodology for zero-emissions grid-connected electricity generation from renewable sources”.

Project start was on October 01, 2005. The fixed crediting period of 10 years should start on July 01, 2007.

1.4 Validation team

The validation team consists of the following personnel:

K.H.Sharma
Bureau Veritas Certification Team Leader, Climate Change Verifier

H.B.Muralidhar
Bureau Veritas Certification Climate Change Verifier

Sushil Budhia

Financial Expert from Sushil Budhia & Associates, Mumbai

Ashok Mammen
Bureau Veritas Certification, Internal reviewer

2 METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the Validation and Verification Manual (IETA/PCF). The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

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

The validation protocol consists of five tables. The different columns in these tables are described in Figure 1.

The completed validation protocol is enclosed in Appendix A to this report.

Validation Protocol Table 1: Mandatory Requirements			
Requirement	**Reference**	**Conclusion**	**Cross reference**
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (**OK**), a **Corrective Action Request (CAR)** or a **Clarification Request (CL)** of risk or non-compliance with stated requirements. The CAR's and CL's are numbered and presented to the client in the Validation Report.	Used to refer to the relevant protocol questions in Tables 2, 3 and 4 to show how the specific requirement is validated. This is to ensure a transparent validation process.

Validation Protocol Table 2: Requirements checklist				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in several sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	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 (**OK**), 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.

Validation Protocol Table 3: Baseline and Monitoring Methodologies				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The various requirements of baseline and monitoring methodologies should be met. The checklist is organized in several sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	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 (**OK**), 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.

Validation Protocol Table 4: Legal requirements				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The national legal requirements the project must meet.	Gives reference to documents where the answer to the checklist question or item is found.	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 (**OK**), 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.

Validation Protocol Table 5: Resolution of Corrective Action and Clarification Requests			
Report clarifications and corrective action requests	**Ref. to checklist question in tables 2/3**	**Summary of project owner response**	**Validation conclusion**
If the conclusions from the Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Tables 2, 3 and 4 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the validation team should be summarized in this section.	This section should summarize the validation team's responses and final conclusions. The conclusions should also be included in Tables 2, 3 and 4, under "Final Conclusion".

Figure 1 Validation protocol tables

2.1 Review of Documents

The Project Design Document (PDD) submitted by The Simbhaoli Sugar Mills Limited and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (CDM-PDD), Approved methodology, Kyoto Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests The Simbhaoli Sugar Mills Limited revised the PDD and resubmitted it on April, 2007.

The validation findings presented in this report relate to the project as described in the PDD version 04.

2.2 Follow-up Interviews

On 23/11/2006 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of The Simbhaoli Sugar Mills Limited were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
The Simbhaoli Sugar Mills Limited	• Commitment of organisation towards GHG emission reduction and awareness about CDM • Evidence of date of starting of project activity and CDM consideration • Checking the records of procurements of critical equipments such as Boilers & Turbines • Discussions on additionality and related evidences • Operation and maintenance management and structure • Power Purchase Agreements with state electricity board • Record keeping and QA/QC of data for GHG related information • Sensitivity towards local stakeholders and actions on their comments • Compliance of applicable Monitoring methodology • Barriers, IRR and confirmation of information • Project activity conformance with PDD details, • Calculations for GHG calculations, project emissions and emission reduction • Calibration of monitoring equipment • Proposed plan for GHG audits and review • Responsibility and authority of various persons • Governmental clearances and compliances
LOCAL Stakeholder	Interaction towards satisfaction of local stakeholders with respect to information sharing on CDM, infrastructure development and change in working conditions if any.

CONSULTANT	• Additionality, Baseline, Monitoring plan • Discussions on additionality and related evidences • Base line emissions and the emissions reduction

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

To guarantee the transparency of the validation process, the concerns raised are documented in more detail in the validation protocol in Appendix A.

3 VALIDATION FINDINGS

In the following sections, the findings of the validation are stated. The validation findings for each validation subject are presented as follows:

1) The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Validation Protocol in Appendix A.
2) Where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in twelve Corrective Action Requests and thirty Clarification Requests.
3) The conclusions for validation subject are presented.

3.1 Project Design

- Bureau Veritas Certification recognizes that The Simbhaoli Sugar Mills Limited's SSML-Simbhaoli Biomass Power Project is helping country fulfill its goals of promoting sustainable development. The project is expected to be in line with host-country specific CDM requirements because it
- is a grid-connected bagasse based cogeneration power plant using configuration of a high-pressure steam boiler and backpressure type turbine.

- is the expansion of electricity generation capacity and the installation of facilities for allowing the export of electricity to the regional grid. The project involves the installation of a new 22MW backpressure type turbo generator, along with a high pressure (87 kg/cm2) 110 TPH capacity boiler. The boiler is bagasse fired travelling grate boiler connected with the 22 MW backpressure turbines. The power generated from the turbine will be utilised for captive consumption and the surplus power will be exported to the grid. Electric Power will be generated at 11 kV and stepped-up on-site to 132 kV before being transmitted to the nearby UPPCL sub-station located at Simbhaoli.
- Project design is efficient and the used technology prevalent in Indian conditions is comparatively mature. The technology employed is modern and proposes the use of automatically controlled processes and equipments.
- The geographical (the project location) boundaries of the project are clearly defined as indicated in the applicable methodology.
- The cogeneration plant will be installed within the premises of the SSML-Simbhaoli. Bagasse storage will take place adjacent to the cogeneration plant. During the visit on site the given information has been confirmed.
- The historic electricity generation is relevant for the determination of baseline emissions; the respective data is included in the PDD.

- The lifetime of the project technology is predicted to be 20 years and it unlikely that the key technology applied will be substituted by other or more efficient technologies within the crediting period of 10 years.
- The project creates additional employment during the installation as well as in operation and maintenance of the project activity. During the site visit interactions competency of the staff has been confirmed to ensure an optimized operation.
- All necessary permissions, consents and licenses for erection and operation of the plant have been verified.

Validation team has a view that this proposed project activity of generating and transferring the power by use of bagasse is environment friendly process of reducing the GHG emissions. It is observed during the site visit that the technical arrangements, management and expertise are evident to effectively attain the GHG emission reduction after the commissioning of the said project.

Official Development Assistance (ODA) does not contribute to the financing of the project.

Both, the starting date as well as the crediting period is clearly defined. A fixed crediting period of 10 years is applied that should start on 15.05.2007 or on the date of registration whichever is later.

The Project Scenario is considered additional in comparison to the baseline scenario, and therefore eligible to receive Certified Emissions Reductions (CERs) under the CDM, based on an analysis, presented by the PDD, of investment, technological and other barriers, and prevailing practice.

The project design is sound and the geographical (Simbhaoli, District Ghaziabad, Uttar Pradesh, India) and temporal (20 years) boundaries of the project are clearly defined.

CAR-2
Unique identification of the project activity such as plot number/ khasra no. is not indicated in PDD.
Resolution:
Khasra number for the project activity site has been now provided in PDD. CAR is closed.

3.2 Baseline and Additionality

The SSML-Simbhaoli Biomass Power Project uses the approved consolidated baseline methodology ACM 0006, Version 4 "Consolidated baseline methodology for grid connected electricity generation from biomass residues".

The above methodology is applicable to grid connected and biomass residue fired electricity generation project activities, including cogeneration. The methodology requires:

"*The installation of a new biomass residue fired power generation unit, which replaces or is operated next to existing power generation capacity fired with either fossil fuels or the same type of biomass residue as in the project plant (power capacity expansion projects)*"

This is evident as the proposed project activity is the expansion of grid-connected bagasse based electricity generation capacity involving the installation of facilities for allowing the export of electricity to the regional grid. The project involves the installation of a new 22MW backpressure type turbo generator, along with a high pressure (87 kg/cm^2) boiler of 110 tonnes per hour (TPH) capacity, which will operate next to the existing biomass residue power generation unit fired with the same biomass residue. The power generated by the new power unit will be utilized for the sugar unit's captive power consumption purposes and the surplus power will be exported to the grid. The project activity involves reductions in CO_2 emissions by displacing the electricity generation from the fossil fuel dominated grid with renewable electricity.

Further,

No other biomass types aside from biomass residues, as defined in consolidated baseline methodology ACM0006 will be used in the project plant.

The proposed project activity is the expansion of grid-connected bagasse based electricity generation capacity. The existing and newly installed turbo-generators will be fired by bagasse, a byproduct of the sugarcane processing and a biomass residue as defined in consolidated baseline methodology ACM0006.

The biomass residue to be used in the cogeneration plant will be supplied from the same facility, where the project is implemented.

The present bagasse generation capacity at the SSML plant in Simbhaoli is sufficient enough to meet the fuel requirement of the new modernized unit during the season as well as during the off-season period. The season and off-season operating days of the new cogeneration unit are chosen on the basis of in-house bagasse generation capacity of the sugar mill. Hence, the project activity will use bagasse produced within the sugar unit only.

The implementation of project will not result in an increase of the cane processing capacity of the sugar factory.

The SSML Simbhaoli unit is only planning to increase its electricity generation capacity without any change in the cane processing capacity of the sugar mill. Hence, the project activity has no direct-or indirect influence on the processing capacity of the sugar factory.

The biomass residue at the project facility will not be stored for more than one year.

As mentioned earlier, the number of operating season and off-season days of the new cogeneration unit is chosen on the basis of in-house bagasse generation capacity of the sugar mill. Hence, the project activity is designed to use all the bagasse generated in the sugar mill. Hence, the residue will not be stored at the project facility for more than one year.

No significant energy quantities are required to prepare the biomass residues for fuel combustion.

Bagasse is burnt in boilers as generated form the sugar mill and does not require any specific technology for its preparation before combustion. No fuel preparation equipment has been installed at site for preparation of bagasse. Hence no significant energy quantities are required to prepare the biomass residues for fuel combustion.

The project activity covers all the applicability conditions for the methodology.

The possible alternative baseline scenarios are the following:

(a) Proposed project activity without CDM;

(b) Continuation of the current situation i.e. export of 2.2. MW electricity with no CDM credits

The baseline options considered do not include those options that:

- do not comply with legal and regulatory requirements; or
- depend on key resources such as fuels, materials or technology that are not available at the project site.

The most economically attractive alternative among the alternatives mentioned above has been selected as the baseline scenario, since such alternative is not expected to face any prohibitive barriers that could have prevented it from being taken up as the project activity.

CARs and CLs and their resolution/conclusion applicable to baseline

CAR-3 & CAR-4 & CAR-5

Application of "Consolidated baseline methodology for grid connected electricity generation from biomass residues". ACM0006, detailed justification and appropriateness is indicated to be as per Version no. 3. Current version 4 is to be considered.

Resolution:

Current version 04 of ACM 0006 has been considered in total. Applicability, justification and appropriateness have been established. Change of scenario has been effected considering the new version 4.

CAR-6

There are no national policies and circumstances relevant to the baseline of the project activity summarised. These need be described or referred in PDD.

Resolution:

There are no national policies relevant to the baseline. Sugar factories in India are not required to install high-pressure boilers for grid based electricity generation. There is no policy in India that mandates the generation of electricity for grid supply from bagasse. This has been mentioned in section B.5. of PDD.

3.3 Monitoring Plan

The Project uses the approved consolidated monitoring methodology ACM 006 Version 4. Refer discussions on the validity of the methodology at section 3.2 above.

The adopted monitoring methodology has been chosen based on the following reasons:

- Proposed project activity is a grid-connected and *biomass residue* fired electricity generation project activities,

The project activity includes the installation of a new biomass residue fired power generation plant at a site where installation of a new biomass residue fired power generation unit, which is operated next to existing power generation capacity fired with the same type of biomass residue as in the project plant.

- The project activity is based on the operation of a power generation unit located in an agro-industrial plant generating the biomass residues.
- No other biomass types than *biomass residues*, as defined above, are used in the project plant and these biomass residues are the predominant fuel used in the project plant

- the implementation of the project does not result in an increase of the processing capacity of raw input (e.g. sugar, rice, logs, etc.) or in other substantial changes (e.g. product change) in this process;
- The biomass residues used by the project facility should not be stored for more than one year;
- No significant energy quantities, except from transportation or mechanical treatment of the biomass residues, are required to prepare the biomass residues for fuel combustion,

It is further confirmed that the other applicability conditions indicated in methodology for the combinations of project activities and baseline scenarios identified in Table 1 are being met.

CARs and CLs and their resolution/conclusion applicable to monitoring plan.

CAR-7

QA/QC procedures are not referred or explained.

Resolution:

The QA/QC procedures have been outlined in section B.7.1. and CAR closed.

CAR-9 & CAR-10

Monitoring methodology ACM 0006 called 'Consolidated monitoring methodology for grid connected electricity generation from biomass residues' version 3 Date 19May 2006 is used. Applicability for current version is required.

Monitoring Plan is not as evident in current version of methodology. Inclusion and exclusion of various parameters and the justification need be evaluated during site visit interactions. Monitoring Plan indicated as Annex 4 is left blank and no justification for it is evident.

Resolution:

The monitoring of the proposed project activity has been assured to be as per ACM 0006 version 4, 2 November 2006. Since there is no additional information required to be mentioned, this is left blank.

CAR-11

Authority and responsibility related to project management, registration, monitoring, measurement and reporting and the procedures related to operational management of project activity is not referred or described in PDD.

Resolution:

The management of the plant will designate one person to be responsible for the collation of data as per the monitoring methodology. The designated person will collect all data to be monitored as mentioned in this project design document (PDD) and will report to the head of the plant. The overall CDM project management responsibility will remain with the Plant Head. This has been mentioned in section B.7.2 of the PDD.

Discussion on the additionality (use of tool) arguments used in the PDD and validators opinion:

PDD describes the stepwise description of additionality tool of current version. A CAR was raised to consider the applicability of ACM 0006 version 4 for the tool for demonstration and assessment of additionality. It is ensured by validators that all steps of the tool are indicated with practical and genuine descriptions applicable in the host country and the circumstances prevailing. This was confirmed during interactions with consultant and the organisation representatives. Organisation has chosen the route of Step 2 of investment analysis and IRR produced by project proponent was thoroughly evaluated by the financial experts, a member supporting the validation team. Validators have ensured that the project cost and its constituents are correct. The detailed working by financial analyst considering the best practices of finance resulted in increase of IRR value without CDM benefits from initially produced of 8.4% to 10.04%. Sensitivity analysis carried out by Project participants was evaluated for the constancy in PPA tarrif after 4 years and if the same is allowed to escalate at the rate in existing PPA. This is indicated in the excel sheet Simbhaoli Financials 130407 attached. Validators have checked the power tarrif in PPA signed between the State Electricity Board and SSML-Simbhaoli. Since increase in Power tariff after the period identified in PPA is not assured, this is considered an existing institutional barrier and important critical parameter for sensitivity analysis. Calculations indicated in Simbhaoli Financials 130407 correctly indicate the effect of escalation in price of power on IRR, which increased from 10.04% to 10.54%. DOE has also evaluated sensitivity on PLF at a value of -10% of indicated PLF (90%) and at maximum PLF achieved so far. IRR at 80% PLF is 7.19% and at 93% the PLF is 10.86%. DOE has validated the maximum value of PLF as 93% evaluating previous trends of utilization. Validators have assured that the IRR without CDM benefits is lower than the Benchmark from available published information of Bank lending rates. Reference of this is indicated in the PDD. The IRR considering the CDM benefits has gone up to 14.34%.

Project Scenario is considered additional in comparison to the baseline scenario, and therefore eligible to receive Certified Emissions Reductions (CERs) under the CDM, based on an analysis, presented through the Version 4 of revised PDD.

The revised PDD Version 04 dated April 05, 2007 clearly explains how the project is additional and is not part of the baseline scenario.

The application of the baseline methodology is transparent and conservative and the project complies with the baseline requirements.

3.4 Calculation of GHG Emissions

As per “Consolidated methodology for grid-connected electricity generation from biomass residues” ACM 0006 Version 4, the baseline emission sources considered are inserted as appropriate.

As required under **"Consolidated methodology for grid-connected electricity generation from biomass residues"** , the baseline emissions are calculated by considering the baseline emission sources are power plants connected to the relevant electricity system (grid). The relevant grid considered for the calculation of baseline emissions is the Northern region grid and not the state or the National grid. The reason for such exclusion of the latter grids is that in the host country i.e. India the control of electric supply is through regional grids. This decision is used subsequently for data compilation of regional grid participants and deciding the future planning. The detailed algorithms are described later under sections B.6 of the PDD.

For the purpose of determining the baseline emissions only CO_2 emissions from fossil fuel fired power plants connected to the electricity system are included.

No GHG emissions from the project activity are included in the project boundary.

The project activity also does not include any GHG emissions related to the decomposition or burning of biomass nor does it claim for emission reductions from heat. The baseline heat emissions for the proposed project activity are not included in the project boundary as permitted in the consolidated methodology ACM0006 Version 04, 2 Nov 2006.

As described in **"Consolidated methodology for grid-connected electricity generation from biomass residues" ACM 0006 Version 4** , the project emissions result due toCO_2 emissions from transportation of biomass residue to the project site, CO_2 emissions from on-site consumption of fossil fuels due to project activity, CO_2 emissions from electricity consumption at the project site that is attributable to the project activity and CH_4 emissions from combustion of biomass.

The proposed project activity doesn't include the CO_2 emissions from off-site transportation of biomass, from fossil fuel co-firing and from electricity consumption at site. The project activity also doesn't include the CH_4 emissions from the combustion of biomass. Hence, project emissions are considered zero.

"Consolidated methodology for grid-connected electricity generation from biomass residues"

With reference to this methodology, project doesnot lead to any leakage. Under baseline scenario 12 the diversion of biomass residue to the project activity is already considered in the calculation of the baseline reductions in ACM0006 Version 04 and hence as per methodology leakage issues is not addressed.

The estimated annual average of approximately 446,820 tCO2e over the crediting period of emission reduction represents a reasonable estimation using the assumptions given by the project.

The PDD clearly defines the project's spatial boundaries and the identification of baseline and project emissions is clearly demonstrated as per version 4 of ACM0006

The projects components are clearly defined and described in the revised PDD version 04. During the visit on site the indicated information in PDD has been confirmed.

Details on the assumptions for the emission reduction calculations have been submitted and the formulae used are correctly applied.

Data for electricity production (EGhistoric) during the crushing season 2003-2004, 2004-2005 and 2005-06 has been validated by DOE. Evidence for the same has been provided to the validation team.

Emission reductions or increase due to the displacement of heat is concluded to be zero as the heat efficiency of boilers of project activity is demonstrated to be higher than existing boilers.

With reference to scenario 12 of methodology, project does not lead to any leakage.

3.5 Sustainable Development Impacts

No significant environmental impacts have been identified from the project activity and this is in line with sustainable development policy guidelines of host country.

BVQI HOLDING S.A. recognises that SSML-Simbhaoli Biomass Project is helping India fulfill its goals of promoting sustainable development in line with host-country specific CDM requirements because it -

- Contributes towards meeting the electricity supply deficit in the state of Uttar Pradesh through the control of Northern Region Grid
- Improves micro-economic efficiency of the power sector through improved availability
- Avoids GHG emissions from fossil fuel burning
- Generates direct and indirect jobs in project maintenance

The legislation does not require an EIA. It is not expected that the project will create adverse environmental effects. Transboundary effects are also not expected.

No harm to the ecological environment is envisaged and Organisation is complying with relevant statutory environmental norms and has been provided with the relevant consent by State Pollution Control Board.

In view of positive environmental impact, contribution towards the country's goal of sustainable development improvement in quality of life of most of the local population, the development and implementation of systems for installation and commissioning of Bagasse based electricity generation and export of the generated power were recommended by The Simbhaoli Sugar Mills Limited management. The project does comply with the environmental legislation and the company has obtained the relevant consents from the Uttar Pradesh Pollution Control Board.

CL-17

Section F.1 (Section D & E wrongly indicted as Section F & G) of PDD describes the environmental impacts, which are positive. It indicates that no negative environmental impacts are identified. Air emissions, Solid Waste disposal and discharge to water are described are indicated to be as per State Pollution Control Board norms. Ash disposal not discussed in the PDD

Resolution:

The ash generated will be used for land filling purposes and approval for the same is evident from Pollution Control Board consent.

3.6 Comments by Local Stakeholders

Local stakeholder consultation meeting to discuss stakeholder concerns on the proposed Clean Development Mechanism (CDM) project – SSML-Simbhaoli Biomass Power Project at The Simbhaoli Sugar Mills Limited was held at time on 19/06/2006 at Simbhaoli Sugar Mills Limited, Simbhaoli, District Ghaziabad, State Uttar Pradesh, India.

List of participants including representatives from local community, comprising of cane growers, participants, notice inviting participation to interested stakeholders, photographic record of the stakeholder meeting proceedings is maintained by the project participants.

Approximalty 25-30 people attended the meeting. The meeting was called upon through a notice in the local newspaper, informing stakeholders that the project will be undertaken and inviting comments. The other stakeholders consulted are Uttar Pradesh Pollution Control Board and Uttar Pradesh Power Corporation Ltd.

A national stakeholder review has been done by getting the approval form Ministry of Environment and Forests, the Designated National Authority.

The stakeholders viewed SSML-Simbhaoli Biomass Power Project as contributing to local environmental benefits and socio-economy. Overall, there was agreement that the project activity was a beneficial project from the local sustainable development. The local stakeholders interviewed during the site visit of the validation activity endorsed these views.

4 Comments by Parties, Stakeholders and NGOs

According to the modalities for the Validation of CDM projects, the DOE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available.

Bureau Veritas Certification published the project documents on the UNFCCC CDM website (http://cdm.unfccc.int) on 01/10/2006 and invited comments within 30/10/2006 by Parties, stakeholders and non-governmental organizations.

Comments were not received from any person.

5 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of the SSML-Simbhaoli Biomass Power Project in India. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Project participant/s used the latest tool for demonstration of the additionality. In line with this tool, the PDD provides analysis of investment, bagasse availability due to cane diversion, technical and other barriers to determine that the project activity itself is not the baseline scenario.

By synthetic description of the project, the project is likely to result in reductions of GHG emissions partially. An analysis of the investment and technological barriers demonstrates that the proposed project activity is not a likely baseline scenario. Validators have evaluated Sensitivity analysis related to PPA price and the effect is found correctly applied and calculated. It indicates the fall in IRR from 10.54% to 10.04% if power tarrif is not escalated after 4 years. DOE has also evaluated sensitivity on PLF at a value of -10% of indicated PLF (90%) and at maximum PLF achieved so far. IRR at 80% PLF is 7.19% and at 93% the PLF is 10.86%. DOE has validated the maximum value of PLF as 93% evaluating previous trends of utilization. Sensitivity towards the increase in Bagasse price was not considered in IRR because of no opportunity cost in the region and no plans for bagasse procurement. This validates that the assumptions selected for finacial analysis are correct and indicate the robustness of finacial analysis. IRR of the project activity considering the sensitivity analysis is lower than the benchmark and hence the project activity is financially unattractive. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation (version 04) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to

determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

The validation is based on the information made available to us and the engagement conditions detailed in this report.

6 REFERENCES

Category 1 Documents:
Documents provided by Type the name of the company that relate directly to the GHG components of the project.

1	Project Design Document Version 4, April 05, 2007
2	Project Design Document Version 3, February 07,2007
3	Project Design Document Version 2, September20, 2006
4	DNA APPROVAL NUMBER F.NO.4/17/2006-CCC DATED 7TH MARCH 2007 FROM HOST COUNTRY INDIA FOR SIMBHAOLI SUGAR MILLS LIMITED AND DSCL ENERGY SERVICES COMPANY LIMITED
5	DNA APPROVAL NUMBER AL/36/2007 DATED 13TH MARCH 2007 FROM PARTICIPATING COUNTRY "UK"
6	INSPECTION CERTIFICATE BY CHARTERED ENGINEERING COMPANY FOR SIEMENS USED STEAM GENERATOR PLANT, SR. NO. FB 85 030. PRESENT CIF VALUE 46,800 EURO, ORIGINAL VALUE IN THE MANUFACTURING US$ 1,200,000/-
7	News Paper (Rashtriya Sahara) clipping dated 12/06/2006 inviting local stakeholders for SSML-Simbhaoli's project of 22MW Power Plant
8	ISO 9001:2000 certificate for SSML and List of procedures Issue date 31.01.07
9	Evidence for starting date of project activity (01.10.2007) for laying of foundation for project activity in the form of circulars dated 27/09/2006 & dated October 03,2006.
10	Simbhaoli Project Financials, March 2007 of SSML-Simbhaoli Biomass Power Project (IRR)
11	Air Consent number dated 23.03.06 valid till 31.12.2007
12	Letter dated May 4,2006 reminder for the issue of Water consent to SSML, Simbhaoli
13	Proceeding of Stake-holder meeting with farmers and other persons/residents-belonging to the area of Simbhaoli Sugar Mills Ltd dated 19.06.2006
14	Letter Of Intent dated 07/06/2005 placed by Simbhaoli Sugar Mills on DSCL energy services Limited for validation and verification as CDM consideration
15	Power Purchase Agreement between M/s.Simbhaoli Sugar Mills Ltd. and Paschimanchal Vidyut Vitran Nigam Limited dated 25/02/2006 for a period of 5 years
16	Modalities for communicating with Executive board of UNFCCC dated
17	Simbhaoli_Finacials_13807Fin

Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/ Consolidated baseline methodology for grid-connected electricity generation from biomass residues ACM 0006 Version 04, 02 November 2006.

/2/ Consolidated monitoring methodology for grid-connected electricity generation from biomass residues ACM 0006 Version 04, 02 November 2006.

/3/ Guidelines for completing the PDD and the proposed new baseline and monitoring methodologies (CDM-NM) Version 6

/4/ Kyoto Protocol to the United Nations Framework Convention on Climate Change, United Nations, Dec 1997.

/5/ Consolidated baseline methodology for grid connected electricity generation from renewable sources ACM 0002 Version 6, 19 May 2006

/6/ "Tool for demonstration and assessment of Additionality" Version 2 and Version 3, 28 November 2006

Persons interviewed:

List persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

/1/ MR.I.S. BHATIA- GENERAL MANAGER

/2/ Mr. A. Chaurasia-Manager Engineering

/3/ Mr. Sunil Gupta- Dy.General Manager (Finance)

/4/ Mr. Sudhir Kumar- Dy.General Manager (Cane)

/5/ Mr.Vidya Charan Dadu- Ex.Pradhan, BDA office and Director Cane Development Society, Village Bhovapur Mastan Nagar, Simbhaoli

/6/ Mr.Surender Pal Singh- Pradhan & Cane Farmer, Village Makhapur, Simbhaoli

/7/ Mr.Kusalpal Arya- Cane Farmer & Secretary, Indian Farmers Union, Village Nayazpur Khaya, Simbhaoli

/8/ Mr.Rajpal Singh- Cane Farmer

/9/ Mr.Narayan Singh- Cane Farmer

/10/ Mr.Rajveer Singh- Cane Farmer

/11/ Mr.Paramdeep Singh- DSCL Energy Services Company Limited

/12/ Mr.Charu Gupta- DSCL Energy Services Company Limited

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APPENDIX A: COMPANY CDM PROJECT VALIDATION PROTOCOL

Table 1 Mandatory Requirements for Clean Development Mechanism (CDM) Project Activities

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art.12.2	OK	Table 2, Section E.4.1
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, Marrakesh Accords, CDM Modalities §40a	OK	Table 2, Section A.3
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art.12.2.	OK	Table 2, Section E.4.1
4. The project shall have the written approval of voluntary participation from the designated national authorities of each party involved, including confirmation by the host party that the project activity assists it in achieving sustainable development	Kyoto Protocol Art. 12.5a, Marrakesh Accords, CDM Modalities §40a, §28, Annex 3 of the Resolução Interministerial 01/03	OK	Table 2, Section A.3.2
5. The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section E
6. Reduction in GHG emissions shall be additional to any that	Kyoto Protocol	OK	Table 2, Section B.3

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Art. 12.5c, Marrakesh Accords, CDM Modalities §43 and 44		
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance	Marrakech Accords	OK	No public funding is envisaged for the project, A.4.5 of PDD
8. Parties participating in the CDM shall designate a national authority for the CDM	Marrakech Accords, CDM Modalities §29, UNFCCC website	OK	Ministry of environment and forest has been designated as national authority for the CDM in India
9. The host country shall be a Party to the Kyoto Protocol	Marrakech Accords, CDM Modalities §30, UNFCCC website	OK	India is a party to Kyoto Protocol and accessed the same on 26th August 2002.
10. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received	Marrakech Accords, CDM Modalities §37b	OK	Table 2, Section G
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out.	Marrakech Accords, CDM Modalities §37c	OK	Table 2, Section F
12. Baseline and monitoring methodology shall be previously approved by the CDM Methodology Panel	Marrakech Accords, CDM	OK	Table 2, Section B.1.1 and D.1.1

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
	Modalities §37e		
13. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP	Marrakech Accords, CDM Modalities §37f	OK	Table 2, Section D
14. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available	Marrakech Accords, CDM Modalities, §40	OK	Source http://cdm.unfccc.int/Projects/Validation
15. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	Marrakech Accords, CDM Modalities, §45 b, c, e	OK	Table 2, Section B.2
16. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, CDM Modalities, §47	OK	Table 2, Section B.2
17. The project design document shall be in conformance with the UNFCCC CDM-PDD format and fulfilled according to the guidelines for completing CDM-PDD, CDM-NMB, and CDM-NMM	Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	OK	Reference 1 to this validation protocol

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A. General Description of Project Activity *The project design is assessed.*					
A.1. Title of the project activity, version number and date of the document	PDD	DR	Title of the Project activity: Simbhaoli Biomass Power Project. Version 2, 20/09/2006 Revised Version 04, Dated 25/03/2007	OK	OK
A.2. Description of the project activity					
A.2.1. Is the purpose of the project activity included?	PDD	DR I	The project involves installation of a new 22 MW backpressure type turbo generator along with a new high pressure (87 kg/cm2) 110 TPH capacity boiler. The project activity, primarily aims to generate power and steam for the sugar mill captive consumption purposes, along with export of surplus electricity to Uttar Pradesh Power Corporation Limited (UPPCL) grid. Refer A 2 of PDD.	OK	OK
A.2.2. Does PDD include explanation how the project activities reduce greenhouse gas emission?	PDD	DR I	The export of electricity would reduce GHG Emissions by replacing fossil fuel dominated grid based electricity with a renewable source of electricity. Refer A 2 of PDD.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.2.3. Is the view of the project participants on the contribution of the project activity to sustainable development included?	PDD	DR	According to project participants, the project activity contributes to sustainable development. PDD indicates that the project activity will create direct and indirect employment opportunities. This was verified during site visit.	OK	OK
A.3. Project participants					
A.3.1. Are Party (ies) and private and/or public entities involved in the project activity listed?	PDD	DR	Yes. There are three Private entities involved listed, these are (1) The Simbhaoli Sugar Mills Limited & (2) DSCL Energy services company Ltd,(India) & (3) Agrinergy Limited. (UK) .	OK	OK
A.3.1.1 Is the contact information provided in annex 1 of the PDD?	PDD	DR	Yes	OK	OK
A.3.1.2 Is this information indicated using the tabular format?	PDD	DR	Yes.	OK	OK
A.3.1.3 Is the project in line with relevant legislation and plans in the host country?	-	DR I	Pollution board consents need be provided for evaluation.	CL-1	OK
A.3.1.4 Is the project in line with host-country specific CDM requirements?	-	DR I	Host country approval not received	CAR-1	OK
A.3.1.5 Is the project in line with sustainable development policies of the host country?	PDD	DR I	Yes	OK	OK
A.4. Technical description of the project activity					
A.4.1. Location of the project activity					
A.4.1.1 Host country Party(ies)	PDD	DR	India	OK	OK
A.4.1.2 Region/State/Province etc.	PDD	DR	Uttar Pradesh State	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.4.1.3 City/Town/Community etc.	PDD	DR	District: Ghazi bad , Village: Simbhaoli	OK.	OK
A.4.1.4 Detailed description of the physical location, including information allowing the unique identification of this project activity.	PDD	DR	Unique identification of the project activity such as plot number/ khasra no. is not indicated in PDD	CAR-2	OK
A.4.2. Category of the project activity					
A.2.3.1. Is the category of the project activity specified?	PDD	DR	Renewable energy supply side grid – connected project.	OK	OK
A.2.3.2. Is it justified how the proposed project activity conforms to the project category selected?	PDD	DR	The proposed project activity is justified comprehensively for the project category in section A 4.3	OK	OK
A.4.3 Technology to be employed *Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The validator should ensure that environmentally safe and sound technology and know-how is used.*					
A.4.3.1 Does the project design engineering reflect current good practices?	-	DR I	The project involves the installation of a new 22 MW backpressure type turbo generator, along with a high pressure (87 kg/cm2) 110 TPH capacity boiler. The type of boiler and turbine proposed are extensively used in India.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.4.3.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	-	DR I	This was evaluated and concluded during the site visit interactions. High pressure boilers, turbines with automation of data collection will result in significantly better performance than commonly used technologies in the Sugar industries.	OK	OK
A.4.3.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	-	DR I	Expected operational lifetime of the project activity is indicated to be 20 years. Since new machines from reputed manufacturers are being used the operational lifetime can be estimated to be 20 years or more.	OK	OK
A.4.3.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	-	DR I	Project activity specific requirement and its inclusion in ISO system needs to be provided. Organisation is ISO 9001:2000, ISO 14001:2004 and HACCP certified company. Relevant procedure details and training by equipment supplier need be provided.	CL-2	OK
A.4.3.5 Does the project make provisions for meeting training and maintenance needs?	PDD	DR I	To be verified.	-	OK
A.4.4 Emission reduction estimation:					
A.4.4.1 Is the estimate of total anticipated reductions of tons of CO_2 equivalent provided?		DR	Yes. The estimated emission reductions over the 10-year fixed crediting period would be 470970 tCO2e.from 2006. Project status and accurate period of start up of project activity needs to be provided.	CL-3	OK
A.4.4.2 Is this information indicated using the tabular format?		DR	The information on emissions reductions is indicated using the tabular format.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.4.5 Public funding of the project activity					
A.4.5.1 Is it indicated whether public funding from Parties included in Annex I is involved in the proposed project activity?	PDD	DR	The project will not receive any public funding from Parties included in Annex I. Refer A.4.5. of PDD.	OK	OK
A.4.5.2 If public funding is involved, is information on sources of public funding for the project activity provided in Annex 2, including an affirmation that such funding does not result on a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties?	PDD	DR	Not applicable. Refer Annex-2	OK	OK
B. Project Baseline / Monitoring M ethodology *The validation of the project baseline establishes whether the selected baseline & Monitoring methodology is appropriate and whether the selected baseline represents a likely baseline scenario.*					
B.1. Baseline & Monitoring Methodology *It is assessed whether the project applies an appropriate baseline & Monitoring methodology.*					
B.1.1. Are the title and the reference of the baseline & Monitoring methodology applicable to the project activity defined?	1 UNFCCC website	DR I	Baseline & Monitoring methodology applied is ACM0006 Version no. 3 named “Consolidated baseline methodology for grid connected electricity generation from biomass residues”. Current version is 4. This has to be considered accordingly.	CAR-3	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.1.2. Is the methodology previously approved by the CDM Methodology Panel?	1	DR	Yes. It is UNFCCC Approved consolidated baseline methodology ACM 0006 Version 03. Status w.r.to Version 4 has to be considered.	CAR-3	OK
B.1.3. Does the proposed project activity meet the applicability conditions of the methodology?	1	DR	Detailed Justification as per applicability requirements of the methodology is indicated in B.2. of PDD to be discussed with revised ACM 0006 Ver 4.	CAR-4	OK
B.2. Description of how the methodology is applied in the context of the project activity					
B.2.1. Is the baseline methodology the one deemed most applicable for this project and is the appropriateness justified?	1 ACM 006	DR	The applicability of approved methodology is indicated to be fulfilling the criteria indicated in Approved baseline methodology ACM0006. It's appropriateness and justification with reference to choice of baseline methodology and conclusion is indicated in PDD. Compare with ACM 0006 Ver 4	CAR-5	OK
B.2.2. Is there any documentation referred?	PDD		Yes refer Annexe III of PDD.	OK	OK
B.2.3. Are national policies and circumstances relevant to the baseline of the proposed project activity summarised?	-	I	There are no national policies and circumstances relevant to the baseline of the project activity summarised. These need be described or referred in PDD.	CAR-6	OK
B.3. Description of the project boundary for the project activity.					
B.3.1Are all the emission sources/ gases included and justified?	1	DR	Yes B.3. of PDD. This need be modified and indicated w.r.to Version 4 of ACM0006	CAR-3	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.3.2 Are the project's spatial (geographical) boundaries clearly defined?	PDD	DR	B.3 includes description how the sources and gases are included in the project boundary. This need be indicated w.r.to Version 4 of ACM0006	CAR-3	OK
B.3.3 Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	PDD	DR	The project boundary is drawn around the point of fuel supply to the point of power export to the grid. Refer B.3 of PDD. This need be modified and indicated w.r.to Version 4 of ACM0006	CAR-3	OK
B.4. Identification of Baseline scenario					
B.4.1. Is the identification of baseline justified?	PDD	DR	This need be modified and indicated w.r.to Version 4 of ACM0006	CAR-3	OK
B.4.2. Is it transparent and conservative? What are the documents referred ?	PDD	DR	Baseline scenario w.r.to. Version 4 need be considered.	CAR-3	OK
B.5. Assessment and demonstration of additionality					
B.5.1. Is the proposed project activity additional?	PDD	DR	ACM 0006 requires stepwise assessment of additionality detailed in the "Tool for the demonstration and assessment of additionality" Version 2. This is described in detail in section B.4 and B.5 of PDD. Barrier analysis is followed. Evidences to be verified. Step 5 – Impact of CDM registration refers to investment barrier. However Invest barrier is not adopted in PDD. Refer CAR-3	CAR-4	OK
B.5.2 Was the project started before the validation?	1	DR I	Starting Date 01/10/05, Evidence of project start-up to be provided.	CL-4	OK
B.5.2.1 If, yes, is there any proof to show that the CDM was seriously considered ?	1	I	The evidence for the same needs to be provided for verification.	CL-5	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.6 Emission reduction: Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.					
B.6.1 Does PDD provides explanation and justification for the choice of methodology?	1	DR	Yes as per Section B.4 of PDD. Compare with ACM 0006 Ver 4	CAR-3	OK
B.6.2 Will the project result in fewer GHG emissions than the baseline scenario?	-	DR	Use of biomass residue in the project activity will result in fewer GHG emissions than the baseline scenario.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.6.1.a. Predicted Project GHG Emissions *The validation of predicted project GHG emissions focuses on transparency and completeness of calculations*					
B.6.1.1 Are uncertainties of external data sources for emissions reduction estimated?	-	DR	External data sources for emission reduction need be provided, verified and evaluated.	CL-6	OK
B.3. Baseline Emissions *The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.*					
B.3.1 Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	-	DR	The baseline boundaries are clearly defined in Annex 3. Please explain according to version 4 of ACM0006.	CAR-3	OK
B.3.2.Are the GHG calculations documented in a complete and transparent manner?	-	DR	B.6. GHG calculations are not attached with PDD but the formulae for calculations are described in PDD. The detailed GHG calculations need be provided.	CL-7	OK
B.3.3 Have conservative assumptions been used when calculating baseline emissions?	-	DR	Description and justification for conservative assumptions when calculating baseline emissions is evident in PDD. Same need to be verified by evaluation of GHG calculations	CL-7	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.3.4 Are uncertainties in the GHG emission estimates properly addressed in the documentation?	-	DR	Uncertainties in the GHG emission are not addressed.	CL-8	OK
B.3.5 Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?	-	DR	The project baseline(s) and the project emissions been determined using the same appropriate methodology. Current version	CAR-3	OK
B.6.2.Data and Parameters: Availability of information on the data and parameters that are monitored throughout the crediting period but determined only once , are verified.					
B.6.2.1 Is there a compilation of data in a tabular form?	1	DR	The evidence for the same need be provided for evaluation and conclusion.	CL-9	OK
B.6.2.2 Are the data available at the time of validation?	1	DR I	Refer B.6.2.1	-	OK
B.6.2.3. Is justification and explanation transparent?	1	DR	Refer B.6.2.1	-	OK
B.6.2.4 Is there any further explanation available in Annexe III? Does it include a description of measurement methods and procedures?	1	DR	Refer B.6.2.1	-	OK
B.6.3 Ex-ante calculation of emission reductions:					
B.6.3.1 Is it transparent? Is it reproducible?	1	DR	Calculations for Ex-ante need be provided along with data source and assumptions for evaluation and conclusion. It is indicated that the calculations are provided in following section.	CL-10	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.6.3.2 Are the detailed calculations available under Annexe III?	1	DR	Refer CL-10 for detailed calculations.	CL-10	OK
B.6.4 Ex-ante estimation of emission reduction:					
B.6.4.1 Are the data summarised in the tabular form without any error?	1	DR	Refer B.6.3.1 & B.6.3.2 and CL-10	-	OK
B.7. Application of Monitoring methodology and plan.					
B.7.1.1. Is the tabular format used for monitoring of data?	1	DR	Yes, refer requirements as per version 4	CAR-3	OK
B.7.1.2. Are the QA/QC procedures properly referred and explained?	1	DR	QA/QC procedures are not referred or explained.	CAR-7	OK
B.7.1.3 Is there any relevant information provided in Aneexe IV	1	DR	Annexe IV left blank. Background information for application of monitoring methodology is neither referred nor indicated.	CAR-8	OK
B.7.2. *Monitoring Plan* *The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed* Monitoring Methodology *It is assessed whether the project applies an appropriate baseline methodology.*					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.7.2.1.1 Is the monitoring methodology previously approved by the CDM Methodology Panel?	1	DR	Yes. Monitoring methodology ACM 0006 called 'Consolidated monitoring methodology for grid connected electricity generation from biomass residues' version 3 Date 19May 2006 is approved previously. Comparison with current version is required.	CAR-9	OK
B.7.2.1.2 Is the monitoring methodology applicable for this project and is the appropriateness justified?	1	DR	The reasons for choosing the monitoring methodology and Justification for appropriateness are described. Refer w.r.to version 4 of ACM 0006	CAR-9	OK
B.7.2.1.3. Does the monitoring methodology reflect good monitoring and reporting practices?	-	DR	This need be verified during site visit. Refer requirements of version 4 of ACM0006	CAR-9	OK
B.7.2.1.4. Is the discussion and selection of the monitoring methodology transparent?	-	DR	Yes. Refer B.7.2.1.3	-	OK
B.7.2.2. Monitoring of Project Emissions *It is established whether the monitoring plan provides for reliable and complete project emission data over time.*					
B.7.2.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	-	DR I	To be verified during site visit interactions and w.r.to ACM 0006 Ver 4. Refer CAR-9	CAR-9	OK
B.7.2.2.2. Are the choices of project GHG indicators reasonable?	-	DR	Refer B.7.2.2.1	-	OK
B.7.2.2.3. Will it be possible to monitor / measure the specified project GHG indicators?	-	DR	Refer B.7.2.2.1	-	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.7.2.2.4 Will the indicators give opportunity for real measurements of achieved emission reductions?	-	DR	Refer B.7.2.2.1	-	OK
B.7.2.2.5. Will the indicators enable comparison of project data and performance over time?	-	DR	Refer B.7.2.2.1	-	OK
B.7.2.3. Monitoring of Leakage *It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.*					
B.7.2.3.1 Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	-	DR	Monitoring Plan indicated in Annexes 4 as Monitoring Information is left blank. Description of the monitoring plan is in section B.7. Compare with ACM 006 Ver 4	CAR-10	OK
B.7.2.3.2. Have relevant indicators for GHG leakage been included?	-	DR	Scenario 12 is chosen where issue of leakages need not be addressed which is not as per ACM 0006 Ver 4. Refer CAR-10	-	OK
B.7.2.3.3 Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	-	DR	Compare with ACM 006 Ver 4, Refer CAR-10	-	OK
B.7.2.3.4. Will it be possible to monitor the specified GHG leakage indicators?	-	DR	Compare with ACM 006 Ver 4, Refer CAR-10	-	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.7.2..4 Monitoring of Baseline Emissions *It is established whether the monitoring plan provides for reliable and complete project emission data over time.*					
B.7.2.4.1 Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining baseline emissions during the crediting period?	-	DR	Monitoring Plan is not as evident in current version of methodology. Inclusion and exclusion of various parameters and the justification need be evaluated during site visit interactions. Monitoring Plan indicated as Annex 4 is left blank and no justification for same is evident.	CAR-10	OK
B.7.2.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	-	DR	Compare with ACM 006 Ver 4, Refer CAR-10	-	OK
B.7.2.4.3. Will it be possible to monitor the specified baseline indicators?	-	DR	Compare with ACM 006 Ver 4, Refer CAR-10	-	OK
B.7.2.5. Project Management Planning *It is checked that project implementation is properly prepared for and that critical arrangements are addressed.*					
B.7.2.5.1 Is the authority and responsibility of project management clearly described?	1	DR	Authority and responsibility related to project management is not referred or described in PDD. This needs to be evaluated and concluded during site visit.	CAR-11	OK
B.7.2.5.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	1	DR	Authority and responsibility for registration, monitoring, measurement and reporting is not described.	CAR-11	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.7.2.5.3 Are procedures identified for training of monitoring personnel?	-	I	Procedures for training of monitoring personnel are not identified. Needs to be verified during site visit.	CL-11	OK
B.7.2.5.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	-	I	Procedures for emergency preparedness for cases where emergencies can cause unintended emissions are not identified. Needs to be verified during site visit.	CL-11	OK
B.7.2.5.5 Are procedures identified for calibration of monitoring equipment?	-	I	Procedures for calibration of monitoring equipment are not identified. Needs to be verified during site visit.	CL-11	OK
B.7.2.5.6 Are procedures identified for maintenance of monitoring equipment and installations?	-	I	Procedures for maintenance of monitoring equipment and installations are not identified. Needs to be verified during site visit.	CL-11	OK
B.7.2.5.7 Are procedures identified for monitoring, measurements and reporting?	-	I	Procedures for monitoring, measurements and reporting are not identified.	CL-11	OK
B.7.2.5.8 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	-	I	Procedures for control of records are not identified. Records related to day-to-day operations related to the specific project activity are not identified and provided.	CL-11	OK
B.7.2.5.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	-	I	Procedures for dealing with possible monitoring data adjustments and uncertainties are not identified.	CL-12	OK
B.7.2.5.10 Are procedures identified for review of reported results/data?	-	I	Procedure for review or reported results/data is not identified..	CL-12	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.7.2.5.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	-	I	Procedures for internal audits are not identified for GHG project compliance.	CL-13	OK
B.7.2.5.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	-	I	Procedures for project performance reviews and approval of data before submission internally or externally are not evidenced.	CL-14	OK
B.7.2.5.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	-	I	Procedures for corrective actions are not identified to provide for more accurate future monitoring and reporting..	CL-11	OK
B.8. Details of the baseline and its development					
B.8.1 Is the date of completion provided?	1	DR	The date of completion of baseline study is indicated to be 26/06/2006. Any change in the baseline development need be indicated or referred	CL-15	OK
B.8.2 Is contact information provided?	1	DR	Yes	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
C. Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*					
C.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	1	DR	The project activity staring date and the operational lifetime is clearly defined in Section C of PDD. Project activity starting date and Operational lifetime are indicated to be 01/10/2005 and 20 years respectively. Evidence of starting date to be provided.	CL-15	OK
C.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	1	DR	Fixed crediting period is for the crediting length in years and months i.e. 10 years. Fixed crediting period starting date is indicated to be 01/10/2006 in C.2.2.1. of PDD. Considering the validation in Nov '06, the starting date needs review.	CL-16	OK
D. Environmental and Social Impacts *Documentation on the analysis of the environmental and social impacts will be assessed, and if deemed significant, an EIA should be provided to the validator.*					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
D.1 Has an analysis of the environmental and social impacts of the project activity been sufficiently described?	PDD	I	Section F.1 (Section D & E wrongly indicted as Section F & G) of PDD describes the environmental impacts, which are positive. It indicates that no negative environmental impacts are identified. Air emissions, Solid Waste disposal and discharge to water are described are indicated to be as per State Pollution Control Board norms. Ash disposal not discussed in the PDD	CL-17	OK
i. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	-	I	NO. EIA is not indicated mandatory for power plants in India.	OK	OK
ii. Will the project create any adverse environmental or social effects?	-	I	*No.*	OK	OK
iii. Are transboundary environmental and social impacts considered in the analysis?	-	I	There are no negative Transboundary environmental and social impacts considered in the analysis. However there are remote chances of these impacts.	OK	OK
iv. Have identified environmental and social impacts been addressed in the project design?	-	I	The environmental impacts have been addressed in the project design. Refer F.1.	OK	OK
v. Does the project comply with environmental legislation in the host country?	-	I	Environmental Clearance need be provided for verification.	CL-18	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
E. Stakeholder Comments *The validator should ensure that a stakeholder comments have been invited and that due account has been taken of any comments received.*					
E.1 Have relevant stakeholders been consulted?	-	DR I	Yes. The stakeholder meeting is conducted on 19 June 2006. MOM for it need be provided for evaluation.	CL-19	OK
E.2 Have local stakeholders used appropriate media to invite comments?	-	DR I	Local newspapers have been used for inviting local stakeholders. Evidence for the same need be provided	CL-20	OK
E.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	-	I	As per host country regulations it is not mandatory for stakeholder consultations.	OK	OK
E.4 Is a summary of the stakeholder comments received provided?	-	DR	There is no mention for Summary of the stakeholder comments received. It is indicated that there is no adverse comment. Local community leaders and cane growers and other members were interacted during the site visit. No adverse comment from the stakeholders. Refer G. 2	CL-19	OK
E.5 Has due account been taken of any stakeholder comments received?	-	DR	Refer E.1	OK	OK

TABLE 3 BASELINE AND MONITORING METHODOLOGIES ACM0006

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Baseline Methodology					
1. 1. Applicability					
1.1.1. Does the project activity uses no other biomass types other than biomass residues facility?	2	DR I	Yes. The Project uses bagasse.	OK	OK
1.1.2. Are these biomass residues are predominant fuels used in the project plant?	2	DR I	Bagasse is the predominant fuels used in the project plant.	OK	OK
1.1.3. Are some fossil fuels co fired in the project plant?	2	DR I	No, fossil fuels are not co-fired in the project plant.	OK	OK
1.1.4. Shall the project result in an increase of the processing capacity of raw input (e.g. sugar, rice, logs, etc.) or in other substantial changes (e.g. product change) in this process;			No, the project will not result in increase the processing capacity of raw input or product.	OK	OK
1.1.5. Is the biomass used by the project facility stored for more than one year?			No the biomass used in the project facility is not stored for more than one year. However during off season there is a some biomass residue left and this is consumed during starting next season within a year..	OK	OK
1.1.6 Is a significant energy quantity, except from transportation of the biomass, are required to prepare the biomass residues for fuel combustion, i.e. projects that process the biomass residues prior to combustion (e.g. esterification of waste oils)?			No energy quantity is used for the preparation of biomass residue. However the transportation arrangement for bagasse to feeding point need be provided.	CL-21	OK
1.1.7. Is the methodology for the combinations of project activities and baseline scenarios identified in Table 1 indicated in ACM 0006 Version 4.			Project uses applicable Baseline Scenario 12. which is not as per ACM 0006 Ver 4.	CAR-3	OK
1.1.8 Is the baseline methodology used in conjunction with the approved consolidated monitoring methodology			Baseline methodology is used in conjunction with the approved consolidated methodology ACM	CAR-3	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
ACM0006 "Consolidated monitoring methodology for grid-connected electricity generation from biomass residues".			0006 Version 3 Compare with ACM 006 Ver 4		
1.2. Identification of alternative baseline scenarios					
1.2.1. Is the baseline scenario chosen as per Table 1 of ACM0006 Version 4.	2	DR	Baseline scenario 12 chosen is not as per Table 1 of ACM 0006 Version 4.	CAR-3	OK
1.2.2 Are the realistic and credible alternatives separately determined with respect to: a) How power would be generated in the absence of CDM i. b) What would happen to biomass in the absence of the project? c) In case of cogeneration, how heat would be generated in absence of project.		DR	Refer CAR-3 and the changes as per Version 4 of ACM 0006	-	OK
1.2.2. Has the most plausible baseline scenario for the power generation indicated from P1 to P6?			Refer-1.2.1 & 1.2.2	OK	OK
1.2.3. In case the proposed project activity is the cogeneration of power and heat, have the project participants defined the most plausible baseline scenario for the generation of heat indicated from H1 to H8?	2	I	Refer-1.2.1 & 1.2.2	OK	OK
1.2.4. For the use of biomass, are the alternatives chosen from B1 to B6 options?	2	DR	Refer-1.2.1 & 1.2.2	OK	OK
1. 3. Project boundary					
1.3.1. Does the project boundary include the CO2	2	DR	There is no fossil fuel used in Boilers.	CL-22	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
emissions from on-site fuel consumption of fossil fuels, co-fired in the biomass power plant			Procedure for start up and the fuel used needs to be provided for evaluation. Refer CAR-3 also		
1.3.2. Does the project boundary include the CO2 emissions from off-site transportation of biomass that is combusted in the project plant.	2	DR	Consider Version 4 requirements and indicate.	CL-23	OK
1.3.3. Does the spatial extent of the project boundary encompasses the power plant at the project site the means for transportation of biomass to the project site (e.g. vehicles) and all power plants connected physically to the electrical system that the CDM power plant is connected to.			Yes.	OK	OK
1.2.3. Does the project boundary includes the emissions as per Table 2 of methodology.	2	DR	Yes the project boundary includes emissions as per Table 2 of methodology.	OK	OK
1.4. Additionality					
1.4.1. Was the additionality of the project activity demonstrated and assessed using the latest version of the "Tool for demonstration and assessment of addiotionality"?	2	DR	Yes. Additionality of the project activity is demonstrated transparently using the current version of "Tool for demonstration and assessment of additionality". This has to be evaluated and referred w.r.to current version of "Tool for demonstration and assessment of additionality".	CL-24	OK
d) Emission Reduction: *It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission*					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
reductions.					
2.1 Is the emission reduction is determined as per the formula given in the ACM 0006?	-	DR	Calculations need be provided for evaluation and with reference to ACM 0006 Ver 4	CAR-3	OK
2.2. How are the emission factors determined? Are the values conservative?	-	DR	Emission factor set / used by PP for emission reduction is not conservative. CEA emission factor published and publicly available for 2004-05 is 0.75 whereas EF used by PP is 0.924.	CAR-12	OK
3. Project Emissions: *The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.*					
3.1 Are the project emissions determined according to formula 2 of ACM 0006 Version 4	2	DR	ACM ver 4 is to be used.	CAR-3	OK
3.2.a Does calculation includes transportation of biomass? 3.2.b Which is the option, considered?	- -	DR DR	Calculations not provided	CAR-3	OK
3.3.a. Is there any on-site consumption of fossil fuel? 3.3.b. Is the C02 emission calculation considered the table 1?	Site Visit PDD	I DR	Details of startup procedure need be provided.	CL-3	OK
3.4.a Is there any Methane emission?	Site Visit	I DR	Details need be provided.	CAR-3	OK
4. Baseline Emissions: *The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations*					
4.1 Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	-	DR	Yes. The baseline boundaries are clearly defined in Annex 3. Refer CAR-3	CAR-3	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.2 Are the GHG calculations documented in a complete and transparent manner?	-	DR	B .6. GHG calculations are not attached with PDD but the formulae for calculations are described in PDD. The detailed GHG calculations need be provided.	CAR-3	OK
4.3 Have conservative assumptions been used when calculating baseline emissions?	-	DR	Description and justification for conservative assumptions when calculating baseline emissions is evident in PDD. Same need to be verified by evaluation of GHG calculations	CAR-3	OK
4.4. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	-	DR	Uncertainties in the GHG emission are not addressed.	CL-25	OK
4.5 Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?	-	DR	Yes. The project baseline(s) and the project emissions been determined using the same appropriate methodology.	OK	OK
4.6 Were the baseline emissions determined considering the efficiency of heat and power generation equipments?	2	DR	Yes. Efficiency of heat and power generation equipment is considered for base line emissions.	OK	OK
4.7 Were the Emissions Factor for displaced electricity calculated as in ACM0002?	2	DR	Emission factor for displaced electricity is calculated as per ACM0002.	CL-26	OK
4.8 Whether calculation considered the electricity consumption in the power plant?	-	DR	Information need be provided.	CL-27	OK
4.9 Is the efficiency of electricity generation required to be considered?	PDD	DR	Information need be provided and evaluated.	CL-28	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5. Leakage: *It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed.*					
5.1 Were the leakage emissions determined?	2	DR	Leakage emissions are considered for the activities such as transportation of biomass is concerned. Scenario 12. Refer CAR-3	-	OK
5.2 Are potential leakage effects beyond the chosen project boundaries properly identified?	-	DR	Discussions on leakage is included at various points e.g. ex-ante calculations appropriately. Monitoring of these need be evaluated during site visit. Formulae for Calculations are described but the calculations are not attached since the project is not commissioned. Refer earlier relevant CL	-	OK
5.3 Have these leakage effects been properly accounted for in calculations?	-	DR	Refer 5.1	-	OK
5.4 Does the methodology for calculating leakage comply with existing good practice?	-	DR	Refer 5.1	-	OK
5.5. Are the calculations documented in a complete and transparent manner?	-	DR	Refer 5.1	-	OK
5.6 Have conservative assumptions been used when calculating leakage?	-	DR	Refer 5.1	-	OK
5.7 Are uncertainties in the leakage estimates properly addressed?	-	DR	Refer 5.1	-	OK
e) Monitoring Methodology					
2.1. Applicability					
2.1.1. Is the monitoring methodology in conjunction	2	DR	Monitoring methodology is in conjunction with	CAR-3	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
with Consolidated Monitoring Methodology for grid connected electricity generation from biomass residues ACM0006 Version 4?		I	consolidated Monitoring Methodology for grid connected electricity generation from biomass residuee ACM0006 Version 3.		
2.2. Monitoring Methodology					
2.2.1. Is electricity generation from project activity being monitored?	2	DR	Yes	OK	OK
2.2.2. Is the monitoring of data evident for recalculation of operating margin as per ACM0002?	2	DR	It is ex-ante determination of Emission factor. Hence it is not required to be monitored.	OK	OK
2.2.3. Is the monitoring of data evident for recalculation of build margin as per ACM0002?	2	DR	Data source is to be identified used and Annex III needs to be evaluated.	CL-29	OK
2.2.4. If applicable is the data needed to calculate, carbon dioxide emissions from fuel combustion due to cofiring fossil fuels used in the project plant or in boilers operated next to the project plant or in boilers used in the absence of the project activity being monitored?	2	DR	Fossil fuel is not being used.	OK	OK
2.2.5. If applicable is the data needed to Calculate methane emissions from natural Decay or burning of biomass in the absence of the project activity being monitored?	2	DR	No. Data is not needed to be calculated for methane emissions.	OK	OK
2.2.6. If applicable is the data needed to calculate leakage effects from fossil fuel consumption outside the project boundary being monitored?	2	DR	No data needed to calculate leakage effects from fossil fuel consumption outside the project boundary	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.3. Quality Control (QC) and Quality Assunrance (QA) Procedures					
2.3.1. Did all measurements use calibrated measurement equipment that is regularly and checked for its functioning?	2	DR	There is reference for use of the measurement through calibrated equipments. Consistent practice arrangement need be evaluated.	CL-11	OK
2.3.2. Are all parameters indicated in the QA/QC table as indicated in ACM0006?	PDD	DR	Some parameters are not indicated in the QA/QC table indicated in ACM0006.	CL-29	OK
2.3.3 Is the exclusion of parameters not indicated for QA/QC justified?	PDD	DR	Exclusion of parameters for QA/QC is not justified.	CL-30	OK

Table 4 Legal requirementesCHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Legal requirements					
1.1. Is the project activity environmentally licensed by the competent authority?	Consent to establish	DR	Environmental clearance to be provided.	CL-18	OK
1.2. Are the conditions of the environmental license being met?	Consent to esta	DR	Refer 1.1	CL-18	OK

Table 4 Legal requirementesCHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	blish				
1.3 Are the conditions of the Designated National Authority being met?	Approval by DNA	DR	Refer 1.1. DNA approval from host country India is awaited. DNA approval from UK needs to be provided.	CAR-1	OK

Table 5 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CAR-1 Host country approval not received	2-A.3.1.4	The India host country approval has been received on 7th March 2007. The UK host country approval has been received on 13th March 2007.	Response to CAR-1 is satisfactory; hence the said CAR is closed.
CAR-2 Unique identification of the project activity such as plot number/ khasra no. is not indicated in PDD	2-A.4.1.4	The khasra no. of land used for the project activity is 322. The details have been provided to the validators.	Response to CAR-2 is satisfactory; hence the said CAR is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CAR-3 Baseline & Monitoring methodology applied is ACM0006 Version no. 3 named "Consolidated baseline methodology for grid connected electricity generation from biomass residues". Current version is 4. This has to be considered accordingly.	2-B.1.2	The baseline and monitoring methodology used for the revised PDD is ACM 0006 version 04, 2 November 2006.	Response to CAR-3 is satisfactory; hence the said CAR is closed.
CAR-4 Detailed Justification as per applicability requirements of the methodology is indicated in B.2. of PDD to be discussed with revised ACM 0006 Ver 4.	2-B.1.3	The justification and applicability requirements of the methodology are as per the version 4 of ACM 0006 for the proposed project activity. This has been demonstrated in section B.2 of the PDD.	Response to CAR-4 is satisfactory; hence the said CAR is closed.
CAR-5 The applicability of approved methodology is indicated to be fulfilling the criteria indicated in Approved baseline methodology ACM0006. It's appropriateness and justification with reference to choice of baseline methodology and conclusion is indicated in PDD. Compare with ACM 0006 Ver 4	2-B.2.1	The appropriateness and justification with reference to choice of baseline methodology is as per ACM 0006 version 04, 2 November 2006. This has been demonstrated in section B.2 of the PDD.	Response to CAR-5 is satisfactory; hence the said CAR is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CAR-6 There are no national policies and circumstances relevant to the baseline of the project activity summarised. These need be described or referred in PDD.	2-B.2.3	There are no national policies relevant to the baseline and the sugar factories in India are not required to install high-pressure boilers for grid based electricity generation. There is no policy in India that mandates the generation of electricity for grid supply from bagasse. This has been mentioned in section B.5. of PDD.	Response to CAR-6 is satisfactory; hence the said CAR is closed.
CAR-7 QA/QC procedures are not referred or explained.	2-B.7.1.2	The QA/QC procedures have been outlined. Refer section B.7.1.	Response to CAR-7 is satisfactory; hence the said CAR is closed.
CAR-8 Annexe IV left blank. Background information for application of monitoring methodology is neither referred nor indicated.	2-B.7.1.3	The details have been provided in section B.7.2. Hence, Annexe IV is left blank.	Response to CAR-8 is satisfactory; hence the said CAR is closed.
CAR-9 Yes. Monitoring methodology ACM 0006 called 'Consolidated monitoring methodology for grid connected electricity generation from biomass residues' version 3 Date 19May 2006 is approved previously. Compare with ACM 0006 Ver 4	2-B.7.2.1.1	The monitoring of the proposed project activity is as per ACM 0006 version 4, 2 November 2006.	Response to CAR-9 is satisfactory; hence the said CAR is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CAR-10 Monitoring Plan indicated in Annexes 4 as Monitoring Information is left blank. Description of the monitoring plan is in section B.7. Compare with ACM 006 Ver 4	2-B.7.2.3.1	The monitoring plan as described in sction B.7 is as per ACM 0006 version 4, 2 November 2006.	Response to CAR-10 is satisfactory; hence the said CAR is closed.
CAR-11 Authority and responsibility related to project management is not referred or described in PDD. This needs to be evaluated and concluded during site visit.	2-B.7.2.5.1	The management of the plant will designate one person to be responsible for the collation of data as per the monitoring methodology. The designated person will collect all data to be monitored as mentioned in this project design document (PDD) and will report to the head of the plant. The overall CDM project management responsibility will remain with the Plant Head. This has been mentioned in section B.7.2 of the PDD.	Response to CAR-11 is satisfactory; hence the said CAR is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CAR-12 Emission factor set / used by PP for emission reduction is not conservative. CEA emission factor published and publicly available for 2004-05 is 0.75 whereas EF used by PP is 0.924.	3-B.2.3	Whilst the previous emission factor was determined as per the ACM0002 guidelines using published data, this has now been changed to the CEA published data for the purposes of calculating estimated CERs. However we do believe that whilst the CEA CEF is conservative it is not transparent. We therefore do not expect to be forced to follow a CEA number during the ex-post calculation of the CEF but saying this we are willing to use CEA or any other appropriate calculation by a national body if it is deemed to meet the requirements of the methodology and is acceptable to the DOE and EB at the time of verification.	Response to CAR-12 is satisfactory; hence the said CAR is closed.
CL-1 Pollution board consents need be provided for evaluation.	2-A.3.1.3	The consents from the pollution board have been provided to the validation team after the site visit.	Response to CL-1 is satisfactory; hence the said CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CL-2 Project activity specific requirement and its inclusion in ISO system needs to be provided. Organisation is ISO 9001:2000, ISO 14001:2004 and HACCP certified company. Relevant procedure details and training by equipment supplier need be provided.	2-A.4.3.4	The relevant procedures have been provided to the validators and are also detailed in Annex 4.	Response to CL-2 is satisfactory; hence the said CL is closed.
CL-3 The estimated emission reductions over the 10-year fixed crediting period would be 470970 tCO2e.from 2006. Project status and accurate period of start up of project activity needs to be provided.	2-A.4.4.1	The project start up is planned in mid of May 2007.	Response to CL-3 is satisfactory; hence the said CL is closed.
CL-4 Starting Date 01/10/05, Evidence of project start-up is to be provided.	2-B.5.2	The evidence for project starting date has been provided to the validators.	Response to CL-4 is satisfactory; hence the said CL is closed.
CL-5 The evidence for the CDM consideration needs to be provided for verification.	2-B.5.2.1	The evidence for CDM consideration has been provided to the validators.	Response to CL-5 is satisfactory; hence the said CL is closed.
CL-6 External data sources for emission reduction need be provided, verified and evaluated to evaluate uncertainty if any.	2-B.6.1.1	"*There are no uncertainties related to the GHG emissions since data from reliable sources is used*". This has been mentioned in section B.6.3.	Response to CL-6 is satisfactory; hence the said CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CL-7 B.6. GHG calculations are not attached with PDD but the formulae for calculations are described in PDD. The detailed GHG calculations need be provided.	2-B.3.2. & 2-B.3.3.	The detailed CER calculations have been provided to the validation team.	Response to CL-7 is satisfactory; hence the said CL is closed.
CL-8 Uncertainties in the GHG emission are not addressed.	2-B.3.4	"*There are no uncertainties related to the GHG emissions since data from reliable sources is used. Also calibrated electricity meters will be used for measurement*". This has been mentioned in section B.6.3.	Response to CL-8 is satisfactory; hence the said CL is closed.
CL-9 The evidence for the same need be provided for evaluation and conclusion.	2-B.6.2.1	Yes, the data has been compiled in the tabular form as per ACM 0006 version 4, 2 November 2006.	Response to CL-9 is satisfactory; hence the said CL is closed.
CL-10 Calculations for Ex-ante need be provided along with data source and assumptions for evaluation and conclusion. It is indicated that the calculations are provided in following section.	2-B.6.3.1	The detailed CER calculations have been provided to the validation team.	Response to CL-10 is satisfactory; hence the said CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CL-11 Procedures for training of monitoring personnel, emergency preparedness, calibration of monitoring equipment, maintenance of monitoring equipment and installations, monitoring, measurements and reporting, control of records, corrective actions are not identified. Needs to be verified during site visit.	2-B.7.5.2.3/.4/.5/.6/.7/.8 & B.7.2.5.13	The procedures for training of monitoring personnel, emergency preparedness, calibration, corrective actions & maintenance of monitoring equipment, monitoring, measurements, reporting and control of records are provided in section B.7.2 for details.	Response to CL-11 is satisfactory; hence the said CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CL-12 Procedures for dealing with possible monitoring data adjustments and uncertainties, review or reported results/data are not identified.	2-B.7.5.9/.10	*"All the meters will be checked and calibrated each year by an independent agency and they will be maintained as per the instructions provided by their suppliers. Hence there will be no uncertainties or adjustments associated with data to be monitored".* *"This data will be used by engineer in charge to prepare a monthly report and send it to Plant Head for verification. The monthly reports will become a part of the Management Information System (MIS) and will be reviewed by the management during the quarterly review meeting. The monthly reports will be sent to consultants for estimation of monthly emission reductions, which will also be included in the MIS".* Refer section B.7.2.	Response to CL-12 is satisfactory; hence the said CL is closed.
CL-13 Procedures for internal audits are not identified for GHG project compliance.	2-B.7.5.2.11	The procedures for internal audit have been incorporated in section B.7.2 of the PDD.	Response to CL-13 is satisfactory; hence the said CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CL-14 Procedures for project performance reviews and approval of data before submission internally or externally are not evidenced.	2-B.7.2.5.12	The procedures for performance review and approval of data have been identified and incorporated in section B.7.2 of the PDD.	Response to CL-14 is satisfactory; hence the said CL is closed.
CL-15 The date of completion of baseline study is indicated to be 26/06/2006. Any change in the baseline development need be indicated or referred The project activity staring date and the operational lifetime is clearly defined in Section C of PDD. Project activity starting date and Operational lifetime are indicated to be 01/10/2005 and 20 years respectively. Evidence of starting date to be provided.	2-B.8.1 & C.1	The baseline study has been completed on 10/03/07 as per ACM 0006 version 4, 2 November 2006. The evidence for starting date has been provided to the validators.	Response to CL-15 is satisfactory; hence the said CL is closed.
CL-16 Fixed crediting period is for the crediting length in years and months i.e. 10 years. Fixed crediting period starting date is indicated to be 01/10/2006 in C.2.2.1. of PDD. Considering the validation in Nov '06, the starting date needs review.	C.2	The fixed crediting period starting date is 15/05/07.	Response to CL-16 is satisfactory; hence the said CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CL-17 Section F.1 (Section D & E wrongly indicted as Section F & G) of PDD describes the environmental impacts, which are positive. It indicates that no negative environmental impacts are identified. Air emissions, Solid Waste disposal and discharge to water are described are indicated to be as per State Pollution Control Board norms. Ash disposal not discussed in the PDD	D.1	The ash generated will be used for land filling purposes.	Response to CL-17 is satisfactory; hence the said CL is closed.
CL-18 Environmental Clearance need be provided for verification.	4-1.1 & 1.2, D.1.1	Environmental clearances have been received from the UPPCB.	Response to CL-18 is satisfactory; hence the said CL is closed.
CL-19 The stakeholder meeting is conducted on 21 June 2006. MOM for it need be provided for evaluation.	E.1	The MOM of the stakeholder meeting has been provided to the validation team.	Response to CL-19 is satisfactory; hence the said CL is closed.
CL-20 Local newspapers have been used for inviting local stakeholders. Evidence for the same need be provided	E.2	Copy of newspaper notice, inviting comments from local stakeholders has been provided to the validation team.	Response to CL-20 is satisfactory; hence the said CL is closed.
CL-21 No energy quantity is used for the preparation of biomass residue. However the transportation arrangement for bagasse to feeding point need be provided.	3-1.1.6	Bagasse is transferred from mill to the cogeneration plant through conveyors.	Response to CL-21 is satisfactory; hence the said CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CL-22 There is no fossil fuel used in Boilers. Procedure for start up and the fuel used needs to be provided for evaluation. Refer CAR-3 also	3-1.3.1	Bagasse is used for the start up of boiler.	Response to CL-22 is satisfactory; hence the said CL is closed.
CL-23 Consider Version 4 requirements and indicate.	3-1.3.2.1	The project boundary is drawn as per ACM 0006 version 4, 2 November 2006.	Response to CL-23 is satisfactory; hence the said CL is closed.
CL-24 Additionality of the project activity is demonstrated transparently using the current version of “Tool for demonstration and assessment of additionality”. This has to be evaluated and referred w.r.to current version of “Tool for demonstration and assessment of additionality”.	3-1.4.1	The additionality is demonstrated using version 2 of “Tool for demonstration and assessment of additionality”.	Response to CL-24 is satisfactory; hence the said CL is closed.
CL-25 Uncertainties in the GHG emission are not addressed.	3-4.4	There are no uncertainties related to the GHG emissions since data from reliable sources is used and the calibrated meters are used for electricity monitoring.	Response to CL-25 is satisfactory; hence the said CL is closed.
CL-26 Emission factor for displaced electricity is calculated as per ACM0002.	3-4.7	The emission factor is used as per the CEA published data.	Response to CL-26 is satisfactory; hence the said CL is closed.
CL-27 Whether consideration for calculation of elrctricity generation in power plant is made?	3-4.8	The calculations use net electricity generation as per ACM 0006 version 4, 2 November 2006.	Response to CL-27 is satisfactory; hence the said CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3/4	Summary of project owner response	Validation team conclusion
CL-28 Has the consideration of electricity generation efficiency considered?	3-4.9	As per ACM 0006 version 4, 2 November 2006 there is no need for consideration of electricity generation efficiency for the chosen baseline scenario.	Response to CL-28 is satisfactory; hence the said CL is closed.
CL-29 Data source is to be identified used and Annex III needs to be evaluated.	3-2.2.3 & 2.3.2	The data is being monitored as per ACM 0006 and ACM 0002. Data source have been indicated.	Response to CL-29 is satisfactory; hence the said CL is closed.
CL-30 Exclusion of parameters for QA/QC is not justified.	3-2.3.3	The QA/QC procedures have been outlined for the parameters to be monitored.	Response to CL-30 is satisfactory; hence the said CL is closed.

1- GUIDELINES FOR COMPLETING CDM-PDD – Version 06
2- APPROVED CONSOLIDATED BASELINE AND MONITORING METHODOLOGY FOR GRID-CONNECTED ELECTRICITY GENERATION FROM BIOMASS RESIDUES ACM0006 – Version 04 – 02 November 2006
3- APPROVED CONSOLIDATED METHODOLOGY ACM0002 – Version 06 – 19 May 2006
4- TOOL FOR THE DEMONSTRATION AND ASSESSMENT OF ADDITIONALITY – Version 02 – 28 November 2005

Appendix B

Validation team was selected considering and evaluating the project description in PDD and other technical details. Team was strengthened with a specialist in electrical power sector, financial expert and other experienced engineers as Validators who have conducted the validation of similar projects and do not have any other constraints such as language for communication with stakeholders and employees at site.

The validation team consists of the following personnel:

Mr. K.H.Sharma	Bureau Veritas Certification India (P) Ltd.	Team Leader, GHG Validator is a B.Tech. (Chemical Engg.) Graduate and has more than 25 years of industrial experience in various Chemical industries. He has been involved in validation of more than 15 CDM projects.
Mr.H.B Muralidhar	Bureau Veritas Certification India (P) Ltd.	GHG Validator is a B.E. (Electrical) graduate. He has extensive experience in Power Sector and has more than 20 years of experience in Energy & Manufacturing industries. He has been involved in validation of more than 15 CDM projects
Mr. Sushil Budhia	Sushil Budhia & Associates, Mumbai	Financial Analysts placed in Mumbai. Mr. Budhia is as Chartered Accountant and have extensive experience for conducting statutory and tax audits. He has experience in

		internal audits and taxation matters.
Dr. Ashok Mammen	Bureau Veritas Certification India (P) Ltd.	Internal Reviewer PhD (Oils & Lubricants), M.Sc. (Analytical chemistry, Over 20 years of experience in petrochemical sector. He has been involved validation / review of more than 50 CDM projects.