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# VALIDATION REPORT

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## SRI BALAJI 6MW NON- CONVENTIONAL RENEWABLE SOURCES BIOMASS POWER PROJECT IN INDIA

REPORT No. 2005-9013

REVISION No. 01

DET NORSKE VERITAS



# VALIDATION REPORT

Date of first issue: 2006-03-15	Project No.: 40259013
Approved by:  Einar Telnes	Organisational unit: DNV Certification, International Climate Change Services
Client: Sri Balaji Biomass Power(P) Ltd	Client ref.: Mr. Soma Pradyumna

DET NORSKE VERITAS AS

DNV Certification

Veritasveien 1,  
1322 HØVIK, Norway  
Tel: +47 67 57 99 00  
Fax: +47 67 57 99 11  
<http://www.dnv.com>  
Org. No: NO 945 748 931 MVA

## Summary:

Det Norske Veritas Certification Ltd. (DNV) has performed a validation of the “Sri Balaji 6MW non-conventional renewable sources biomass power” project (hereafter called “the project”) in 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 modalities and procedures, the simplified modalities and procedures for small-scale CDM project activities and the subsequent decisions by the CDM Executive Board. This validation report summarizes the findings of the validation.

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

In summary, it is DNV’s opinion that the project, as described in the revised project design document of February 2006, meets all relevant UNFCCC requirements for the CDM is eligible as category I.D small-scale CDM project activity and correctly applies the approved simplified baseline and monitoring methodology AMS-I.D. Hence, DNV requests the registration of the “Sri Balaji 6MW non-conventional renewable sources biomass power” project as a CDM project activity.

Report No.: 2005-9013		Subject Group: Environment		<b>Indexing terms</b>		
Report title: Sri Balaji 6MW non-conventional sources biomass power project in India				Key words Climate Change Kyoto Protocol Validation Clean Development Mechanism		Service Area Verification
						Market Sector
						Energy sector
Work carried out by: Chandrasekhara Kumaraswamy, AstakalaVidyacharan				<input checked="" type="checkbox"/> No distribution without permission from the client or responsible organisational unit  <input type="checkbox"/> free distribution within DNV after 3 years  <input type="checkbox"/> Strictly confidential  <input type="checkbox"/> Unrestricted distribution		
Work verified by: Einar Telnes						
Date of this revision: 2006-03-15		Rev. No.: 01	Number of pages: 11			
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***Abbreviations***

AP	Andhra Pradesh
APERC	Andhra Pradesh Electricity Regulatory Commission
APPCB	Andhra Pradesh Pollution Control Board
APTRANSCO	Andhra Pradesh Transmission company
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CH <sub>4</sub>	Methane
CL	Clarification request
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
DNV	Det Norske Veritas
DNA	Designated National Authority
EIA	Environmental Impact Assessment
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
KWh	Kilo Watt hour
MW	Mega Watts
MNES	Ministry of Non-conventional energy sources
MP	Monitoring Plan
NEDCAP	The Non-Conventional Energy Development Corporation of Andhra Pradesh
N <sub>2</sub> O	Nitrous oxide
NGO	Non-governmental Organisation
ODA	Official Development Assistance
PDD	Project Design Document
PPA	Power Purchase Agreement
SBBPPL	Sri Balaji Biomass Power (P) Ltd.
USD	United States Dollar
UNFCCC	United Nations Framework Convention on Climate Change



## 1 INTRODUCTION

The Sri Balaji Biomass Power (P) Ltd. has commissioned Det Norske Veritas Certification Ltd. (DNV) to validate the “Sri Balaji 6MW Non-Conventional Renewable Sources Biomass Power” project (hereafter called “the project”) in India. This report summarises the findings of the validation of the project, performed on the basis of UNFCCC criteria for small-scale CDM projects, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation team consisted of the following personnel:

- |                               |             |  |
|-------------------------------|-------------|--|
| 1. Chandrasekhara Kumaraswamy | DNV, India  | Team Leader, GHG Auditor                 |
| 2. Astakala Vidyacharan       | DNV, India  | GHG Auditor                              |
| 3. Einar Telnes               | DNV, Norway | Technical verifier, Energy sector Expert |

### 1.1 Validation Objective

The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the 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).

### 1.2 Scope

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords, the simplified modalities and procedures for small-scale CDM project activities and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology AMS-ID. The validation team has, based on the recommendations in the Validation and Verification Manual /4/ employed a risk-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

### 1.3 Description of Proposed CDM Project

The project is a 6.0 MW (gross) capacity grid-connected biomass based power project. The project utilises the available biomass in the region such as rice husk, juliflora, cotton stalks etc. for generation of electricity. The technology used in the project activity is indigenous. The project will export power to the nearest grid situated at Chennur Village, Cuddapah District of Andhra Pradesh.

The objective of the project is to reduce anthropogenic GHG emissions by displacing fossil fuel based electricity generation with environmentally sustainable resources such as rice husk and



other available renewable biomass, thereby indirectly helping reducing the power deficit in the state of Andhra Pradesh and also contribute towards natural resources conservation such as coal. While the project emissions are negligible, baseline emissions are calculated to be 0.830 kgCO<sub>2</sub> per kWh. The project is expected to result in emission reductions of 28 400 tonnes of CO<sub>2</sub> every year, during the first seven years crediting period envisaged.

## 2 METHODOLOGY

The validation of the project started in the month of September, 2005, with hosting the PDD of the project at the UNFCCC website and inviting for public stakeholders comments.

The validation consisted of the following three phases:

- I a desk review of the project design and the baseline and monitoring methodology
- II follow-up interviews with project stakeholders
- III the resolution of outstanding issues and the issuance of the final validation report and opinion.

In order to ensure transparency, a validation protocol was customised for the project, according to the Validation and Verification Manual /4/. The protocol shows in transparent manner criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organises, 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 three tables. The different columns in these tables are described in Figure 1.

The completed validation protocol for the “Sri Balaji 6MW Non-Conventional Renewable Sources Biomass Power project” is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of validation protocol criteria or where a risk to the fulfilment of project objectives is identified. Corrective Action Requests (CAR) are issued, where:

- i) mistakes have been made with a direct influence on project results;
- ii) validation protocol requirements have not been met; or
- iii) there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be certified.

The term Clarification may be used where additional information is needed to fully clarify an issue.

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<b>Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities</b>			
<b>Requirement</b>	<b>Reference</b>	<b>Conclusion</b>	<b>Cross reference</b>
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 ( <b>OK</b> ), a <b>Corrective Action Request (CAR)</b> of risk or non-compliance with stated requirements or a request for <b>Clarification (CL)</b> where further clarifications are needed.	Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.

  

<b>Validation Protocol Table 2: Requirement Checklist</b>				
<b>Checklist Question</b>	<b>Reference</b>	<b>Means of verification (MoV)</b>	<b>Comment</b>	<b>Draft and/or Final Conclusion</b>
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different 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 ( <b>OK</b> ), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question (See below). A request for <b>Clarification (CL)</b> is used when the validation team has identified a need for further clarification.

  

<b>Validation Protocol Table 3: Resolution of Corrective Action Requests and Requests for Clarification</b>			
<b>Draft report corrective action requests and requests for clarifications</b>	<b>Ref. to Table 2</b>	<b>Summary of project participants' response</b>	<b>Final conclusion</b>
If the conclusions from the draft Validation are either a <b>Corrective Action Request</b> or a <b>Clarification Request</b> , these should be listed in this section.	Reference to the checklist question number in Table 2 where the <b>Corrective Action Request</b> or <b>Clarification Request</b> is explained.	The responses given by the project participants during the communications with the validation team should be summarised in this section.	This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

Figure 1 Validation protocol tables



## 2.1 Review of Documents

The PDD /1/ submitted by Sri Balaji Biomass (P) Ltd and additional background documents related to the project design and baseline like baseline calculation data, local stakeholder's comments and the monitoring plan were assessed /2/-/6/.

## 2.2 Follow-up Interviews

During the third week of October 2005, DNV performed interviews with Sri Balaji Biomass Power (P) Ltd representatives and local stakeholders subsequently to confirm selected information and to resolve issues identified in the document review. The views obtained during these interviews have been considered while arriving at the validation opinion.

The main topics of the interviews are summarised in Table 1.

**Table 1 Interview topics**

Interviewed organisation	Interview topics
Sri Balaji Bio Mass Power (P) Ltd.	➤ Further clarifications that the project activity itself is not a likely baseline scenario due to the existence of one or more of the following barriers: investment barriers, barriers due to prevailing practice or other barriers.
	➤ Clarifications on establishment of baseline, monitoring plan and emission reduction calculations
	➤ Resources, training needs and procedures for operation and maintenance
	➤ Monitoring methodology

### Stakeholder interviews

Persons Interviewed	Interview Topics
Zilla Parishad Chairman Cuddapa District	<ul style="list-style-type: none"> <li>• Overall impact of the project for the local environment</li> <li>• Job opportunities</li> <li>• Any complaints</li> </ul>
Mandal Revenue Officer Chennur Mandal	<ul style="list-style-type: none"> <li>• Local people reaction to the project</li> <li>• Economic impact on local population</li> </ul>
Mandal President Chennur Mandal	<ul style="list-style-type: none"> <li>• Implications due to biomass plant associated activities</li> <li>• Local benefits due to project</li> </ul>
Village President, Chennur village	<ul style="list-style-type: none"> <li>• Overall impact of project</li> <li>• Revenue benefits to village</li> <li>• Job opportunities, direct, indirect</li> </ul>
Biomass Suppliers	<ul style="list-style-type: none"> <li>• Availability of biomass</li> <li>• Cost of biomass</li> </ul>

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	<ul style="list-style-type: none"> <li>• Benefits due to project activity</li> </ul>
Divisonal Manager NEDCAP, Cuddapa Region	<ul style="list-style-type: none"> <li>• Availability of biomass around project site</li> <li>• Influence on other biomass projects</li> </ul>
Environment Engineer APPCB	<ul style="list-style-type: none"> <li>• Environmental performance of plant</li> <li>• Any complaints</li> <li>• Permissions</li> </ul>
Forest Range Officer flying squad, Cuddapa	<ul style="list-style-type: none"> <li>• Control on usage of restricted biomass</li> <li>• Potential threat to forests due to the project</li> <li>• Vigilance methodology</li> </ul>
Associate Professor KSRM Engg.College, Cuddapa	<ul style="list-style-type: none"> <li>• Opinion on impact of the project on the local environment</li> <li>• Socio-economic effect due to project</li> </ul>

### 2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve any outstanding issues which needed to be clarified for DNV's positive conclusion on the project design. The initial validation identified one *Corrective Action Requests* and nine requests for *Clarification*, and the project participants were invited to provide a response to these requests. The response provided by the project participants and the revised PDD have satisfactorily resolved DNV's concerns..

To guarantee the transparency of the validation process, the concerns raised by DNV and the response provided by the project participants are documented in Table 3 of the Validation Protocol in Appendix A to this report.



### 3 VALIDATION FINDINGS

In the following sections the findings of the validation are stated. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The final validation findings relate to the project design as documented and described in the revised and resubmitted project design documentation of February 2006.

#### 3.1 Participation Requirements

The project activity is being proposed as a unilateral project by Sri Balaji Biomass Power (P). Limited, Chennur village, Cuddapa District, Andhra Pradesh, which is the only project participant. The DNA of India approved the project on 28 October 2005. The host Party India meets all participation requirements.

The DNA of India has provided confirmation that the project assists in achieving sustainable development.

#### 3.2 Project Design

The project has a rated generation capacity of 6 MW and aims to export the electricity to the grid. The project will be connected to the Andhra Pradesh Transmission Company (APTRANSCO) grid through their 33/11 KV Chennur sub station, which is about 2km away from site

The technology used in the project is indigenously available in India and no transfer of technology is envisaged. The biomass based power plant generates electricity by utilizing the available biomass in the region, which will be primarily rice husk, juliflora, cotton stalks and chilli stalks. The plant consists of a condensing steam turbo generator unit coupled with a multiple fuel boiler of travelling grate type. The boiler has the capacity of generating 33 tones of steam per hour at a pressure of 67 kg/sq.cm and a temperature of 480<sup>0</sup>C.

The project results in reduction of GHG emissions by capacity addition to the grid, which is dominated by fossil fuel based power generators. The added advantage of the project will be in terms of additional income generated for the farmer and also in terms of jobs generated due to this project. The technology applied is deemed current good practice and is not expected to be replaced within the crediting period.

The civil construction of the project started in January 2003 and the plant commissioned in April 2004. The operational lifetime of the project is estimated around 25 years and a renewable crediting period of 7 years starting on 15 April 2004 is selected.

The validation did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards India.



### 3.3 Project Baseline

The project applies the approved baseline methodology for small scale project activities- AMS I.D. This baseline is applicable for renewable energy based projects that supply electricity to the grid and includes hydro, wind, geothermal and biomass projects. The project being a biomass based project conforms to the category ID of small scale projects.

As per the guidelines of MNES, the project can use coal up to 25% as support fuel from Non-Conventional Energy Development Corporation of Andhra Pradesh Ltd.

The application of the simplified baseline methodology AMS-I.D is justified, as the project is a 6MW renewable energy based project activity supplying electricity to the grid. The baseline scenario is considered as the fossil fuel based power generation in the Andhra Pradesh state grid.

A clarification was called for using state grid for baseline calculation. The proponent responded with calculations considering the baseline scenario as the Southern region electricity grid power generation. This is deemed appropriate.

The baseline emission coefficient is calculated using the combined margin emissions of the current generation mix. The selection of combined margin average based on the present generation mix is justifiable considering the future expansion projects coming up in the region. The generation pattern will not change significantly over the crediting period. The calculation sheets provided to the validation body have been verified and confirmed.

### 3.4 Additionality

The project demonstrates additionality mainly through the existence of tariff policy related barrier. In 2003-2004, policy changes related to the tariff rates in Andhra Pradesh reduced the tariff from Rs.3.48 per unit to Rs.2.28 per unit. While the policy change takes in to account the variable cost of power generation and fixes an increase of 5 % every year, the increasing cost of the raw material is creating an imbalance in the % increase in the variable cost and the actual operating cost. The policy change by which electricity units generated at plant load factors greater than 80 % are priced at Rs. 1.52 per unit, which is approximately Rs.0.24 less than the actual generating cost, is also seen as a main deterrent.

Based on above barrier, it has been substantiated that the project is additional and in the absence of benefits from CDM the project activity would not be viable, and capacity addition to the grid would have been by the addition of fossil fuel plants.

### 3.5 Monitoring Plan

The project is a renewable energy generation project and thus the monitoring requirement under category I.D. is used in this project. Although in the present scenario the project is not consuming any coal as fuel for power generation, as the project is having permission to use coal as a supporting fuel up to 25% annual basis, the provision for measuring the amount of biomass and fossil fuel is monitored apart from electricity generated and supplied to grid has been made.

The selected monitoring plan is in line with the monitoring methodology AMS-I.D – Metering the electricity generated by the renewable technology. The total electricity produced and auxiliary consumptions are monitored and the net electricity supplied to the nearest grid by the project activity multiplied by emission factor for the grid forms the baseline for the project activity.



The direct emissions due to usage of coal (based of carbon content of the coal, if used) as fuel are considered as project emissions. Indirect emissions have also been considered, but are negligible such as due to transportation of bio-mass material and possible ash disposal.

Maintenance and calibration are being carried out as per the established internal procedures of Sri Balaji Biomass Power (P) Limited and in accordance with a power purchase agreement with APTRANSCO. All data will be archived in paper/electronic form and archived until two years after verification.

While the General Manager of SBBPPL is responsible for project management, the plant manager is responsible for data recording and for archiving and reporting. Procedures for internal audit, performance reviews and corrective actions have also been established. The provided monitoring plan is adequate to provide necessary information for the calculation of electricity generated, the fuel consumed and analysis of the biomass used and also can measure the emissions occurring with the project boundary due to input power consumption in terms of auxiliary consumption.

### 3.6 Calculation of GHG Emissions

Direct onsite emissions are restricted to the use of fuel in the boiler, when used during shortfall in rice husk supply. Indirect emissions, such as due to energy consumed during construction and transportation have been considered as negligible.

The PDD addresses the only source of leakage activity as that contributed by GHG emissions outside the project boundary such as transportation of biomass from the source within a 50 km radius to Sri Balaji Biomass Power (P) Limited. The emissions due to transportation have been computed as 246 t CO<sub>2</sub> /year .It has been argued that the same type of GHG emissions occur during transportation of coal from coal mines for which transport distances are much longer. Hence emissions due to transportation of biomass in comparison are considered negligible and are therefore not considered.

Uncertainty is expected to be only on account of non availability of biomass. The substitute will be usage of coal, and the monitoring of coal has been addressed in the PDD.

The project replaces mainly fossil fuel-based electricity generation. While the project emissions are zero, baseline emissions are calculated to be 0.830 kgCO<sub>2</sub> per KWh. The project is expected to result in emission reductions of 200 130 tonnes of CO<sub>2</sub>, during the first 7 years of crediting period.

### 3.7 Environmental Impacts

The environmental impacts of the project are sufficiently assessed and have been assessed as those restricted to suspended particulate matter, nitrogen oxides and sulphur dioxide apart for generation of fly ash. An ESP has been installed and the project is designed to adhere to the stipulations as per the state pollution control board. Ash collected is disposed for manufacturing of fly ash bricks.

As per the MoEF, an EIA is not required for projects costing less than USD 22 Million, which is the case for this project.



### **3.8 Comments by Local Stakeholders**

The comments from local stakeholders were invited through personal communication. All stakeholders welcomed the project and no adverse comments were received.

## **4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS**

The PDD of dated 04<sup>th</sup> September 2005 version 1 publicly available on DNV's climate change website ([www.dnv.com/certification/climatechange](http://www.dnv.com/certification/climatechange)) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 2005-09-07 to 2005-10-06. No comments were received.



## 5. VALIDATION OPINION

*Det Norske Veritas Certification Ltd. (DNV) has performed a validation of the “Sri Balaji 6MW Non-Conventional Renewable Sources Biomass Power Project” in Chennur Village, Chennur Mandal, Cuddapah District, Andhra Pradesh in 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 modalities and procedures and the subsequent decisions by the CDM Executive Board.*

*The validation has confirmed that the project correctly applies the simplified baseline and monitoring methodology AMS-I.D. The determination of the baseline is well elaborated, transparent and sufficiently supported with facts. The selected baseline scenario, i.e. baseline emissions, is reasonable for the selected 7 year crediting period. Moreover, an analysis of the policy and financial barriers of the project demonstrates that project is not a likely baseline scenario.*

*The project will contribute to sustainable development through renewable energy generation and resource utilisation. The DNA of India has confirmed that the project assists in achieving sustainable development and has accorded the approval for the project on 28<sup>th</sup> October 2005.*

*The validation did not reveal any information indicating that the project can be seen as a diversion of ODA funding towards India.*

*The project results in the reduction of GHG emissions those are real, measurable and give long-term benefits and that are additional to what would have occurred in the absence of the project.*

*The monitoring plan makes sufficient provision for monitoring relevant project and baseline emission indicators. Responsibilities and authorities for project management, monitoring and reporting and QA/QC procedures have also been addressed.*

*In summary, it is DNV's opinion that the project, as described in the revised project design document version 2 of February 2006, meets all relevant UNFCCC requirements for the CDM, is eligible as category I D small-scale CDM project activity and correctly applies the approved simplified baseline and monitoring methodology AMS I.D. Hence, DNV requests the registration of the “Sri Balaji 6MW Non-Conventional Renewable Sources Biomass Power Project” as a CDM project activity.*



## 6. REFERENCES

*Documents provided by the project proponent that relate directly to the project:*

- /1/ Sri Balaji Biomass Power ( P) Ltd : CDM PDD for “Sri Balaji 6MW Non-Conventional Renewable Sources Biomass Power Project” in , Chennur Village, Chennur Mandal, Cuddapah District, Andhra Pradesh “ in India Version 1 September 2005 and Version 2 February 2006
- /2/ Supporting Excel Sheet Calculations for emission factor - Grid emission factor transport emission
- /3/ Indian DNA Host country approval letter Dated 28<sup>th</sup> October 2005

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

- /4/ International Emission Trading Association (IETA) & the World Bank’s Prototype Carbon Fund (PCF): *Validation and Verification Manual*. <http://www.vvmanual.info>
- /5/ Appendix B of the simplified modalities and procedures for small-scale CDM project activities: *Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories*. Version 07: 28 November 2005.
- /6/ Revised 1996 IPCC guidelines for national green house gas inventories – Reference Manual (Volume 3)

*Persons interviewed during the validation, or persons who contributed with other information that are not included in the documents listed above:*

- /7/ Mr. Soma Pradyumna – Director Sri Balaji BioMass Power (P) Ltd.
- /8/ Mr. B.M .K. Murthy – General Manager Sri Balaji BioMass Power (P) Ltd.

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## **APPENDIX A**

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### **VALIDATION PROTOCOL FOR SMALL-SCALE CDM PROJECT ACTIVITIES**

**Table 1 Mandatory Requirements for Small Scale 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	The project has been proposed as a unilateral project	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, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	<del>CAR-1</del> 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 authority of each party involved	Kyoto Protocol Art. 12.5a, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	<del>CAR-1</del> OK	
5. The emission reductions should 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.1 to E.4
6. Reduction in GHG emissions must be additional to any that 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	Kyoto Protocol Art. 12.5.c, Simplified Modalities and Procedures for Small Scale CDM Project Activities §26	OK	Table 2, Section B.2.1 The policy barrier is applicable
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance	Decision 17/CP.7	OK	The project is being proposed as a unilateral project

\* MoV = Means of Verification, DR= Document Review, I= Interview

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Requirement	Reference	Conclusion	Cross Reference/ Comment
8. Parties participating in the CDM shall designate a national authority for the CDM	CDM Modalities and Procedures § 29	OK	DNA of India: National Clean Development Mechanism Authority, Ministry of Environment and Forests
9. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol	CDM Modalities and Procedures § 30, 31b	OK	India ratified Kyoto Protocol on 26 August 2002
10. The participating Annex I Party's assigned amount shall have been calculated and recorded	CDM Modalities and Procedures §31b	Annex I Party has not been identified yet	The project is being proposed as a unilateral project
11. The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7	CDM Modalities and Procedures §31b	As Above	The project is being proposed as a unilateral project
12. The proposed project activity shall meet the eligibility criteria for small scale CDM project activities set out in § 6 (c) of the Marrakesh Accords and shall not be a debundled component of a larger project activity	Simplified Modalities and Procedures for Small Scale CDM Project Activities §12a,c	OK	Table 2, Section A.1
13. The project design document shall conform with the Small Scale CDM Project Design Document format	Simplified Modalities and Procedures for Small Scale CDM Project Activities, Appendix A	OK	
14. The proposed project activity shall confirm to one of the project categories defined for small scale CDM project activities and uses the simplified baseline and monitoring methodology for that project category	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22e	OK	Table 2, Section A.1.3, B and D
15. Comments by local stakeholders are invited, and a summary of these provided	Simplified Modalities and Procedures for Small		Table 2, Section G Local Stake holders

\* MoV = Means of Verification, DR= Document Review, I= Interview

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Requirement	Reference	Conclusion	Cross Reference/ Comment
	Scale CDM Project Activities §22b	OK	are consulted by the project proponent
16. If required by the host country, an analysis of the environmental impacts of the project activity is carried out and documented	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22c	OK	Table 2, Section F
17. Parties, stakeholders and UNFCCC accredited NGOs have been invited to comment on the validation requirements and comments have been made publicly available	Simplified Modalities and Procedures for Small Scale CDM Project Activities §23b,c,d	OK	The PDD was published on 7 <sup>th</sup> September 2005 on <a href="http://www.dnv.com/certification/climate">http://www.dnv.com/certification/climate</a> change. Parties, stakeholders and NGO's were through the web site invited to provide comments until October 6 <sup>th</sup> 2005.  No comments were received.

**Table 2 Requirements Checklist**

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
<b>A. Project Description</b> The project design is assessed.					
<b>A.1. Small scale project activity</b> It is assess whether the project qualifies as small scale CDM project activity.					
A.1.1. Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	PDD	DR	The Project is a 6 MW power generation unit using renewable energy as source of fuel. This falls under Type I, Category D of the small scale CDM projects and as the power generated is below the stipulated limit of 15MW, this project qualifies as a small scale CDM project		OK
A.1.2. The small scale project activity is not a debundled component of a larger project activity?	PDD	DR	No, the project proponent does not propose another biomass plant. The proponent has not registered any small scale CDM project in the last 2 years and the project boundary is not within 1 km radius of any other proposed small scale CDM project.		OK
A.1.3. Does proposed project activity confirm to one of the project categories defined for small scale CDM project activities?	PDD	DR	The project confirms to Type I (Renewable energy projects) category I.D (Renewable electricity generation for a grid)		OK

\* MoV = Means of Verification, DR= Document Review, I= Interview

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
<b>A.2. Project Design</b> Validation of project design focuses on the choice of technology and the design documentation of the project.					
A.2.1. Are the project's spatial (geographical) boundaries clearly defined?	PDD	DR	The boundaries are clearly defined in PDD The spatial boundary of the project includes the project site (up to the evacuation point of electricity to state grid) and includes biomass collection and storage. The project is located in Chennur Village, Cuddapah District, Andhra Pradesh, India. The point of grid connection is the Chennur sub-station, approximately 2 Km from the project.		OK
A.2.2. Are the project's system (components and facilities used to mitigate GHG's) boundaries clearly defined?	PDD	DR	The project boundary covers fuel storage, travelling grate type boiler, condensing steam turbo generator unit and related auxiliary equipment.		OK
A.2.3. Does the project design engineering reflect current good practices?	PDD	DR	Yes, the project design engineering reflects good practices. The boiler is designed to burn 100% agricultural residue (rice husk, groundnut husk, Julie flora, cotton stalks and sunflower stalks). The turbine is of condensing type.		OK
A.2.4. Will the project result in technology transfer to the host country?	PDD	DR	The technology is already available in the country and thus no technology transfer is envisaged in the project		OK
A.2.5. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project	PDD	DR	The project will require minimal additional training for project maintenance since the primary technologies applied in this project are already		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
period? Does the project make provisions for meeting training and maintenance needs?			established in India and technology transfer to the host country is not called-for.		
<b>A.3. Contribution to Sustainable Development</b> The project's contribution to sustainable development is assessed					
A.3.1. Will the project create other environmental or social benefits than GHG emission reductions?	PDD	DR	Yes, the proposed project is providing benefits such as generating employment during construction and operation of the project, ensuring environmental wellbeing and in bridging the gap between demand and supply of power.		OK
A.3.2. Will the project create any adverse environmental or social effects?	PDD	DR	Andhra Pradesh Pollution Control Board has issued the consent for establishment (Order no: CFE/APPCCB/HO/R00/CFE/2002/35-1673 dt. 06/11/2002). As per the consent order the project is permitted to use rice husk/ cotton stalks/ juliflora/ sunflower stalks/ground nut shells/chilly stalks and coal (up to 20%on annual basis) as fuel. During the site visit, it was found that wood from mango trees are used. It has also to be clarified and demonstrated that the woody biomass used is renewable.	<del>CL1</del>	OK
A.3.3. Is the project in line with sustainable development policies of the host country?	PDD	DR	Approval from the DNA of India has not been obtained.	<del>CAR-4</del>	OK
A.3.4. Is the project in line with relevant legislation and plans in the host country?	PDD	DR	Refer F.1.1	<del>CL8</del>	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
<b>B. Project Baseline</b> The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.					
<b>B.1. Baseline Methodology</b> It is assessed whether the project applies an appropriate baseline methodology.					
B.1.1. Is the selected baseline methodology in line with the baseline methodologies provided for the relevant project category?	PDD	DR	Yes. The project applies one of the simplified baseline methodologies proposed for the small-scale project activity category I.D, i.e., for renewable energy that displaces electricity the simplified baseline is the electricity consumption times the relevant emission factor calculated as the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kgCO <sub>2</sub> /kWh).		OK
B.1.2. Is the baseline methodology applicable to the project being considered?	PDD	DR	The selection of emission coefficient as the conservative value obtained through calculations based on (i) average of the “approximate operating margin” and the “build margin” and (ii) the weighted average of the current generation mix has been justified and considered appropriate for this project		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
<b>B.2. Baseline Determination</b> It is assessed whether the project activity itself is not a likely baseline scenario and whether the selected baseline represents a likely baseline scenario.					
B.2.1. Is it demonstrated that the project activity itself is not a likely baseline scenario due to the existence of one or more of the following barriers: investment barriers, technology barriers, barriers due to prevailing practice or other barriers?	PDD	DR	<p>The project demonstrates additionality mainly through the existence of tariff policy related barrier. In 2003-2004, policy changes related to tariff rates in Andhra Pradesh reduced the tariff from Rs.3.48 per unit to Rs.2.28 per unit. While the policy change takes in to account the variable cost of power generation and fixes an increase of 5 % every year, the increasing cost of the raw material is creating an imbalance in the % increase in the variable cost and the actual operating cost. The policy change by which electricity units generated at plant load factors greater than 80 % are priced at Rs. 1.52 per unit, which is approximately Rs.0.24 less than the actual generating cost, is also seen as a main deterrent.</p> <p>However, it remains to be more clearly demonstrated that the project would not have occurred anyway. Substantiation by way of:</p> <ul style="list-style-type: none"> <li>- How is it demonstrated that CDM was considered at the start of the project activity.</li> <li>- How many such low capacity biomass plants are operating in India, and especially in Andhra Pradesh</li> </ul> <p>Data on biomass pricing trends and availability is called for justification</p>	<del>CL-2</del>	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
B.2.2. Is the application of the baseline methodology and the discussion and determination of the chosen baseline transparent and conservative?	PDD	DR	The baseline scenario considered is the Andhra Pradesh electricity grid power generation. The conservativeness of the baseline has not been clearly demonstrated as the baseline does not consider other options such as Southern grid.	<del>CL3</del>	OK
B.2.3. Are relevant national and/or sectoral policies and circumstances taken into account?	PDD	DR	Yes, national policy favours the renewable energy		OK
B.2.4. Is the baseline selection compatible with the available data?	PDD	DR	Refer comments under B.2.2	<del>CL3</del>	OK
B.2.5. Does the selected baseline represent the most likely scenario describing what would have occurred in absence of the project activity?	PDD	DR	Yes, all data are drawn on the most recent years and all future expansion data are based on sanctioned projects in both renewable and fossil fuel based sectors and thus thermal power plants or hydro power plants are the most likely scenarios in the southern part of India and these represent the most likely scenario in absence of the project activity.		OK
<b>C. Duration of the Project / Crediting Period</b> It is assessed whether the temporary boundaries of the project are clearly defined.					
C.1.1. Are the project's starting date and operational lifetime clearly defined?	PDD	DR	Yes the project starting date is January 2003 and the expected operational life time is 25 years. The start date of the project has not been clearly indicated	<del>CL4</del>	OK
C.1.2. Is the assumed crediting time clearly defined (renewable crediting period of seven years with two possible renewals or fixed crediting period of 10 years with no	PDD	DR	Yes, A renewable crediting period has been chosen, with the start date of the first renewable period as 15/04/2005. A clarification is called-for on the actual start of the crediting period, as in section	<del>CL4</del>	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
renewal)?			E, in all other calculations and during the site visit, it is apparent that the crediting period being considered is 2004		
<b>D. Monitoring Plan</b> The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed.					
<b>D.1. Monitoring Methodology</b> It is assessed whether the project applies an appropriate monitoring methodology.					
D.1.1. Is the selected monitoring methodology in line with the monitoring methodologies provided for the relevant project category?	PDD	DR	Yes, The monitoring methodology – Metering the electricity generated by the renewable technology - adopted for the project activity is in accordance with Category I.D. contained in Appendix B of the simplified M&P.		OK
D.1.2. Is the monitoring methodology applicable to the project being considered?	PDD	DR	Yes.		OK
D.1.3. Is the application of the monitoring methodology transparent?	PDD	DR	Yes, the application of the monitoring methodology is simple and transparent.		OK
D.1.4. Will the monitoring methodology give opportunity for real measurements of achieved emission reductions?	PDD	DR	Yes.		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
<b>D.2. Monitoring of Project Emissions</b> It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.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?	PDD		As the project activity envisages use of coal as an alternate fuel in case of shortage of biomass material, monitoring data to also include consumption of coal in the monitoring plan.	CL5	OK
<b>D.3. Monitoring of Leakage</b> If applicable, it is assessed whether the monitoring plan provides for reliable and complete leakage data over time.					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	PDD		The PDD addresses the GHG emissions outside the project boundary such as transportation of biomass from the source within a 50 km radius to Sri Balaji Biomass Power (P) Limited. The emissions due to transportation have been computed as 246 t CO <sub>2</sub> /year. It has been argued that the same type of GHG emissions occur during transportation of coal from coal mines where distances are much larger... Hence emissions due to transportation of biomass in comparison are considered negligible and are therefore not considered.		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
<b>D.4. Monitoring of Baseline Emissions</b> It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.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?	PDD		Yes, the baseline indicators have been chosen in line with the small-scale methodologies approved by the CDM EB.		OK
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	PDD	DR	Yes. The data will be recorded at the project site.		OK
D.4.3. Will it be possible to monitor / measure the specified baseline indicators?	PDD	DR	Yes, techniques do comply with good industry practice.		OK
D.4.4. Will the indicators give opportunity for real measurements of baseline emissions?	PDD	DR	Yes		OK
<b>D.5. Project Management Planning</b> It is checked that project implementation is properly prepared for and that critical arrangements are addressed.					
D.5.1. Is the authority and responsibility of project management clearly described?	PDD	DR	The authority and responsibility for project management has to be formally described.	<del>CL-6</del>	OK
D.5.2. Is the authority and responsibility for registration monitoring measurement and reporting clearly described?	PDD	DR	Available but need to be formalised	<del>CL-6</del>	OK
D.5.3. Are procedures identified for training of monitoring personnel?	PDD	DR	As in D.5.2	<del>CL-6</del>	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
D.5.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR	Emergencies like fire in storage area can cause unintended emission. The emergency preparedness in such situation needs to be elaborated.	<del>CL7</del>	OK
D.5.5. Are procedures identified for calibration of monitoring equipment?	PDD	DR	Calibration of instruments is being done but procedures need to be formalised.	<del>CL6</del>	OK
D.5.6. Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR	Available but need to be formalised.	<del>CL6</del>	OK
D.5.7. Are procedures identified for monitoring, measurements and reporting?	PDD	DR	Available but need to be formalised	<del>CL6</del>	OK
D.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)	PDD	DR	Available but need to be formalised	<del>CL6</del>	OK
D.5.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR	As in D.5.7	<del>CL6</del>	OK
D.5.10. Are procedures identified for internal audits of GHG project compliance with operational requirements as applicable?	PDD	DR	Procedures need to be formalized.	<del>CL6</del>	OK
D.5.11. Are procedures identified for project performance reviews?	PDD	DR	Procedures need to be formalized	<del>CL6</del>	OK
D.5.12. Are procedures identified for corrective actions?	PDD	DR	Procedures need to be formalised	<del>CL6</del>	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
<b>E. Calculation of GHG emission</b> 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 reductions.					
<b>E.1. Project GHG Emissions</b> The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.					
E.1.1. Are all aspects related to direct and indirect project emissions captured in the project design?	PDD	DR	Direct onsite emissions are restricted to the use of fuel in the boiler. Indirect emissions, such as due to energy consumed during construction and transportation have been considered as negligible.		OK
E.1.2. Have all relevant greenhouse gases and sources been evaluated?	PDD	DR	Yes		OK
E.1.3. Do the methodologies for calculating project emissions comply with existing good practice?	PDD	DR	The calculations are in line with the methodology laid down as per approved methodologies for Renewable electricity generation for the grid and thus is complying with the good practices		OK
E.1.4. Are the calculations documented in a complete and transparent manner?	PDD	DR	Yes.		OK
E.1.5. Have conservative assumptions been used?	PDD	DR	The auxiliary power consumptions and internal efficiencies are taken care of as the calculations are on the actual amount of power exported. Thus the calculations are conservative in nature		OK
E.1.6. Are uncertainties in the project emissions	PDD	DR	The project proponent has to account for emissions due to non renewable biomass. ( Refer also	<b>CL1</b>	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
estimates properly addressed?			comments under A.3.2)		
<b>E.2. Leakage</b> 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.					
E.2.1. Are leakage calculation required for the selected project category and if yes, are the relevant leakage effects assessed?	PDD	DR	The PDD addresses the only source of leakage activity as that contributed by GHG emissions outside the project boundary such as transportation of biomass from a radius of 50 KM. Emissions due to transportation of biomass (that has been estimated 246 t CO2/Yr) has been considered negligible and hence not considered.		OK
<b>E.3. Baseline GHG Emissions</b> The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.					
E.3.1. Are the baseline emission boundaries clearly defined and do they sufficiently cover sources for baseline emissions?	PDD	DR	The baseline emissions are defined in accordance with Type I.D in the CDM small-scale methodology scheme.		OK
E.3.2. Are all aspects related to direct and indirect baseline emissions captured in the project design?	PDD	DR	All the emission sources have been captured in the project design.		OK
E.3.3. Have all relevant greenhouse gases and sources been evaluated?	PDD	DR	Yes.		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
E.3.4. Do the methodologies for calculating baseline emissions comply with existing good practice?	PDD	DR	Yes, as recommended by appendix B of Simplified M&P		
E.3.5. Are the calculations documented in a complete and transparent manner?	PDD	DR	Yes		OK
E.3.6. Have conservative assumptions been used?	PDD	DR	The calculations are based on the actual power purchased by APGENCO and is thus data driven and conservative in nature		
E.3.7. Are uncertainties in the baseline emissions estimates properly addressed?	PDD	DR	Yes.		OK
<b>E.4. Emission Reductions</b> Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.					
E.4.1. Will the project result in fewer GHG emissions than the baseline case?	PDD	DR	The project replaces fossil fuel-based electricity generation. While the project emissions are zero, baseline emissions are calculated to be 0.830 kgCO <sub>2</sub> per KWh. The project is expected to result in emission reductions of 200,130 tonnes of CO <sub>2</sub> during the first seven year crediting period		OK
<b>F. Environmental Impacts</b> It is assessed whether environmental impacts of the project are sufficiently addressed.					
F.1.1. Does host country legislation require an analysis of the environmental impacts of the project activity?	PDD	DR	As per the MoEF, an EIA is not required for projects costing less than USD 22 Millions, as is the case with the proposed project.  Status with respect to availability of consents to	<del>CL-8</del>	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
			establish / operate from the APSCB is not clear		
F.1.2. Does the project comply with environmental legislation in the host country?	PDD	DR	As in F.1.1	<del>CL8</del>	OK
F.1.3. Will the project create any adverse environmental effects?	PDD	DR	The PDD does not address the likely environmental impacts the project is likely to create, such as effects of suspended particulate matter, Nitrogen oxides and Sulphur dioxide apart for generation of fly ash. Whether the above are in line with the stipulations of the state pollution control also needs to be evidenced.	<del>CL9</del>	OK
F.1.4. Have environmental impacts been identified and addressed in the PDD?	PDD	DR	As in F.1.3	<del>CL9</del>	OK
<b>G. Comments by Local Stakeholder</b> Validation of the local stakeholder consultation process.					
G.1.1. Have relevant stakeholders been consulted?	PDD	DR	Yes the following relevant stakeholders have been consulted - Local community / administrative authorities comprising of Village Panchayat, District local administration and Biomass Suppliers;APTRANSCO and other Regulatory Authorities		OK
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	The comments from local stakeholders were invited through personal communication.		OK
G.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance	PDD	DR	Not specifically required for such small scale biomass projects under the Indian legislation.		OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
with such regulations/laws?					
G.1.4. Is a summary of the comments received provided?	PDD	DR	Summary of local stakeholder's comments is available.		OK
G.1.5. Has due account been taken of any comments received?	PDD	DR	No adverse comments have been received.		OK

\* MoV = Means of Verification, DR= Document Review, I= Interview

**Table 3 Resolution of Corrective Action and Clarification Requests**

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
<del>CAR-1</del> Written approval from the DNA of India has not been obtained	A.3.3, 3.4	Project got approval from HCA. The HCA letter is enclosed.	Host country approval letter dated 28 <sup>th</sup> October 2005 has been provided as evidence.
<del>CL-1</del> Andhra Pradesh Pollution Control Board has issued the consent for establishment (Order no: CFE/APPCB/HO/R00/CFE/2002/35-1673 dt. 06/11/2002). As per the consent order the project is permitted to use rice husk/ cotton stalks/ juliflora/ sunflower stalks/ground nut shells/chilly stalks and coal (up to 20%on annual basis) as fuel. During site visit, it was found that wood from mango trees are used. It has also to be clarified and demonstrated that the woody biomass used is renewable.	A 3.2	Based on the guidelines of Ministry of Non-Conventional Energy Sources (MNES), NEDCAP has issued a letter stating that, the following Biomass fuels can be used in Biomass Power Plants apart from Fossil fuels: 1 Woody Biomass : Juliflora, Casuarina, Subabul, Eucalyptus, Mango Cuttings, Cashew Cuttings and Saw Dust 2 Agricultural Waste: Rice Husk, Bengal gram and Black gram stalks, Maize stalks, Palmoil Wastes, Coconut shell and logs, Chilli stalks, Bagasse etc.  As per the NEDCAP guidelines, mango cuttings are allowed to use in the plant and small quantities of mango cuttings are used in the plant. However, plant allows the supply of only those mango cuttings which are cut from the non yield mango plants at the end of their life time.	Although the NEDCAP guidelines allow woody biomass, a formal consent from Pollution control Board has to be given. Further as part of accounting for zero project emissions it has to be clearly demonstrated that all the woody biomass used is renewable as per the latest definitions from the EB-23 meeting.  It is strongly recommended that the above issues are checked and reconfirmed at the time of verification.
<del>CL-2</del> It remains to be more clearly demonstrated	.B.2.1	The proof for the CDM consideration during the start of project activity is	The complimentary information provided has been accepted

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
<p>that the project would not have occurred anyway. Substantiation by way of:</p> <ul style="list-style-type: none"> <li>- How is it demonstrated that CDM was considered at the start of the project activity.</li> <li>- How many such low capacity biomass plants are operating in India, and especially in Andhra Pradesh</li> <li>- Data on biomass pricing trends and availability is called for justification</li> </ul>		<p>enclosed. Plant has envisaged the applicability of the project under Kyoto mechanism and considered the CDM revenue during the inception of the project activity.</p> <p>There are around 34 biomass power plants operating in the state of Andhra Pradesh. All the plants in the state are affected due to the increase in the fuel prices and reducing in the tariff. The increase in the biomass pricing over a period of time is demonstrated with the help of invoices to biomass suppliers attached.</p>	<p>The data provided on increase in biomass cost is reviewed and accepted</p>
<p><del>CL3</del></p> <p>The baseline scenario considered is the Andhra Pradesh electricity grid power generation. The conservativeness of the baseline has not been clearly demonstrated as the baseline does not consider other options such as Southern grid</p>	<p>B.2.2</p>	<p>As per recent directive from EB on usage of relevant grid for the projects in India, southern regional grid is considered for the project and baselines have been revised.</p>	<p>The complimentary information provided has been accepted</p>
<p><del>CL4</del></p> <p>The start date of the project has not been clearly indicated.</p> <p>While a renewable crediting period has been chosen, with the start date of the first renewable period as 15/04/2005. A clarification is called for on the actual start of the crediting period, as in section E, in all</p>	<p>C.1.1, C.1.2</p>	<p>Proof for the start date of the plant is attached. Start of crediting period will be from 15/4/2004.</p>	<p>The complimentary information provided has been accepted</p>

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
other calculations and during the site visit, it is apparent that the crediting period being considered is 2004			
<b>CL5</b> As the project activity envisages use of coal as an alternate fuel in case of shortage of biomass material, monitoring data to also include consumption of coal in the monitoring plan.	D.4.1	Presently plant uses no coal and the same will be monitored and recorded if coal is used in future. Monitoring of coal usage will also be included in the monitoring plan. The records of all kinds of fuel usage in the plant need to be sent to NEDCAP and the same will be reflected in the reports. The reports are made available during the verification process.	The complimentary information provided has been accepted.
<b>CL6</b> Procedures for project management covering authority & responsibility, measurement, monitoring, reporting, calibration, maintenance & emergency preparedness to be formalised.  Management system procedures related to documentation/record keeping, corrective actions, internal audits & performance reviews also to be formalised.		Procedures have been formalised and documented.	The complimentary information provided has been accepted.
<b>CL7</b> Emergencies like fire in storage area can cause unintended emission. The emergency preparedness in such situation needs to be elaborated.	D.5.8	Generally the working capital available for the plant is for two months period of time which restricts the storage of biomass material for more than 2 months. Due care is taken in terms of providing fire hydrant system and adequate fire extinguishers to handle	The complimentary information provided has been accepted.

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
		the emergency situations. The procedure for emergency preparedness plan in the plant is already developed and will be made available during the verification stage.	
<del>CL8</del> Status with respect to availability of consents to establish / operate from the APSCB is not clear	F.1.1, 1.2	Plant has applied for the renewal of the CFO and the proof for the same is enclosed.	The complimentary information provided has been accepted.
<del>CL9</del> The PDD does not address the likely environmental impacts the project is likely to create, such as effects of suspended particulate matter, nitrogen oxides and sulphur dioxide apart for generation of fly ash. Whether the above are in line with the stipulations of the state pollution control also needs to be evidenced	F 1.3, 1.4	<p>Though EIA is not required for the power plants costing less than Rs. 100 crore as per MoEF guidelines, plant has adopted several measures to mitigate impacts to environment due to project activities. Measures taken by the plant in this respect are as given below:</p> <ol style="list-style-type: none"> <li>1. As per the APPCB guidelines, to disperse pollutants from boiler, 50 m height stack is provided.</li> <li>2. The water and air quality checks will be made every month and the same will be submitted to concerned authorities. Plant will maintain different water and air quality parameters within the prescribed limits.</li> <li>3. To control the suspended particulate matter emissions from the plant,</li> </ol>	The complimentary information provided has been accepted.

Draft report corrective action requests and requests for clarification	Ref. to Table 2	Summary of project participants' response	Final conclusion
		<p>Electrostatic precipitator is provided.</p> <p>4. Acidic and alkaline effluent streams from the plant are neutralized in a neutralization tank.</p> <p>5. The boiler blow down due to its higher pH is neutralized before mixing with other effluent streams.</p> <p>6. The sanitary waste water is treated in septic tank followed by soak pit.</p> <p>7. Plantation of small and tall trees is done around the plant area for better environment.</p> <p>8. The ash collected from the ESP is utilized for brick manufacturing.</p>	

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