
VALIDATION REPORT

Acclaim Technology Services

Biomass Gasification Based Power Generation By Arashi Hi- Tech Bio-Power Private Limited

SGS Climate Change Programme

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Biomass Gasification based Power Generation by Arashi Hi-Tech Bio-Power Private Limited	SGS Climate Change Programme
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Summary

SGS India Pvt. Ltd., an affiliate of SGS United Kingdom Ltd. has made a validation of the CDM project activity “Biomass Gasification based Power Generation by Arashi Hi-Tech Bio-Power Private Limited” by Acclaim Technology Services, 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 scope of validation is the independent and objective review of the project design document, baseline study and monitoring plan and other relevant document of the project. The information in this document is reviewed against the criteria defined in the Marrakech Accords (Decision 17) and the Kyoto Protocol (Article 12) and subsequent guidance from the CDM Executive Board.

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

The overall validation process, from Contract Review to Validation Report & Opinion, was conducted using internal procedures (UK.PP.12 issue 3 dated 19/01/2007).

The first output of the validation process is a list of Corrective Actions Requests and New Information Requests (CAR and NIR), presented in Annex 2 of this document. Taking into account this output, the project proponent revised its project design document.

In summary, it is SGS’s opinion that the proposed CDM project activity correctly applies the baseline and monitoring methodology as mentioned in approved methodology adopted for the proposed project activity and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Subject:		
CDM validation		Indexing terms
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Abbreviations

AHBPPL	Arashi Hi-tech Bio Power Private Limited
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reductions
CO ₂	Carbon Dioxide
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EIA	Environment Impact Assessment
GHG	Green House Gas(es)
NGO	Non Government Organizations
I	Interview
IPCC	Intergovernmental Panel on Climate Change
ISHC	International Stakeholder Consultation
kWh	Kilo watt hour
MNES	Ministry of Non Conventional Energy Sources
MoEF	Ministry of Environment and Forest
MoV	Means of Verification
MP	Monitoring Plan
MWh	Mega watt hour
MT	Metric Tonne
NIR	New Information Request
PDD	Project Design Document
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention for Climate Change
TEDA	TamilNadu Energy Development Agency
IISc.	Indian Institute of science
TNEB	TamilNadu Electricity Board

Table of content

Table of content 4

1. Introduction 5

 1.1 Objective 5

 1.2 Scope 5

 1.3 GHG Project Description 5

 1.4 The names and roles of the validation team members 6

2. Methodology 6

 2.1 Review of CDM-PDD and additional documentation 7

 2.2 Use of the validation protocol 7

 2.3 Findings 7

 2.4 Internal quality control 8

3. Determination Findings 9

 3.1 Participation requirements 9

 3.2 Baseline selection and additionality 9

 3.3 Application of Baseline methodology and calculation of emission factors 10

 3.4 Application of Monitoring methodology and Monitoring Plan 11

 3.5 Project design 11

 3.6 Environmental Impacts 12

 3.7 Local stakeholder comments 12

4. Comments by Parties, Stakeholders and NGOs 12

 4.1 Description of how and when the PDD was made publicly available 13

 4.2 Compilation of all comments received 13

 4.3 Explanation of how comments have been taken into account 14

5. Validation opinion 14

6. List of persons interviewed 16

7. Document references 17

Annex 1: Local assessment

Annex 2: Validation Protocol

Annex 3: Overview of findings

Annex 4: Statement of Competency of Validation Team Members

1. Introduction

1.1 Objective

The Acclaim Technology Services has commissioned SGS to perform the validation of the project: "Biomass Gasification based Power Generation by Arashi Hi-Tech Bio-Power Private Limited" by with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

1.2 Scope

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

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

1.3 GHG Project Description

The primary purpose of the proposed project activity to established a 1.25 MW biomass gasification power project. Coconut residues are the major fuel for this project activity which is available abundant in this region. The biomass supplied to the two 500 kW gasifier is converted into producer gas ,then the generated producer gas is supplied to the five numbers of 250 kW producer gas engine. The generated electricity is exported to Tamilnadu Electricity Board (TNEB) grid and consumed by its sister company by wheeling.

Baseline Scenario:

Under the baseline scenario, the project uses equivalent amount of electricity from grid which is predominantly generated from thermal (fossil fuel based) power plants.

With Project Scenario:

The project activity uses biomass as fuel for generation of power, which in turn contributes to conservation of fossil fuel, a non-renewable natural resource and also reduces GHG emissions.

Leakage:

The leakage is considered due to the transportation of biomass.

Environmental & Social Impacts:

According to local assessor, there is no negative environmental and social impact expected due to the project activity.

1.4 The names and roles of the validation team members

Name	Affiliate	Role
Sanjeev Kumar	SGS India	Team Leader / Lead Auditor
Nikunj Agarwal	SGS India	Local Assessor

Statement of Competency of the team members are attached at Annex IV

2. Methodology

2.1 Review of CDM-PDD and additional documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

A site visit is usually required to verify assumptions in the baseline. Additional information can be required to complete the validation, which may be obtained from public sources or through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country). These may be undertaken by the local SGS affiliate. The results of this local assessment are summarized in Annex 1 to this report.

2.2 Use of the validation protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

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

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

Checklist Question	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
<i>The various requirements are linked to checklist questions the project should meet.</i>	<i>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.</i>	<i>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.</i>	<i>This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). New Information Request (NIR) is used when the validation team has identified a need for further clarification.</i>

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

2.3 Findings

As an outcome of the validation process, the team can raise different types of findings. In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a New Information Request (NIR) specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a Corrective Action Request (CAR). A CAR is 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 verified.

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

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity. Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

2.4 Internal quality control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3. Determination Findings

3.1 Participation requirements

The host Party for this project is India. India has ratified the Kyoto protocol on 26th Aug 2002. A Letter of Approval was missing so CAR01 was raised. The project proponent provided the letter dated 28th September 2007; issued by the Indian DNA (reference number 4/7/2007-CCC) has been provided by the client which was verified from the original copy. Hence CAR01 was closed out.

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

3.2 Baseline selection and additionality

The project has applied small scale methodology AMS I D version 10 dated 23rd December 2006. The project activity is producing electricity for consumption of its sister concern by wheeling through grid and the same amount of electricity would have been purchased from the grid in absence of project activity. The rest of electricity requirement of the sister concern is already being met by the grid which was verified with the electricity bill of the company. So the electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources and hence the grid was selected as the baseline for the project activity.

The project additionality was determined as per the Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities on the basis of Barrier due to prevailing practice followed by technological barriers. In order to get all the related documents on which basis the project was shown additional, CAR 12 was raised. The technological barriers faced by the project activity are:

- The technology used in this project activity is down draft gasification. The biomass used for the project activity is coconut shell. The major barrier for this technology is tar formation due to the pyrolysis of biomass. The increase in moisture content of the biomass would increase the tar formation. If the moisture is less than 15 % the tar content will be in the range of 50-250 mg/Nm³ and the increase in moisture level will increase the tar content to 700 mg/Nm³. This has been checked with the research paper "Biomass gasification technology – a route to meet energy needs" by 'S. Dasappa' Department of Aerospace Engineering, Centre for Sustainable Technologies, Indian Institute of Science, Bangalore 560012, India. (<http://www.ias.ac.in/currsci/oct102004/908.pdf>). This document is attached as Annex 1.
- Compared to up draft gasification the tar formation level is lower than down draft gasifier, even though it requires fine cooling and cleaning system to reduce the quantity of tar, particulate matter and moisture in the gas before supplied to the engine. The cooling and cleaning of producer gas is the major barrier for this technology. This has been checked with the research paper "BIOMASS GASIFICATION" by 'Anil K. Rajvanshi' Director, Nimbkar Agricultural Research Institute, PHALTAN-415523, Maharashtra, India. The document is attached as Annex 2.

- There is always a constriction at the level of the oxidation zone to force the pyrolysis products through a concentrated high temperature zone to achieve complete decomposition. This concentrated oxidation zone can cause sintering or slagging of ash resulting in clinker formation and consequent blocking of the constricted area and /or channel formation. Continuous rotating ash grates or other mechanical shaking may be required to avoid this problem. This has being cross checked with the book namely "BIOMASS THERMO-CHEMICAL CHARACTERISATION" published under MNES sponsored 'GASIFIER RESEARCH PROJECT Biomass Conversion Laboratory Chemical Engineering Department, Indian Institute of Technology, Delhi, New Delhi-110016'. The document is attached as Annex 3.
- Handling of producer gas in large quantities is very dangerous owing to the large inflammability limit of carbon monoxide ranging from 5% to 74%. Gas tight solid handling, continuous feeding is very difficult in gasification system and needs more operator attention. The same has been crosschecked with the link (<http://www.osha.gov/SLTC/healthguidelines/carbonmonoxide/recognition.html>). The document is attached as Annex 4.
- The gasifier operates under negative pressure and the feeding of biomass to the closed system is difficult. The producer gas generated in the gasifier having high inflammability range, if there is any leakage in the gasifier will lead to the higher operational risk. The man power and area required per MW level biomass gasification power project is relatively high compared to other thermal power projects.

Due to the above barriers associated with the project activity no other Industry other than Project Proponent in India has gone for generating power from biomass gasification. The project proponent provided the copy of annual report of the Ministry of Non – Conventional Energy Sources(2004-2005) in which chapter 7 page 4 it was publish that project activity is India's First 1 MW 100% Producer Gas based Grid connected Power Generation Project. The same was verified with MNES website (http://mnes.nic.in/annualreport/2004_2005_English/ch7_pg4.htm). Hence this CAR was closed out.

The board minutes dated 12th March 2003 were also provided for the CDM consideration before going ahead with the project activity. This was also cross verified by interviewing the Managing Director of the industry.

The project proponent is claiming credits for seven years crediting period starting from the date of registration.

Based on the findings above, it was concluded that the project activity was not a likely baseline scenario and hence additional to any that would have occurred in absence of project activity.

3.3 Application of Baseline methodology and calculation of emission factors

The proposed CDM project activity is the power generation using biomass and uses baseline methodology as described under AMS. I.D. version 10 dated 23rd December 2006 as per small scale CDM project activities. This category comprises renewable energy generation units, such as renewable biomass, that supply electricity to and/or displace electricity from an electricity distribution system that is or would have been supplied by fossil fuel fired generating unit.

CAR 10 was raised such as to ask the project proponent about the calculation sheet for emission reduction. In response of this CAR project proponent provides the calculation sheet which was checked

and found satisfactory. The leakage calculation is shown in Section B.6.3 in the PDD, hence this CAR 10 was closed out.

The emission factor value 0.86 tCO₂e/MWh used for the calculation of emission reduction in the PDD is the value published by CEA; hence this value of emission factor was accepted to DOE.

3.4 Application of Monitoring methodology and Monitoring Plan

The present CDM project activity uses monitoring methodology as described in AMS. I.D. version 10 dated 23rd December 2006 as per small scale CDM project activities.

NIR 13 was raised as the monitoring plan mentioned in the PDD version 01, was not clear on the use of main meter & check meter, number of meters available for measuring power generated, auxiliary consumption, import and export of electricity from the grid system. On the top of that nothing was mentioned, leakage monitoring & Biomass Assessment Report. The project proponent in their response provide the biomass Assessment report and clarifies that there is no need of leakage monitoring as we are considering 50 km radius for transportation of biomass and on this basis leakage calculation is explained in the PDD.

As per the biomass assessment report the availability of biomass is confirmed and also there is no need of leakage monitoring as project proponent has considered 50 Km radius for transportation of biomass for leakage calculation which is conservative and is accepted to DOE,

PDD version 02 is revised for monitoring of Export, import and net power exported to grid and the same is included in the monitoring plan of the PDD.

Both meters main meter and check meter are used to measure the power exported to the grid. The main meter reading is cross checked with the check meter reading. CER calculated for the net power exported to the grid. So there is no need to monitor the total generation. The net electricity exported to grid is calculated from the export and import meter reading. The net electricity exported to grid is used for CER calculation. Hence auxiliary consumption is not monitored for this project activity. Hence the NIR 13 was closed out.

NIR 14 was raised such as to know about the start-up fuel for gasifier and is there any auxiliary fuel used in gasifier during start up operation. In response of this CAR project proponent replies that for start up of gasifiers, the biomass in the gasifiers is ignited through the ignition ports with the help of a torch flame or blow torch. The blower is switched on using power from the Electricity board. The gas generated is flared till the required gas quality is attained. Thereafter the gas is fed to an engine and power is generated. There is no fossil fuel used during start up of gasifier.

The same was checked and verified with operator and plant personnel during site visit; hence this CAR was closed out.

3.5 Project design

The Project Design Document (PDD) was designed as per version 03 of guidelines laid for preparing PDD of small scale CDM project activity, hence the format of the present PDD version 02 was checked against it.

CAR 06 was raised as the PDD template for version 03 has not been applied correctly. The Page 1 & Page 2 of the PDD was not according to the version 03 of the small scale PDD.

In response of this CAR project proponent made the corrections in the revised PDD and the same was checked and found satisfactory, hence CAR06 was closed out.

NIR 07 was raised asking project proponent to provide any documentary evidence that the present project technology will not be substituted or replaced by the more efficient technologies during the crediting period. Project proponent has assured that project technology will not be substituted or replaced by more efficient technology during the crediting period and the letter of undertaking for the same has also been obtained from the project proponent. This was accepted and hence NIR7 was closed out.

NIR 08 was raised as there was no detail of extensive initial training for the project Activity in the PDD. In response of this NIR project proponent replies that the Initial training for the project activity was provided by the supplier and the photographs for the training programme has been submitted to DOE. The same has been verified by interviewing the plant personnel during site visit; hence this NIR was closed out.

The starting date of the project activity was not clear in the PDD version 01 and CAR 09 was raised, In response to this CAR, the project proponent provided the purchase order for supply, fabrication, installation and commissioning of gasification plant. The same has been checked and found satisfactory and 28th march 2003 has been accepted as the starting date for the project activity.

The project boundary given in the PDD was checked during site visit by the local assessor and found satisfactory.

3.6 Environmental Impacts

NIR 11 was raised such as to ask about the detail reference of the Host Country legislation, under which EIA study is not required for the project activity. In response of this NIR project proponent provides the notification of Host country Legislation under which EIA is not required, the same has been checked and found satisfactory, Also the project proponent submitted no Objection Certificate from Tamilnadu Pollution Control Board (TPCB), a local authority responsible for giving Environmental Clearance. Though EIA is not required for this kind of project activity, the project proponent had mentioned no negative environmental impacts due to project activity, under section D in the PDD. These were in compliance and even during local stakeholder consultation carried out by local assessor no negative comment was reported. Thus, NIR 11 was closed out.

3.7 Local stakeholder comments

The local stakeholder consultation process mentioned in the PDD version 01 does not provided any clear impression about the stakeholders were consulted for project activity, thus a CAR 02 was raised asking a full reference of governmental and non-governmental parties involved during the LSC meeting for the project activity.

The local stakeholders consulted for the project activity are the designated representatives of the local community, Tamilnadu Pollution Control Board, Tamilnadu Energy Development Agency (TEDA), Tamil nadu Electricity Board (TNEB), Village Administrative Officer (VAO) and Ministry Non-Conventional Energy Sources (MNES).

In response to the CAR 02, the project proponent has provided the copies of complete attendance list of the local stakeholder consultation meeting, NOC from Tamilnadu Pollution Control Board, NOC from local village community and the wheeling agreement made between the project proponent and Tamilnadu Electricity Board, the copies of the document were duly verified with the original copies and thus CAR 02 was closed out.

NIR 03 to NIR 05 were raised as the PDD version 01 was not clear on the media used to invite local stakeholder comments, minutes of the LSC meeting and the summary of comments received by stakeholder consultation process.

The LSC meeting was organised on 17th November 2005 at the plant site and the public notice for the invitation of comments towards the project activity was circulated among the vicinity to invite the local and any interested person to attend the meeting and express their opinion. No negative comment was appeared during consultation process. To ensure that the stakeholder process was conducted properly, the copies of public notice for invitation to the LSC meeting, NOCs from Tamilnadu Pollution Control Board and Wheeling agreement with Tamilnadu State Electricity Board were obtained and verified. The project participant also submitted one NOC from local village community to the validator. This was concluded that the LSC process was transparent and no adverse comment was raised on project activity. The MoM of the stakeholder consultation was checked during site visit and the copy of the same has been obtained for record and found satisfactory. Thus NIR 03, 04 and 05 were closed out.

4. Comments by Parties, Stakeholders and NGOs

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

4.1 Description of how and when the PDD was made publicly available

The PDD and the monitoring plan for this project were made available on the UNFCCC website <http://cdm.unfccc.int/Projects/Validation/DB/HG44C70CA9UZSYG4VJQ08I7USR48C1/view.html> from 29th March 2007 to 27th April 2007 and Comments were invited through the UNFCCC CDM homepage.

4.2 Compilation of all comments received

The project was up loaded for International stakeholder consultation (ISHC) for a period of 30 days and received one comment.

Comment number	Date received	Submitter	Comment
1	23/04/07	Name: Vikas Lamba P.Eng. City: Brampton Country: Canada Organisation: Yashparv Social Entrepreneurship Network	It is a wonderful use of biofuels to generate clean energy. Please make it a part of network to get involved other people as well in this pioneer activity. Thank you.

4.3 Explanation of how comments have been taken into account

Date: 23/04/07

Raised by: Vikas Lamba P.Eng.

Comment	Issue	Ref
1	It is a wonderful use of biofuels to generate clean energy. Please make it a part of network to get involved other people as well in this pioneer activity. Thank you.	3.2
Date: 27/5/2007 [Project Proponent] Thanks for your concern and opinion		
Date: [2007-07-29] [Comments from Local Assessor] [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]		

5. Validation opinion

SGS has performed a validation of the project: “Biomass Gasification based Power Generation by Arashi Hi-Tech Bio-Power Private Limited”, by Acclaim Technology Services. The Validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting. Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project will hence be recommended by SGS for registration with the UNFCCC.

Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project will hence be recommended by SGS for registration with the UNFCCC.

SGS has received confirmation by the host Party that the project activity assists it in achieving sustainable development.

By the effective utilization of surplus biomass residues available in the project region for Power generation through gasifier, the project results in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the barrier due to prevailing practice followed by Technological barriers demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. If the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

The validation is based on the information made available to SGS and the engagement conditions detailed in the report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence SGS can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

The DOE declares herewith that in undertaking the validation of this proposed CDM project activity it has no financial interest related to the proposed CDM project activity and that undertaking such a validation does not constitute a conflict of interest which is incompatible with the role of a DOE under the CDM.

6. List of persons interviewed

Date	Name	Position	Short description of subject discussed
15/5/2007	Mr. V. Chandramohan	Project Proponent	About the description of the project, additionality
15/5/2007	Mr. K. Prabakaran	Consultant	About the technology of the project activity and operation and monitoring.
16/5/2007	Mr. R. Mohanakrishnan	Consultant	About the CARs & NIRs and additionality
16/5/2007	Mr. R. Balasubramanian	Local Resident	Local Stake Holder Consultation

7 Document references

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

- /1/ Letter of Approval from DNA
- /2/ Modalities of communication
- /3/ Annex 1: "Biomass gasification technology – a route to meet energy needs"
- /4/ Annex 2: "BIOMASS GASIFICATION" by 'Anil K. Rajvanshi'
- /5/ Annex 3: "BIOMASS THERMO-CHEMICAL CHARACTERISATION"
- /6/ Annex 4: "OCCUPATIONAL SAFETY AND HEALTH GUIDELINE FOR CARBON MONOXIDE"
- /7/ PDD version 1 dated 25th March 2007 (web hosted)
- /8/ PDD version 2 dated 23rd May 2007 (Present)

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

- /1/ Board resolution document
- /2/ Proof of Additionality
 - o Annual report of the Ministry of Non – Conventional Energy Sources for Year 2004-2005.
- /3/ Local Stakeholder Consultation meeting minutes
- /4/ NOC from State Pollution Control Board
- /5/ Proof of project start date
- /6/ Supporting document ISHC
- /7/ Undertaking document for non-replacement of the implemented technology during the entire span of crediting period.
- /8/ Biomass Assessment Report.
- /9/ Wheeling Agreement between Tamilnadu State Electricity Board and the Project Proponent for power evacuation to the state grid system.
- /10/ AMS. I.D. version 10 dated 23rd December 2006

Annex 1: Local Assessment checklist

Ref.	MoV*				
1. Invitation for LSC meeting was sent to participate and communicate suggestions regarding the project activity. Documents are required to verify the same.	PDD E.1		Public notice for declaration and invitation to the LSC meeting has been validated and Letter of No Objection and appreciation provided by Tamilnadu Pollution Control Board and local community on project activity have been obtained to verify the transparency in consultation process.	Y	Y
2. The regulatory approval (consent to establish and operate the project) from the State Pollution Control Board is required to verify that local/legal requirements have been met.			The copy of consent to operate letter from State Pollution Control Board has been obtained and checked with original consent. It was found to be OK	Y	Y
3. Local stakeholders' comments are required to be verified for any adverse comment. 4. MoM of stakeholder consultation meeting.	PDD E.1 and E.2		Letter of No Objection from local community has been obtained and also the same has been confirmed during local stakeholder consultation during site visit. There is no adverse comment found in the letter. MOM also received and found to be satisfying.	Y	Y
5. It is required to be checked whether the project technology used is likely to be substituted by other or more efficient technologies within the project period.	PDD		Project proponent submitted an undertaking that the project activity will not be substituted by other or more efficient technologies within the entire project crediting period.	Y	Y
6. MoM of board meeting in which CDM was considered for the project activity. To be verified during site visit.	PDD		Project proponent submitted the MOM of board meeting which were also verified by seeing the original copy and also	Y	Y

			interviewing the Executive President.		
7. Availability of Biomass is to be checked, it should be 25% more than the rated consumption	PDD		Project Proponent Submitted the Biomass Assessment Report which confirms the availability of biomass in the region.	Y	Y
8. The possibility of anykind of project emission to be checked.	PDD		As the project is a biomass based power generation project and through checking and interviewing the respective personnel, it has been found that the gasification process does not involve combustion of any fossil fuel at any stage, thus nullifying the requirement of any project emission calculation.	Y	Y
9. It is required to be checked that the Small scale project activity is not a debundled component of a larger project.	PDD		It has been checked during site visit, that the project activity is not a debundled component of a larger project.	Y	Y
10. Is Project Proponent also using fossil fuel in the Gasifier during the initial start up.	PDD		It has been verified during the site visit by interviewing the Gasifier operator and the personnel in the plant that they are not using any fossil fuel for initial start up of gasifier.	Y	Y
11. Roles and responsibility for the implementation of monitoring plan is to be cross checked with the plant personnel.	PDD		The roles and responsibility in accordance with the monitoring plan is incorporated in the revised version of the PDD.	Y	Y
12. Proof of additionality, i.e barrier due to the first of its kind in the entire State, to be checked	PDD		The documentary evidence of barrier due to the first of its kind has been checked and all the facts and figures have been incorporated in the revised version of the	Y	Y

			PDD.		
13. EIA and NOC from the concerned authority for the project activity	PDD		EIA is not required for such type of project activity and the project proponent has obtained NOC from State Pollution Control Board.	Y	Y
14. Calculation spreadsheet for baseline and project emission reductions during project crediting period.	PDD		The excel spreadsheet for emission reduction calculation was obtained and checked for the relevant information in PDD.	Y	Y
15. 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)?	S.V./PDD		Renewable Crediting period of 7 years is selected for the project activity.	Y	Y
16. The description and illustration about the project .	S.V./PDD		In the PDD version 1 the project proponent mentioned the capacity of the project activity as 1 MW, but during discussion on site visit project proponent request to make it 1.25 MW as its installed capacity was 1.25 MW, the local assessor then checked the installed capacity and the supporting document for the producer gas engine and accept the capacity of the project as 1.25 MW in PDD version 02.	Y	Y

Annex 2 Validation Protocol

TABLE 1 PARTICIPATION REQUIREMENTS FOR CLEAN DEVELOPMENT MECHANISM (CDM) PROJECT ACTIVITIES (REF PDD, LETTERS OF APPROVAL AND UNFCCC WEBSITE)

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	PDD	DR	No funding of Annex I party available Project can proceed as unilateral project	Y	Y
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily.	PDD	DR	The project activity is likely to contribute to sustainable development. Letter of approval from Host Country (India) Designated National Authority (DNA) to be submitted by the project proponent.	CAR1	Y
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects.	PDD /UN FCC C Web -site	DR/ UNF CCC Web -site	Project is unilateral and India has ratified the protocol on 26 th August 2002 and is allowed to participate. The web link is http://unfccc.int/parties_and_observers/parties/items/2109.php	Y	Y
1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario.	PDD	DR/I	The purpose of the CDM project activity is to establish a 1.25 MW biomass gasification power project located in coimbatore district, Tamilnadu.AHBPPL which is the first 1.25 MW grid connected biomass gasification power project in India.	Y	Y

			Coconut residues are the major fuel for this project activity which is available abundant in this region.		
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available.	PDD	DR/ UNF CCC Web -site	<p>Yes, the project is listed on UNFCCC website from 29th March 2007 to 27th April 2007.</p> <p>http://cdm.unfccc.int/Projects/Validation/DB/HG44C70CA9UZSYG4VJQ08I7USR48C1/view.html</p> <p>The project was also listed on SGS climate change website from 29th March 2007 to 27th April 2007.</p> <p>http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=240</p> <p>Number of comments received - 1</p>	Y	Y
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance.	PDD	DR	Project has used version 03 of PDD applicable and followed the guidelines, except pending closure of some CARs/ NIRs.	Site Visit	Y
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA.	PDD	DR	<p>No ODA has identified in PDD.</p> <p>Records to be checked during Site visit.</p>	Pending Site Visit	Y
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?	PDD	DR	Not relevant as the project is not an AR project.	Not Applicable	Y
1.9 Does the project meet the additional requirements detailed in:	PDD	DR	This is an SSC project which comes under category AMS I-D and	Y	Y

Table 9 for SSC projects			hence table 9 is applicable.		
Table 10 for AR projects					
Table 11 for AR SSC projects					
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment?	PDD	DR	The version of PDD used by project proponent present all the information, except pending closure of some CARs/ NIRs.	Pending closure of CARs/ NIRs	Y
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?	PDD	DR	The PDD uses reliable information and that can be verified in an objective manner. Parameters and default values used for calculation need to be checked. All the pending CAR/NIR need to be closed.	Site visit All pending CAR/NIR need to be closed.	Y

Table 7 COMMENTS BY LOCAL SAKEHOLDERS (Ref PDD Section G)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	The national stakeholder review mentioned in PDD is not clear is not complete. Please clarify which governmental and non-governmental parties are consulted for project activity.	CAR2	Y
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	There is not sufficient information about the media used to invite stakeholder meeting.	NIR3	Y
7.3 If a stakeholder consultation process is required by regulations/laws in the	PDD	DR	Stakeholder consultation process is not required as	NIR4	Y

host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?			per regulation/laws in host country. However the project participant has consulted the local stakeholders as a requirement for CDM project. MoM of the meeting is to be provided by the Project Proponent.		
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	Summary of comments not mentioned in PDD.	NIR5	Y
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	No adverse comment identified in the PDD. Same has to be verified during site visit.	Site Visit	Y

TABLE 8 OTHER REQUIREMENTS

Ref.					
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	The PDD template for version 03 has not been applied correctly. The Page 1 & Page 2 of the PDD is not according to the version 03 of the small scale PDD.	CAR 6	Y
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified.	PDD	DR	Yes the PDD address all the specific requirements under each header.	Y	Y
8.2 Technology to be Employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	The project reflects current good practice for project design engineering.	Site visit	Y
8.2.2 Does the project use state of	PDD	DR	The project uses the	Site	Y

the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?			technology that would result in better performance. Technical specifications of the Gas Engines need to be checked during site visit and obtain the copy of the same.	visit	
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	Proof for the technology will not be changed during the project period needs to be submitted by the project proponent.	NIR 7	Y
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR	The modalities, procedures and schedules for the training, being imparted to all the staff to ensure proper operation of the unit, are not clear. Proper clarification regarding the same, required to be provided by the project proponent.	NIR 8	Y
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Project activity starting date is defined in the PDD as 28/03/2003. Evidence for the same is required.	CAR 9	Y
8.3.2 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)?	PDD	DR	Renewable crediting period of 7 years is selected for the project activity and it is reasonable	Site Visit	Y.
8.3.3 Does the project's operational lifetime exceed the crediting period.	PDD	DR	The project's operational life time is expected to be 25 years which exceeds the crediting period of 7 years.	Y	Y

TABLE 9 ADDITIONAL REQUIREMENTS FOR SSC PROJECT ACTIVITIES ONLY
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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Conc I	Final Concl
9.1 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 activity is 1.25 MW biomass gasification power project and it qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 as the installed capacity of the power plant is less than 15 MW the limit set for the small scale projects.	Y	Y
9.2 The project conforms to one of the categories listed in Appendix B to Annex II to Decision 21/CP8.	PDD	DR	Yes, the project activity falls under Type (i) D. Renewable energy projects-energy generation for a system	Y	Y
9.3 The small scale project activity is not a debundled component of a larger project activity?	PDD	DR	Small scale project activity is not a debundled component of a larger project.	Y	Y
9.4 PDD has been prepared in accordance with appendix A of Annex II to Decision 21/CP8	PDD	DR	The CDM - SSC - PDD (version 3) template is followed.	Pending closure of CARs / NIRs	Y
9.5 The project uses a simplified baseline and monitoring methodology specified in Appendix B. If not, they may propose changes to the meths or a new SSC project category	PDD	DR	The project activity is using AMS-I.D. version 10.	Y	Y
9.6 Are the emission reductions determined in accordance with the methodology described?	PDD	DR	Provide calculation spreadsheet for emission reduction calculation.	CAR 10	Y
9.7 Is there any bundling of SSC activities into one PDD? If so, does the monitoring plan consider sampling of activities? Refer to para 19 of Annex II. Also, note bundling provisions in SSC Briefing Note and	PDD	DR	There is no bundling of SSC activities into one PDD.	Y	Y

SSC meths I C / I D and III D and Para 22e of Appendix B.					
9.8 Is EIA required by host party? If not, none is required irrespective of SHC. If yes, has one been performed consistent with local requirements?	PDD	DR	The current version of the PDD is claiming that, according to the Host Country legislation no EIA study is required for the proposed project activity. The proper reference of the relevant host country legislation to be provided.	NIR 11	Y
9.9 The project results in emission reductions that are additional in accordance with the following requirements: <ul style="list-style-type: none"> • (Para 26) The project is additional if emissions are reduced below those in the absence of the project. • (Para 27) Simplified baseline can be used; if not, baseline proposed shall cover all gases, sectors and sources listed in Annex A to the KP • (Para 28) One or more barriers as detailed in attachment A to Appendix B to Annex II will be used to demonstrate that the project would not proceed without the CDM 	PDD	DR	Additionality is not clear <ul style="list-style-type: none"> • Provide documentary evidence to support the technological barriers. • Documentary evidence to prove the statement first of its kind in the region. • Provide documentary evidence to support other barriers. 	CAR 12	Y
9.10 Leakage is calculated according to the provisions of the SSC methodologies in Appendix B.	PDD	DR	Basis of calculation for leakage emission on account of transportation of biomass is provided in the PDD. Evidence needs to be checked for surplus	Site Visit	Y

Annex 3 Findings Overview

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
1	CAR	Provide Host Country Approval from Indian DNA.	1.2
Date: 23 rd May 2007 [Will be submitted later]			
Date: [2007-05-30] [Comments from Local Assessor] HCA is awaited. [Acceptance and close out]Open			
Date: 10 th July 2007 HCA is enclosed.			
Date: [2007-07-25] [Comments from Local Assessor] Letter of approval from DNA (reference number 4/7/2007-CCC) dated 28 th September 2007 has been received and checked with the original copy and found satisfactorily, Hence CAR 01 can be closed. [Acceptance and close out]OK, Closed Out[Sanjeev Kumar]			

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
2	CAR	Please clarify which governmental and non-governmental parties are consulted for project activity.	7.1
Date: 23 th May 2007			
Governmental Parties <ol style="list-style-type: none"> 1. Tamil Nadu Energy Development Agency(TEDA),Chennai 2. Tamil Nadu Electricity Board (TNEB),Chennai 3. Tamil Nadu Pollution Control Board(TNPCB),Chennai 4. Village Administrative Officer(VAO),Varapatti 5. Ministry Non-Conventional Energy Sources(MNES),New Delhi 			
Non-Governmental Parties <ol style="list-style-type: none"> 1. Local People of the village 2. Biomass Dealers 			
Date: [2007-05-30] [Comments from Local Assessor] The explanation given by project proponent is found satisfactory and the same was confirmed during site visit also, hence this CAR can be closed. [Acceptance and close out]Ok, closed out[Sanjeev Kumar]			

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
3	NIR	Please provide the media used to invite stake holder comments.	7.2
Date: 23 th May 2007 The media used to invite stake holder is Printed Invitation Notice and it was submitted to the validator on 15 th May 2007.			

Date: [2007-05-30] [Comments from Local Assessor]
 A notice for inviting comments from local stakeholder was issued by the project proponent, and pasted in the village, the copy of the same was submitted by the project proponent to DOE and the same was confirmed during local stakeholder consultation by local assessor during site visit.
 [Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
4	NIR	MoM of the meeting with Local stake holder consultation is to be provided by the Project Proponent.	7.3

Date: 23th May 2007
 Submitted to the validator on 15th May 2007

Date: [2007-05-30] [Comments from Local Assessor]
 MoM for local stakeholder meeting has been submitted by the project proponent, also the attendance sheet along with signature of the stakeholder attended the meeting was checked and verified along with stakeholder consultation during site visit, so this NIR was closed out.
 [Acceptance and close out]Ok, Closed out[Sanjeev Kumar]

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
5	NIR	Please provide the summary of comments received by stakeholder consultation.	7.4

Date: 23th May 2007
 The local stake holders invited this projects due environmental friendly and employment generation by this project activity. There is no negative comment from the stake holders. The questionnaire filled by the stake holder is submitted to the Validator on 15th May 2007.

Date: [2007-05-30] [Comments from Local Assessor]
 Project proponent has submitted questionnaires filled by local stakeholder, but please incorporate the summary of comments in the PDD also.
 [Acceptance and close out]Open

Date: 27th June 2007
 Summary of the comments are incorporated in the Section E.1 in the PDD.

Date: [2007-07-25] [Comments from Local Assessor]
 Summary of the comments are incorporated in the revised PDD, hence this NIR can be closed out.
 [Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
6	CAR	The PDD template for version 03 has not been applied correctly. The Page 1 & Page 2 of the PDD is not according to the version 03 of the small scale PDD.	8.1.1

Date: 23th May 2007
 The PDD is revised accordingly

Date: [2007-05-30] [Comments from Local Assessor]

The PDD has been revised accordingly and the same is accepted to DOE, hence this CAR can be closed.
 [Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
7	NIR	Provide evidence that project technology will not be substituted by other or more efficient technologies during the crediting period.	8.2.3

Date: 23th May 2007

The project promoter submitted a self declaration letter to the Validator on 15th May 2007

Date: [2007-05-30] [Comments from Local Assessor]

The same has been provided by the project proponent and has been checked for the same and found satisfactory, this NIR can be closed.

[Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
8	NIR	Please provide the details of extensive initial training for the project Activity.	8.2.4

Date: 23th May 2007

Details were submitted to the Validator on 15th May 2007

Date: [2007-05-30] [Comments from Local Assessor]

Initial training for the project activity was provided by the supplier and the photographs for the training programme has been submitted by the project proponent, also the same has been verified by interviewing the plant personnel during site visit.

[Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
9	CAR	Provide an evidence for the starting date of project activity.	8.3.1

Date: 23th May 2007

Evidence for the starting date of project activity was submitted to the Validator on 15th May 2007

Date: [2007-05-30] [Comments from Local Assessor]

Project proponent has submitted the purchase order for supply, fabrication, installation and commissioning of gasification plant. The same has been checked and found satisfactory and 28th march 2003 has been accepted as the starting date for the project activity.

[Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
10	CAR	Please provide the calculation spreadsheet for emission reduction.	9.6

Date: 23th May 2007

Calculation Excel Sheet is Attached

Date: [2007-05-30] [Comments from Local Assessor]

Excel sheet has been submitted by the project proponent and calculation has been checked and found satisfactory, hence this CAR can be closed out.

[Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
11	NIR	Provide detail reference of the Host Country legislation, under which EIA study is not required for the project activity.	9.8
Date: 23 th May 2007 EIA Notification Dated 14 th September attached			
Date: [2007-05-30] [Comments from Local Assessor] EIA notification is not cleared. [Acceptance and close out]Open			
Date: 27 th June 2007 Please refer in Notification Schedule , Project or Activity : 1 (d) Page No : 10			
Date: [2007-07-03] [Comments from Local Assessor] The attached document has been checked and confirmed that EIA is not required for the project activity. Hence this NIR can be closed. [Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]			

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
12	CAR	<p>Additionality is not clear</p> <ul style="list-style-type: none"> • Provide documentary evidence to support the technological barriers. • Documentary evidence to prove the statement first of its kind in the region. • Provide documentary evidence to support other barriers. 	9.9
Date: 23 rd May 2007 All the documentary evidence was submitted to Validator on 15 th May 2007.			
Date: [2007-05-30] [Comments from Local Assessor] Supporting documentary evidence for technological barriers is still missing. Project Proponent submit the annual report of the Ministry of Non – Conventional Energy Sources for year 2004-2005 in which chapter 7 page 4 it was publish that project activity is India’s First 1 MW 100% Producer Gas based Grid connected Power Generation Project Supporting documentary evidence for other barriers is still missing. [Acceptance and close out]Open			
Date: 27 th June 2007 Technical Barrier : http://www.ias.ac.in/currsci/oct102004/908.pdf			
Date: [2007-07-25] [Comments from Local Assessor] The technological barriers and other barriers mentioned in the PDD are verified from the link http://www.ias.ac.in/currsci/oct102004/908.pdf and hence this CAR can be closed. [Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]			

Date: 8th May 2007 Raised by: Nikunj Agarwal

No.	Type	Issue	Ref
13	NIR	<p>Monitoring plan for the present project activity dose not include following parameters</p> <ol style="list-style-type: none"> 1. Leakage monitoring 2. Power imported from grid 3. No clarity on the use of main meter & check meter. PDD does not give number of meters available for measuring power generated, auxiliary consumption, import and export in PDD. <p>Also provide biomass assessment report.</p>	9.13
<p>Date: 23th May 2007</p> <ol style="list-style-type: none"> 1. Leakage is calculated from the Biomass consumption (PI refer the leakage calculation in the PDD. Page No.21) 2. CER calculated for the net power exported to the grid. Import of power is measured by the Energy meter. 3. Both meters main meter and check meter are used to measure the power exported to the grid. The main meter reading is cross checked with the check meter reading. CER calculated for the net power exported to the grid. So there is no need to monitor the generation. 4. Biomass Assessment Report is attached. 			
<p>Date: [2007-05-30] [Comments from Local Assessor]</p> <ol style="list-style-type: none"> 1. Leakage calculation is o.k., but please provides the supporting document related the transporters slip for supporting the kilometres of the truck. 2. Import of power should be involved in the monitoring plan. 3. You are measuring total power generated by the project activity and also the power used for captive purpose, so you might include these in the monitoring plan. Also the auxiliary consumption should be monitored. 4. Biomass Assessment Report is ok. <p>[Acceptance and close out]Open</p>			
<ol style="list-style-type: none"> 1. Plenty of biomass available with in 50 km radius from this project activity. Biomass required for this plant is very minimum quantity compared to availability. Weigh bridge receipt contains all the data like vehicle no and biomass supplier name. For leakage calculation maximum average 50 km radius taken for calculation. 2. Export, import and net power exported to grid is monitored. PDD revised accordingly 3. The net electricity exported to grid is calculated from the export and import meter reading. The net electricity exported to grid is used for CER calculation. Hence auxiliary consumption is not monitored in this project activity. 			
<p>Date: [2007-07-25] [Comments from Local Assessor]</p> <p>Biomass assessment report has been submitted by the project proponent which confirms the availability of biomass and hence being conservative maximum distance 50 km is considered for leakage calculation.</p> <p>Import of power has been incorporated in the monitoring plan of the PDD.</p> <p>Since project proponent is monitoring net electricity exported and claiming CER on that portion only and the same has been confirmed during site visit also so no need to install auxiliary consumption meter separately, hence this CAR can be closed.</p> <p>[Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]</p>			
Date: 8 th May 2007		Raised by: Nikunj Agarwal	

No.	Type	Issue	Ref
14	NIR	Please explain about the start-up fuel for gasifier, Is there any auxiliary fuel used in gasifier during start up operation.	9.13
<p>Date: 23th May 2007 For start up of gasifiers, the biomass in the gasifiers is ignited through the ignition ports with the help of a torch flame or blow torch. The blower is switched on using power from the Electricity board. The gas generated is flared till the required gas quality is attained. Thereafter the gas is fed to an engine and power is generated. There is no fossil fuel used during start up of gasifier.</p>			
<p>Date: [2007-05-30] [Comments from Local Assessor] The same has been checked and cross verified by discussion with operator and plant personnel during site visit, hence this NIR was closed. [Acceptance and close out]Ok, Closed Out[Sanjeev Kumar]</p>			



Annex 4 Statement of Competence

Name: Sanjeev Kumar

SGS Affiliate: SGS India Pvt. Ltd.

Status

- Product Co-ordinator
- Operations Co-ordinator
- Technical Reviewer
- Expert

	Validation	Verification
--	------------	--------------

- | | | |
|------------------------|-------------------------------------|-------------------------------------|
| - Local Assessor | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| - Lead Assessor | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| - Assessor | <input type="checkbox"/> | <input type="checkbox"/> |
| /Trainee Lead Assessor | | |

Scopes of Expertise

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

Approved Member of Staff by Siddharth Yadav Date: 16th May 2007

Statement of Competence

Name: Nikunj Agarwal

SGS Affiliate: SGS India Pvt. Ltd.

Status

- Product Co-ordinator
- Operations Co-ordinator
- Technical Reviewer
- Expert

Validation Verification

- Local Assessor
- Lead Assessor
- Assessor
- / Trainee Lead Assessor

Scopes of Expertise

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

Approved Member of Staff by Marco van der Linden Date: 03-04-07