



VALIDATION REPORT

Siddheshwari Industries Pvt. Ltd.

**2.25 MW Rice Husk based cogeneration plant at
Siddheshwari Industries Pvt. Ltd.**

SGS Climate Change Programme

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|--|--------------------------------|
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Summary

This validation report consists of the assessment of the project "2.25 MW Rice Husk based cogeneration plant at Siddeshwari Industries Pvt Ltd". This includes the project summary, objective, scope of validation, validation protocol, findings/checklist, stakeholders' consultation and validation opinion.

The project activity is a cogeneration system which generates both heat and power from biomass fired high pressure boiler with the help of an extraction cum condensing turbine and replaces the older system – coal fired low pressure boiler for steam and DG set for electricity. Thus the activity reduces the anthropogenic GHG emissions which otherwise would have been generated by coal fired co-generation system which was the most likely scenario for the project participant in absence of project activity.

The project meets the requirement of SSC project criteria and applicable for AMS I.C version 9 methodology as per Appendix B.

| | | |
|---|------------------|---|
| Subject.: | | |
| CDM validation | | Indexing terms |
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Abbreviations

| | |
|-----|-----------------------------|
| PDD | Project Design Document |
| CDM | Clean Development Mechanism |
| MW | Mega Watt |
| DG | Diesel Generator |
| HSD | High Speed Diesel |
| GHG | Green House Gas |
| CHP | Combined Heat and Power |

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Annex 1: Local assessment

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1. Introduction

1.1 Objective

The Siddeshwari Industries Pvt. Ltd. has commissioned SGS to perform the validation of the project: **2.25 MW Rice Husk based cogeneration plant at Siddeshwari Industries Pvt. Ltd.** 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 proposed CDM project activity is a cogeneration project located at Siddeshwari Industries Pvt. Ltd., Jansath road, Muzaffarnagar district of Uttar Pradesh state in India. The activity is a combined heat and power system which generates CHP energy from biomass fired high pressure boiler with the help of an extraction cum condensing steam turbine and replaces the coal fired low pressure boiler and HSD fired DG set for generating the same.

Baseline Scenario:

Under the baseline scenario, the heat was being generated separately by a low pressure boiler and electricity by DG sets to meet the in house requirement of the plant. The same was decided to replace with coal based cogeneration system which was the most likely scenario for the project participant in absence of project activity.

With Project Scenario:

The project activity is a biomass fired CHP system and conserves the fossil fuels which results into the reduction of anthropogenic emissions which otherwise would have been generated by coal based cogeneration system.

Leakage:

As per the methodology AMS I-C version 09 applicable for the project activity, leakage is to be considered if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity. This is not the case with the present project activity and the biomass assessment report also shows surplus biomass availability in the region hence no leakage is considered. This was evident that the biomass is locally available and the distance travelled by a truck to carry biomass will be lesser than that travelled in case of coal supply.

Environmental & Social Impacts:

There are no negative environmental and social impacts expected with the project activity, the same has been cross-checked during local stakeholder consultation process. The project is replacing fossil fuels with the biomass available in the region and hence will reduce the anthropogenic GHG emission. The employment associated to biomass handling is also expected to be generated with this project.

1.4 The names and roles of the validation team members

| Name | Role |
|--|---------------------------------|
| <i>Shivananda Shetty - SGS India</i> | <i>Team Leader</i> |
| <i>Sanjeev Kumar - SGS India</i> | <i>Assessor</i> |
| <i>Nikunj Agarwal - SGS India</i> | <i>Local Assessor (Trainee)</i> |
| <i>Irma Lubrecht - SGS Netherlands</i> | <i>Technical Reviewer</i> |

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 26 Aug 2002. A Letter of Approval for the project activity was provided dated 11th September 2006 and issued by the Indian DNA (reference number 4/16/2006-CCC).

Initially, no reference regarding the Letter of Approval from Indian DNA was provided to the validator and a CAR (01) was raised. Later on, this was made available by project proponent and the CAR (01) was closed out.

No Annex I Party has been identified in the PDD and therefore no further Letter of Approval was obtained. 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 AMS-I.C/Version 09 methodology "Thermal energy for the user". The project activity is a biomass based co-generation system. The thermal energy output from the boiler is 17MWth and is well below than 45MWth.

The project participant wishes to have the fixed ten years crediting period starting from the date of registration however the tentative date was chosen as 1st Jan 2007 for emission reduction estimation. There was no proof available for project starting date hence the NIR05 was raised. The copy of the purchase order of turbine was submitted as the proof of the project starting date. The PO date was found 28th May 2004 and the same was corrected in revised PDD and the NIR05 was closed out. The CDM consideration was explained in the PDD to mitigate the risk due to investment and operational barrier, the documentation supporting the same was not submitted and hence the CAR07 was raised. In order to provide evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, minutes of a Board meeting of the project participant were provided. These minutes were reviewed during the site visit and the excerpts of the meeting duly signed by the director were submitted to the validator. It was found that the relevant meetings took place on 15th March 2004. The minutes showed the carbon credit was taken into account during the decision on going ahead with the project activity while other economically attractive alternatives were available. In the minutes of meeting this was discussed that the older system (coal based boiler and DG sets for power generation) needed to be replaced with the co-generation system. The coal based CHP system was found the most attractive alternative available to the project activity due to low operational cost and hence considered as the baseline for the project activity and the CAR07 was closed out.

The project participant used the investment barrier, fuel supply barriers and other barriers to justify the additionality. The investment and fuel supplied barrier were verified as the major barrier to the project

activity.

Under investment barrier, the running cost of the power plant with rice husk was verified as the operational barrier to the project activity with respect to the other available alternatives. The CHP plant operated with coal were found cheaper option for steam and power generation. The same was verified discussed in the board meetings with the analysis. The hike in price of rice-husk was envisaged as the major barrier to the project activity in comparison to coal price at the time of project implementation and the same was verified during site visit (refer annex 01 local assessment).

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

3.3 Application of Baseline methodology and calculation of emission factors

The project has applied the small scale AMS-I.C methodology version 9 dated 23rd December 2006, for "Thermal energy for the user" as per Appendix B of the simplified modalities and procedures for small-scale CDM project activities.

The project proponent was using DG set for power generation and coal based low pressure boiler for steam generation. The same was not found to be attractive option to continue with and was considered to be replaced with a coal based cogeneration plant which was found the most economical attractive option to the project activity. This was verified with the board note duly signed by the Director of the company. The old system was replaced with the new rice-husk based cogeneration system i.e. the project activity and the coal based cogeneration system was considered as the baseline. The thermal capacity of the new high pressure boiler is under the limit of the scale projects under AMS.I.C.

The baseline emission factor was calculated based on the test run conducted in the plant in different months. The boiler efficiency was assumed to be 100%. The factor 1.81tCO₂e/MWh was chosen conservatively and is fixed ex-anti for the entire crediting period of 10 years. The log sheets for the particular dates of the test runs were verified and collected for the reference.

The spread sheet for emission factor calculation was not provided earlier and hence the NIR6 was raised. The same was provided by the project participant and was checked for the calculation. The spread sheet was revised as per the correction according to CAR7 and again verified for the data and assumptions used. The IPCC default emission factor was used for the calculation. The expected emission reduction was based on an average power production from the plant. The NIR6 was closed out.

3.4 Application of Monitoring methodology and Monitoring Plan

The project activity uses monitoring methodology as described in paragraph 11 (a) of the small scale methodology that is metering of the energy produced by a sample of the systems where the simplified baseline is based on the energy produced multiplied by an emission coefficient 1.81tCO₂e/MWh. The project emission will be calculated from the coal if used during the crediting period. The data will be archived for the crediting period plus two years.

The monitoring plan mentioned in the version 01 of the PDD was not provided with QA/QC procedure

in detail and the information on the metering system. The coal emission factor and steam parameter were not included in the monitoring plan for cross reference. Hence the CAR8 was raised. The same has been provided in the revised PDD and the CAR8 was closed out.

All other data that is required for monitoring was found in monitoring plan. Role & responsibilities have been defined and monitoring personnel were trained. The monitoring equipments were found in line during site visit. The monitoring plan was reviewed for reporting, recording and data archiving and found satisfactory. The CDM monitoring plan was found in accordance with project activity and as per requirement of methodology during site visit.

3.5 Project design

The Project Design Document (PDD) was designed as per version 2 of guidelines laid for preparing PDD of small scale CDM project activity hence the format of the present PDD was checked against it.

In PDD, few corrections related to crediting period start date, location map and some editorial change were required as per CAR2 which has been corrected in the revised and the CAR2 was closed out.

3.6 Environmental Impacts

The project was found in compliance with local/legal regulation. The same was checked during local stakeholder consultation process. Though the project had short-term negative impacts on various components of socio-economic environment due to increase in population comprising of workmen and labour during construction phase, that was for short duration and these impacts were minimised and contained within the site. It was verified with MoEF documents that EIA study was not required for present project activity as the present project activity is not listed under schedule for S.O.1533. <http://envfor.nic.in/legis/eia/so1533.pdf>

In accordance with the requirements of Indian regulations/laws, the plant in which the project activity is installed has obtained "Consent to establish and operate" from State Pollution Control Board which is an indication of regulatory acceptance. Also the host country approval has been given to project activity from Ministry of Environment and Forests. These documents were reviewed and found satisfactory.

3.7 Local stakeholder comments

In order to verify whether the project information was provided to the local stakeholders, the information on the media used for inviting comments were asked from the project participant as the same was found missing from the PDD and the CAR3 was raised. The project participant provided the information in the revised PDD. The letters were written to the stakeholders and the copies were submitted to the validator. This clarified the transparency in the LSC process and the CAR3 was closed out.

The NIR4 was raised for the evidence to be provided on the local stakeholders comments. The letters signed by the local community, Gram Pradhan and employees were submitted to the validator. The local stakeholders' comments were verified for any adverse impact to local community. It was found that no public complain was registered to State Pollution Control Board office on project activity as consent to operate has been issued to the plant. The same was verified during site visit and the NIR 4 was 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 SGS website <http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=121> and were open for comments from 26 July 06 until 24 August 06. Comments were invited through the UNFCCC CDM homepage <http://cdm.unfccc.int/Projects/Validation/DB/4K382Z6OP1U3O84O8505L1BXY0PKCK/view.html>

4.2 Compilation of all comments received

| Comment number | Date received | Submitter | Comment |
|----------------|---------------|-----------|---------|
| 0 | | | |

No comment was received

4.3 Explanation of how comments have been taken into account

No comment was received

5. Validation opinion

SGS has performed a validation of the project: “2.25 MW Rice Husk based cogeneration plant at Siddeshwari Industries Pvt Ltd” at Muzaffarnagar district in the state of Uttar Pradesh in India. 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.

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

By using rice-husk based cogeneration system for heat and power generation, 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 investment barrier (operation cost), fuel supply barrier and other barriers associated with project activity in early stages of operation, demonstrates that the proposed project activity was not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. The project is already implemented and 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 |
|-------------|---------------------|-----------------------|---|
| 20/08/06 | Mr. Sishir Sangal | Director | Brief description of project, CDM consideration |
| 20/08/06 | Mr. Deepak Bansal | Director | Project additionality, capital investments, sensitivity analysis, local stakeholders' consultation process, CDM consideration |
| 20/08/06 | Mr. H.M. Garg | Finance Controller. | Monitoring protocol, alternatives available to the project activities, technical problems with turbine operation |
| 20/08/06 | Mr. S.K. Singh | General Manager | Project monitoring, data reliability, calibration procedure, maintenance of monitoring equipments |
| 20/08/06 | Mr. V.D. Pandey | G.M. (Power Plant) | Project monitoring, reporting, recording, data archiving, data reliability |
| 20/08/06 | Mr. Parmender Kumar | Raw material supplier | Local stakeholder |

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/ Project Design Document
- /2/ Letter of Approval

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):

- /3/ Minutes of Board Meeting - CDM consideration note
- /4/ Letters to local stakeholders - Media how to seek comment
- /5/ Pollution control Board Letter - Consent to establish the Project from envn dept
- /6/ Application to Pollution Control Board - Consent to operate the plant
- /7/ Bank Statement - Proof for Loan sanction for the project
- /8/ Unsecured loan - Proof for investment made for the project
- /9/ Director's Letter - Stating no public Funding used

- /10/ [Rice husk price in 2005 - Increasing cost of rice husk](#)
- /11/ [Rice husk price in 2006 - Increasing cost of rice husk](#)
- /12/ [Coal price - Increasing cost of coal](#)
- /13/ [Letters from local stake holders - Comments during LSC process](#)
- /14/ [Turbine Purchase order - For activity starting date](#)
- /15/ [Biomass Assessment Report - For surplus/availability of biomass in the region](#)
- /16/ [Copy of log sheets - Monitoring of parameters and baseline information](#)
- /17/ [Calibration certificates - Calibration details of monitoring equipment](#)
- /18/ [Boiler/Turbine specifications - Technical Details](#)

Annex 1: Local assessment

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Project Specific criteria to be confirmed by Local Assessor

Questions be defined by team leader, Answer and Objective Evidence / Source of information / Persons Interviewed to be completed by Local Assessor; Compliance to be reviewed by Team Leader.

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | Final Concl |
|---|-------|------|--|----------------|----------------|
| 1. The proof of not using the ODA to be checked | 1.7 | SN07 | The letter from the project participant was obtained for the same. | OK | OK |
| 2. The list of the relevant stakeholders to be checked. | 7.1 | SN02 | The letter written to local communities, employees and suppliers have been verified during site visit. | OK | OK |
| 3. The summary of the stakeholder comments is provided in PDD. Supporting documents need to be verified | 7.4 | SN11 | The letters from the relevant local stakeholders had been obtained and verified during site visit. | OK | OK |
| 4. No adverse comment identified in the PDD and same to be verified during site visit. | 7.5 | SN11 | The letters obtained from the stakeholders were reviewed and the raw material supplier was interviewed for the same. No adverse comment has been identified on the project activity. The consent to establish the plant had been obtained and the project developer has already applied for consent to operate from state pollution control board. | OK | OK |
| 5. The requirement of any extensive type of training to be checked to run the project activity. | 8.2.4 | | The project participant was already running low pressure boiler and was aware about the operation of boiler. For turbine and high pressure boiler operation, the internal training was conducted in the plant with the help of supplier. | OK | OK |

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | Final Concl |
|---|------|--------------|---|----------------|----------------|
| 6. The energy output from the boilers in case of project activity to be checked for not exceeding 45MWth | 9.1 | SN16 | The thermal energy output from the boiler was checked for meeting the SSC methodology applicability and the same was found less than 45 MWth. The boiler and turbine specifications were obtained for the same. | OK | OK |
| 7. No EIA is required by host Party. However consent to establish and consent to operate for the project is to be taken from state pollution control board. The same to be checked during site visit. | 9.8 | SN03 SN04 | The consent to establish for the project activity was obtained by the project participant however the application have been made for consent to operate which takes time and can be verified at the time of verification. | OK | OK |

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | Final Concl |
|---|------|------|---|----------------|----------------|
| 8. Leakage emissions need to check during site visit. Copy of 'Biomass assessment report' need to check for surplus availability of biomass in the project activity region. | 9.10 | SN13 | <p>The leakage emissions can be neglected due to offsite emission from the transport because the biomass is available in the nearby areas and the transport emission will be less due to project activity in comparison to using coal which was brought down from distant places.</p> <p>The onsite emissions also can be neglected as the biomass is a renewable fuel and sequestered the emissions.</p> <p>The emissions during construction of the plant are negligible in comparison to the total emissions from the plant in its life span.</p> <p>The surplus availability (more than 25% of consumption) of biomass was ensured in the region and found the surplus biomass is available in the region and no anticipated leakage is expected due to project activity.</p> | OK | OK |

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | Final Concl |
|--|-------------|----------------------|---|-------------|-------------|
| 9. The price of rice husk purchased by the plant and increase in last six months | PDD page 11 | SN08 SN09 SN10 | The price of rice husk is increasing as envisaged at the time of project conception in the board meeting. The price was envisaged Rs1500/ton at that time which is now crossing Rs 2200/ton. The price was Rs 1600/ton last year and verified with the receipt from the supplier. This was found that the coal price is more stable in the market and project participant is using rice husk due to expected CDM benefits. | OK | OK |
| 10. Actual power generation and steam supplied to the plant is required | | SN14 | The log sheet were checked for the actual power generation from the plant and found inline with the expected emission reduction calculation. | OK | OK |
| 11. Please provide the evidences of invested amount for the project | | SN05 SN06 | The loan was taken for the project and the evidences for the investment were submitted by the project participant and the same was verified. | OK | OK |
| 12. Please provide the evidence for start date of project activity | | SN12 | The purchase order was released on 28th May 2004 to Triveni engineering and industries Ltd. Is considered the start date of project activity. | OK | OK |
| 13. Please provide calibration details for the monitoring equipment | | SN15 | The calibration certificates for weighbridge have been obtained. The other certificates will be taken care during verification. | OK | OK |

Annex 2: Validation Protocol

REVISION HISTORY

| | | |
|---------|-------------------------------------|--|
| Issue 2 | Prepared by Gareth Phillips 3/11/05 | Amendments to 1.10 and 1.11; exclusion of table 2 – 6 for SSC projects |
| | | |

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

| REQUIREMENT | Ref | Mo V | Comment | Draft finding | Final 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 | Project will assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3. However, no Annex-1 participant has been identified so far. | OK | OK |
| 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. | CAR 1 | OK, CAR1 closed out |
| 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/ UN FC CC We b-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 | OK | OK |

| REQUIREMENT | Ref | Mo V | Comment | Draft finding | Final Concl |
|--|-----|-----------------------|--|----------------|----------------|
| 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 | <p>The project will generate heat & power for on-site use from a biomass-based cogeneration system and will replace same amount of heat from a coal based system and replace electricity from own captive DG sets.</p> <p>Project applies correct and approved baseline & monitoring methodology AMS.I.C as per appendix B.</p> | OK | OK |
| 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/ UN FC CC Web-site | <p>Yes, the project is listed on UNFCCC website from 26th July 2006 to 24th August 2006.</p> <p>http://cdm.unfccc.int/Projects/Validation/DB/4K382Z6OP1U3O84O8505L1BXY0PKCK/view.html</p> <p>The project was also listed on SGS climate change website for the same.</p> <p>http://www.sgsqualitynetwork.com/tradeassurance/ccp/projects/project.php?id=121</p> <p>Number of comments received - 0</p> | OK | OK |
| 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 current version (version 2) of PDD applicable and followed the guidelines. | OK | OK |
| 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 use of ODA has been identified in PDD.</p> <p>Records to be checked during Site visit.</p> | Site visit | OK |
| 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 | Not Applicable |

| REQUIREMENT | Ref | Mo V | Comment | Draft finding | Final Concl |
|--|-----|------|---|---------------|---------------------|
| 1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects | PDD | DR | This is an SSC project which comes under category AMS.I.C and hence table 9 is applicable. | OK | OK |
| 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 presents all the information except following: 1. Section C.2.2.1: Crediting period starting date is prior to the date of registration 2. Location Map is not clear 3. Section B.4: Annex B is not clear 4. Section D.3 Table: Under comment the information how each parameter will be verified is missing. | CAR 2 | OK, CAR2 closed out |
| 1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner? | PDD | DR | The PDD is completed with the relevant & reliable information except pending CARs/NIRs. Some IPCC default values also have been used. | OK | OK |

Table 2 Baseline methodology/ies (Ref: PDD section B and E and Annex 3) Normal CDM projects only

Table 3 Additionality (Ref: PDD Section B3 and AM) Normal CDM projects only

Table 4 Monitoring methodology (PDD Section D and AM) Normal CDM Projects only

Table 5 Monitoring plan (PDD Annex 4) Normal CDM Project activities only

Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation) Normal CDM Project Activities only

TABLE 7 COMMENTS BY LOCAL STAKEHOLDERS (REFER PDD SECTION G)

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | Final Concl |
|--|------|------|---|-------------|---------------------|
| 7.1 Have relevant stakeholders been consulted? | PDD | DR | The list of the relevant stakeholders to be checked. | Site visit | OK |
| 7.2 Have appropriate media been used to invite comments by local stakeholders? | PDD | DR | The media used to invite comments from local stakeholders is not described in the PDD. | CAR 3 | OK, CAR3 closed out |
| 7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws? | PDD | DR | Stakeholder consultation process is not required as per regulation/laws in host country. However, the project participant has consulted the stakeholders as a requirement for CDM project. The evidence for minutes of the meeting needs to be provided. | NIR 4 | OK, NIR4 closed out |
| 7.4 Is a summary of the stakeholder comments received provided? | PDD | DR | The summary of the stakeholder comments is provided in PDD. Supporting documents need to be verified during site visit. | Site visit | OK |
| 7.5 Has due account been taken of any stakeholder comments received? | PDD | DR | No adverse comment identified in the PDD and same to be verified during site visit. | Site visit | OK |

TABLE 8 OTHER REQUIREMENTS ALL CDM PROJECT ACTIVITIES

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | Final Concl |
|--|------|------|--|-------------|-------------|
| 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 version 02 has been applied correctly. | OK | OK |
| 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 | The PDD address all the specific requirements under each header. | OK | OK |
| 8.2 Technology to be Employed | | | | | |

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | Final Concl |
|--|------|------|--|-------------|---------------------|
| 8.2.1 Does the project design engineering reflect current good practices? | PDD | DR | The project design engineering reflects the current good practices. | OK | OK |
| 8.2.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country? | PDD | DR | The project is using the state of the art technology and results in significantly better performance than any commonly used in the region. | OK | OK |
| 8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period? | PDD | DR | Not likely during the crediting period. | OK | OK |
| 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 plant was using low pressure boilers for steam and DG set for power generation in the baseline. The same has been replaced with a high pressure boiler with extraction cum condensing turbine which may require such type of training as this was not the core business for project participant. The same to be checked during site visit. | Site visit | OK |
| 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 | Yes, the expected operational life time of project activity is defined and reasonable. The starting date is also defined in the PDD. The evidence for the same is required. | NIR 5 | OK, NIR5 closed out |
| 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 | Fixed crediting period of 10 years is selected and reasonable. | OK | OK |
| 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 10 years. | OK | OK |

TABLE 9 ADDITIONAL REQUIREMENTS FOR SSC PROJECT ACTIVITIES ONLY

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | 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 qualify as a small scale CDM project activity as the expected thermal energy output from the project activity is lesser than 45MWth which is the limit for biomass based co-generation system under I.C. category. The same to be checked during site visit with the specifications of the boiler. | Site Visit | OK |
| 9.2 The project conforms to one of the categories listed in Appendix B to Annex II to Decision 21/CP8 | PDD | DR | Yes, AMS I-C version 8 dated 03 March 2006 The revised PDD applies AMS I-C version 9 dated 23 rd Dec 2006. | OK | OK |
| 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 as the same project participant does not have any registered project in any of the category/technology/measure whose project boundary is within 1km. | OK | OK |
| 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 2) template is followed. | OK | OK |
| 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 | Yes, AMS.I.C version 8 dated 03 March 2006 The revised PDD applied AMS.I.C version 9 dated 23 rd Dec 2006. | OK | OK |
| 9.6 Are the emission reductions determined in accordance with the methodology described | PDD | DR | The emission reductions calculation is not clear. The spreadsheet with link to the source of used data to be provided. | NIR 6 | OK, NIR6 closed out |

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | Final Concl |
|---|------|------|--|----------------------------------|--|
| 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 SSC meths I C / I D and III D and Para 22e of Appendix B | PDD | DR | There is no bundling of SSC activities into one PDD. | OK | OK |
| 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 | No EIA is required by host Party. However consent to establish and consent to operate for the project is to be taken from state pollution control board. The same to be checked during site visit. | Site visit | OK |
| 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 | <p>The project will generate heat & power for on-site use from a biomass-based cogeneration system and will replace same amount of heat from a coal based system and replace electricity from own captive DG sets so emissions will reduce below those would be in the absence of the project.</p> <p>The simplified baseline as per AMS.I.C. has been used for the project activity.</p> <p>The investment and operational barrier mentioned in the PDD have been used to demonstrate that the project would not proceed without CDM. How the CDM benefits is going to mitigate the risk.</p> | <p>OK</p> <p>OK</p> <p>CAR 7</p> | <p>OK</p> <p>OK</p> <p>OK, CAR7 closed out</p> |

| CHECKLIST QUESTION | Ref. | MoV* | COMMENTS | Draft Concl | Final Concl |
|---|------|------|--|---------------|---------------------|
| 9.10 Leakage is calculated according to the provisions of the SSC methodologies in Appendix B (http://cdm.unfccc.int/Projects/pac/ssclistmeth.pdf) | PDD | DR | Leakage emissions need to check during site visit. Copy of 'Biomass assessment report' need to check for surplus availability of biomass in the project activity region. | Site visit | OK |
| 9.11 The project boundary shall be constructed in accordance with the requirements of the SSC meths in Appendix B | PDD | DR | Project boundary is in accordance with the requirements of AMS.I.C. | OK | OK |
| 9.12 The Monitoring plan shall be consistent with the requirements of the SSC methodology in Appendix B and shall provide for the collection and archiving of data needed to determine project emissions, baseline emissions and leakage. | PDD | DR | The monitoring plan does not have the QA/QC procedure and the information on how each parameter will be monitored, which instruments will be used, how GHG performance will be analysed and how the uncertainties and adjustments will be addressed. Enthalpy of steam Measured/calculated is not clear. The parameters steam pressure/temperature to be included in the table D.3. Coal emission factor is also one of the parameter for the emission reduction calculation and missing from table D.3. | CAR 8 | OK, CAR8 closed out |
| 9.13 The monitoring plan shall present good monitoring practice appropriate to the circumstances of the project activity. | PDD | DR | The monitoring plan is to be revised. | Pending CAR 8 | OK |
| 9.14 If project activities are bundled, separate monitoring plan shall be prepared for each of the activities or an overall plan reflecting good monitoring practice will be prepared, consistent with the above requirements | PDD | DR | The SSC project is not a bundled project activity. | OK | OK |

Annex 3: Overview of findings

Findings from validation of 2.25 MW Rice Husk Based Cogeneration plant at Siddeshwari Industries Pvt. Ltd.

[CDM.Val0635]

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.

Description of table:

| | |
|----------|---|
| Type | Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE. |
| Issue | Details the content of the finding |
| Ref | refers to the item number in the Validation Protocol |
| Response | Please insert response to finding, starting with the date of entry. |

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Please note that this is an open list and more findings may be added as validation progresses.

Date: 19 Aug 2006

Raised by: Shiva

| No. | Type | Issue | Ref |
|--|------|--|-----|
| 1 | CAR | Letter of approval from Host Country (India) is not submitted till date. | 1.2 |
| Date: 16th October 2006 [Response from project proponent] [The HCA letter has been received and submitted to DOE] | | | |
| Date: 21 Oct 2006 [S Kumar] The letter of approval from host Party has been obtained. The copy of the same is attached. [Acceptance and close out] Ok, closed out. [Shiva] | | | |

Date: 19 Aug 2006

Raised by: Shiva

| No. | Type | Issue | Ref |
|--|------|---|------|
| 2 | CAR | The version of PDD used by project proponent presents all the information except following: Section C.2.2.1: Crediting period starting date is prior to the date of registration Location Map is not clear Section B.4: Annex B is not clear Section D.3 Table: Under comment the information how each parameter will be verified is missing. | 1.10 |
| Date: 16th October 2006 [Response from project proponent] [All corrections are made in relevant sections of corrected PDD] | | | |
| Date: 21 Oct 2006 [S Kumar] The required corrections have been checked in revised PDD ver 03. [Acceptance and close out] Ok, closed out. [Shiva] | | | |

Date: 19 Aug 2006

Raised by: Shiva

| No. | Type | Issue | Ref |
|---|------|--|-----|
| 3 | CAR | The media used to invite comments from local stakeholders is not described in the PDD. | 7.2 |
| Date: 16th October 2006 [Response from project proponent] [The letters were sent to various stakeholders from the project proponent. Photocopy of same letters are submitted to DOE] | | | |
| Date: 21 Oct 2006 [S Kumar] The communication letters to local community/employees have been submitted by the project proponent. The copy of the same is attached as SN02. [Acceptance and close out] Ok, closed out. [Shiva] | | | |

Date: 19 Aug 2006

Raised by: Shiva

| No. | Type | Issue | Ref |
|---|------|--|-----|
| 4 | NIR | The evidence of local stakeholder consultation is not submitted. | 7.3 |
| Date: 16th October 2006 [Response from project proponent] [The letters received from the stakeholders are submitted to DOE] | | | |
| Date: 21 Oct 2006 [S Kumar] The letters from local stakeholders have been obtained and verified. There is no adverse comment identified. The copy of the same is attached as SN11. [Acceptance and close out] Ok, closed out. [Shiva] | | | |

Date: 19 Aug 2006

Raised by: Shiva

| No. | Type | Issue | Ref |
|--|------|---|-------|
| 5 | NIR | Please provide the proof of the starting date of the project. | 8.3.1 |
| Date: 16th October 2006 [Response from project proponent] [The purchase order for the major equipment is submitted to the DOE as a proof of starting date] | | | |
| Date: 21 Oct 2006 [S Kumar] The date of purchase order has been verified as a proof of the project starting date. The copy of the same has been obtained and attached as SN12. The correction has been made in revised PDD. [Acceptance and close out] Ok, closed out. [Shiva] | | | |

Date: 19 Aug 2006

Raised by: Shiva

| No. | Type | Issue | Ref |
|---|------|--|-----|
| 6 | NIR | The emission reductions calculation is not clear. The spreadsheet with link to the source of used data to be provided. | 9.6 |
| Date: 16th October 2006 [Response from project proponent] [The data used is based on present normal operating conditions. The logsheets have been submitted as a proof of current power generation.] | | | |
| Date: 21 Oct 2006 [S Kumar] The emission reduction calculation has been verified with the current power generation by the plant. The expected emission reduction is ok as per the baseline selected. Open until CAR07 is closed out [15 Feb 2007] The emission reduction calculation was again reviewed and found in line with new baseline as per revised PDD. [Acceptance and close out] Ok, closed out. [Shiva] | | | |

Date: 19 Aug 2006

Raised by: Shiva

| No. | Type | Issue | Ref |
|---|------|---|-----|
| 7 | CAR | The investment and operational barrier mentioned in the PDD have been used to demonstrate that the project would not proceed without CDM. How the CDM benefits is going to mitigate the risk. | 9.9 |
| Date: 16th October 2006 [Response from project proponent] [Same is addressed in details in the section B of the corrected PDD] | | | |
| Date: 21 Oct 2006 [S Kumar] The revised PDD has been obtained with more clarifications. The board note shows the project barriers and other attractive alternatives available to the project activity. The copy of the same is attached as SN01. The board note shows the CDM was seriously considered to go ahead with the project activity and the other more likely options were available. The most likely alternative was decided coal based co-generation system however the PDD considered the previous scenario as the baseline. The CAR07 is still open. | | | |
| Date: 08 th December 2006 [Response from project proponent] The baseline has been changed as per most likely baseline scenario. The revised PDD is being resubmitted to the DOEs with the log sheets referred for baseline emission factor. | | | |
| Date: 15 Feb 2007 [S Kumar] The revised PDD has been obtained. The coal based CHP system is the most likely scenario in revised PDD as per the discussion in board note. The emission factor of coal based cogeneration system was estimated as per the actual available data in the plant. The data was verified with the log sheets provided. The boiler efficiency was assumed 100% and the minimum emission factor was used for the emission reduction estimation from the random sample selected. The same was verified in the spread sheet and found conservative during looking at other log sheets available. The calculation of baseline estimation is attached. [Acceptance and close out] Ok, closed out [Shiva] | | | |

Date: 19 Aug 2006

Raised by: Shiva

| No. | Type | Issue | Ref |
|---|------|--|------|
| 8 | CAR | The monitoring plan does not have the QA/QC procedure and the information on how each parameter will be monitored, which instruments will be used, how GHG performance will be analysed and how the uncertainties and adjustments will be addressed. Enthalpy of steam Measured/calculated is not clear. The parameters steam pressure/temperature to be included in the table D.3. Coal emission factor is also one of the parameter for the emission reduction calculation and missing from table D.3. | 9.12 |
| Date: 16th October 2006 [Response from project proponent] [All the corrections made in the corrected PDD in relevant sections] | | | |
| Date: 21 Oct 2006 [S Kumar] The same has been addressed in revised PDD and was reviewed. [Acceptance and close out] Ok, closed out. [Shiva] | | | |

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