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Validation Report

KR PULP & PAPERS LTD.
AND
GARG DUPLEX & PAPER P LTD

Validation of the Biomass Based Cogeneration Units at Uttar Pradesh, India

Report No. 811284 rev. 1

20 May 2007

TÜV SÜD Industrie Service GmbH
Carbon Management Service
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Industrie Service

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Executing Operational Unit:		TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 - 80686 Munich Federal Republic of Germany		
Contact:		www.tuev-sued.de		
Client:		KR PULP & PAPERS LTD. Jalalabad Road, Shahjahanpur 242001, Uttar Pradesh India Garg Duplex & Paper P Ltd 8.5 km, Bhopa Road, Muzaffarnagar, Uttar Pradesh India		
Contract approved by:		Michael Rumberg		
Report Title:		Validation of the “Biomass Based Cogeneration Units at Uttar Pradesh, India”		
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Summary:

The Certification Body ”Climate and Energy” has been ordered by KR PULP & PAPERS LTD (KRPPL) to perform a validation of the above mentioned project.

In summary, it is TÜV SÜD´s opinion that the project “Biomass Based Cogeneration Units at Uttar Pradesh”, as described in the revised project design document of 02/01/2007, meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board and that the project furthermore meets all relevant host country criteria and correctly applies the baseline and monitoring methodology of small-scale projects of Type I: Renewable Energy Project, Category-C: Thermal energy for the user.

The above mentioned PDD was requested for adjustments by appropriate projects requests from the UNFCCC secretary issued on 17/04/2007. Due to those requests the project owner has adopted the PDD in version 4 issued on 02/05/2007 appropriately.

The reference has been taken from the indicative simplified baseline and monitoring methodologies for small-scale CDM project activity categories – I.C. (Version 8)

Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 530,000 tonnes CO_{2e} over a crediting period of ten years, resulting in a calculated annual average of 53,000 tonnes CO_{2e} represents a reasonable estimation using the assumptions given by the project documents.

Work carried out by:	Mr. Markus Knödlseder Mr. Prabhat Kumar	Internal Quality Control by:	Werner Betzenbichler

Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DG	diesel generation
DOE	Designated Operational Entity
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GDPL	Garg Duplex & Paper P Ltd
GHG	Greenhouse gas(es)
KP	Kyoto Protocol
KRPPL	KR PULP & PAPERS LTD
MP	Monitoring Plan
PDD	Project Design Document
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

KR PULP & PAPERS LTD (KRPPL) has commissioned TÜV SÜD Industrie Service GmbH (TÜV SÜD) to validate the project “Biomass Based Cogeneration Units at Uttar Pradesh”. The validation serves as design verification and is a requirement of all CDM projects. The purpose of a validation is to have an independent third party assess of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project’s compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed in the Bonn Agreement and the Marrakech Accords.

1.2 Scope

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

The audit team has been provided with the first PDD-version issued in March 2006. Based on this documentation a document review and a fact finding mission in form of an on site audit has taken place. The demanded additional information is addressed in annex 1. Requested information was given and the PDD was updated accordingly. That final PDD version (3) was issued on 02/01/2007 and serves as the basis for the final assessment presented herewith. The changes were not considered as significant since only existing information are expressed more precisely and detailed; thus the global stakeholder process was not repeated.

The above mentioned PDD was requested for adjustments by appropriate projects requests from the UNFCCC secretary issued on 17/04/2007. Due to those requests the project owner has adopted the PDD in version 4 issued on 02/05/2007 appropriately.

Studying the existing project documentation, it was obvious that the competence and capability of the validation team has to cover at least the following aspects:

- Knowledge of Kyoto Protocol and the Marrakech Accords
- Environmental and Social Impact Assessment
- Skills in environmental auditing (ISO 14000, EMAS)
- Quality assurance
- Technical aspects of thermal heat generation
- Monitoring concepts
- Political, economical and technical random conditions in host country

According to these requirements TÜV SÜD has assembled a project team in accordance with the appointment rules of the TÜV certification body “climate and energy”:

Markus Knödlseder is an auditor for environmental management systems at the department “Carbon Management Service” in the head office of TÜV SÜD Industrie Service GmbH in Munich. He has been involved in the topic of environmental auditing, baselining, monitoring and verification due to the requirements of the Kyoto Protocol since Oct. 2001. His main focus lies on renewable energies.

Prabhat Kumar is an auditor for quality and environmental management systems (according to ISO 9001 and ISO 14001) and an auditor for CDM projects at TÜV SÜD South Asia. He is based in New Delhi. He has received extensive training in the CDM validation process and participated already in several CDM project assessments.

The audit team covers following requirements:

- Knowledge of Kyoto Protocol and the Marrakech Accords (Knödlseder)
- Environmental and Social Impact Assessment (All)
- Skills in environmental auditing (ISO 14000, EMAS) (All)
- Quality assurance (All)
- Technical aspects of thermal heat generation(Knödlseder)
- Monitoring concepts (Knödlseder)
- Political, economical and technical random conditions in host country (Mr. Prabhat Kumar)

In order to have an internal quality control of the project, a team of the following persons has been composed by the certification body “climate and energy”:

Werner Betzenbichler (Head of the Certification Body)

1.3 GHG Project Description

The project proposes the installation of two cogeneration power plants at the paper mills KR Pulp & Papers Ltd. and Garg Duplex & Paper P Ltd (GDPL). Old existing boilers will be replaced by new more efficient ones. At KRPPL a 2.5 MWel and at GDPL a 5.0 MWel plant will be constructed. The surplus of produced steam shall be used for electricity generation that had been produced in diesel generators for captive purpose. As mentioned in the PDD the emission reduction will be generated due to substitution of coal that had been used in the past for steam generation and the substitution of electricity from captive diesel sets.

Project participant are KR Pulp & Papers Ltd. and Garg Duplex & Paper P Ltd. Host Party of the project activity is India.

The category of the project activity is in Scope 1 using baseline and monitoring methodology for small-scale projects of Type I: Renewable Energy Project, Category-C: Thermal energy for the user. The reference has been taken from the indicative simplified baseline and monitoring methodologies for small-scale CDM project activity categories – I.C. (Version 8)

According to the PDD and involved parties the starting dates of the project activities are:

- 15/03/2005 at KRPPL
- 02/12/2004 at GDPL

The crediting period is committed as a 10 years non renewable crediting period and it starts on 20/02/2007.

2 METHODOLOGY

The validation of the project consists of the following three phases:

- Desk review
- Follow-up interviews
- Resolution of clarification and corrective action requests

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

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

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

The completed validation protocol is enclosed in Annex 1 to this report.

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

Validation Protocol Table 2: Requirement checklist				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further subdivided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification is used when the validation team has identified a need for further clarification.

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

Figure 1 Validation Protocol Tables

2.1 Review of Documents

The project design document submitted by the client and additional background documents related to the project design and baseline were reviewed. The audit team has been provided with the first PDD-version submitted on March 2006 which had been made public on www.netinform.de. The project design document was assessed by several revisions addressing changes to the baseline and monitoring methodology requested by the CDM Executive Board and clarification requests issued by TÜV SÜD. The final updated PDD version 3 issued on Jan 02, 2007 serves as the basis for the assessment presented herewith.

2.2 Follow-up Interviews

On 12th May (KRPPL) and 14th May (GDPL) 2006 TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the paper mills were interviewed. The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Representatives of KRPPL and GDPL	• Project design • Technical equipment • Sustainable development issues • Additionality • Crediting period • Monitoring plan • Management system • Environmental impacts • Stakeholder process

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which needed to be clarified for TÜV SÜD’s positive conclusion on the project design. The Corrective Action Requests (CAR) and Clarification Requests (CR) raised by TÜV SÜD were resolved during communications between the Client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are summarized in chapter 3 below and documented in more detail in the validation protocol in Annex 1.

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.

3 VALIDATION FINDINGS

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

1) The findings from the desk review of the project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Validation Protocol in Annex 1.

2) Where TÜV SÜD had identified issues that needed clarification or that represented a risk to fulfil project objectives, a Clarification Request or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Annex 1. The validation of the project resulted in Corrective Action Requests and Clarification Requests.

3) Where Clarification or Corrective Action Requests have been issued, the exchanges between the Client and TÜV SÜD to resolve these Clarification or Corrective Action Requests is summarized.

4) The final conclusions for validation subject are presented.

The validation findings relate to the project design as documented and described in the final project design documentation.

3.1 General Description of Project Activity

3.1.1 Discussion

The project is located in India. India is a Party to the Kyoto Protocol and has accessed the Protocol at August 26, 2002; entry into force on February 02, 2005. DNA is the Indian Ministry of Environment and Forests. The project has been made public, see chapter 4.

The onsite assessment confirms that the PDD was developed consistent with the time line of the projects history. The information provided is in compliance with the actual situation as well as with planning.

Project participant are KR Pulp & Papers Ltd. and Garg Duplex & Paper P Ltd. Host Party of the project activity is India.

The category of the project activity is in Scope 1 using baseline and monitoring methodology for small-scale projects of Type I: Renewable Energy Project, Category-C: Thermal energy for the user. The reference has been taken from the indicative simplified baseline and monitoring methodologies for small-scale CDM project activity categories – I.C. (Version 8)

The validation team is convinced that the installation of the biomass based cogeneration power plants are expected to have a positive impact on the greenhouse gas balance. The project design does reflect current good practice. The design has been professionally developed. A validation of the compatibility of the single components carried out by the project developer resulted in a positive conclusion. The project does moreover apply state of the art equipment; the project uses the technology of generating and using in-house electrical power. The cogeneration plant comprises a 23.5 TPH , at steam pressure of 45 Kg/Cm2 (g) and steam temperature of 434 +/- 5 degree C boiler (KRPP) , 35 TPH, with steam pressure at 65.0Kg/cm2(g) , and steam temperature 490+/- 10 degree C boiler (GDPL) .

The project boundaries are clearly defined. The project considers the biomass boilers and the produced steam for production and electricity generation as well as the electricity generation from the turbines.

The project equipment can be expected to run for the whole project period and it can not be expected that it will be replaced by more efficient technologies.

The project is not expected to require extensive initial training or maintenance efforts. Qualified and specialized staff has already been employed in order to ensure an optimized maintenance and operation and additional recruitment process was ongoing at the time of onsite visit..

According to the information obtained by the audit team ODA does not contribute to the financing of the project.

3.1.2 Findings

Corrective Action Request No. 1:

A Letter of Approval confirming that the project contributes to sustainable development in the country needs to be submitted to the audit team.

Answer: The Letter of Approval (LoA) has been submitted.

Corrective Action Request No. 2:

Date of PDD and revision number is missing in chapter A.1

Answer: The PDD has been updated.

Corrective Action Request No. 3:

The information regarding project participants is not consistent. Complete information regarding GDPL needs to be in section C and section D.

Answer: Complete information regarding GDPL has been incorporated appropriately in the revised PDD.

Clarification Request No. 1:

A letter on the modalities of communication needs to be provided.

Answer: Letter on modalities of communication is enclosed as Enclosure 4

Clarification Request No. 2:

1) Please provide a graph and/or table with details on the installed boilers and turbo generators (e.g. biomass capacity, steam generation capacity, steam parameters, turbines, electricity generation, operating-stand by) in the pre-project scenario as well as in the project scenario

2) The data of consumption of electricity generated by diesel generation (DG) sets to be provided for last three years.

Answer: Pre-project scenario and project scenario have been clearly defined in section A.2 of the revised PDD. Details of project equipments have been further given in section A.4.2 of the PDD.

In fact the updated PDD states clearly what kind of old equipment of baseline scenario in A.2 and the new equipments in A.4.2. However, since the old equipment will stay at the site it is not clear how new and old components are connected to the paper production and against each other. Further information (see CAR 8) and completed project boundary considering the old equipment is requested.

Clarification Request No. 3:

PDD does not have complete technical specification of GDPL of the equipment in the project boundary.

Answer: PDD has been updated.

In fact the updated PDD states clearly what kind of old equipment of baseline scenario in A.2 and the new equipments in A.4.2. However, since the old equipment will stay at the site it is not clear how new and old components are connected to the paper production and against each other. Further information (see CAR 8) and completed project boundary considering the old equipment is requested.

Clarification Request 9:

a. The updated PDD should specify if mentioned capacities from old and new equipment is related to firing capacity, thermal capacity of electricity, since those units are relevant for the SSC criteria;

b. The steam unit of "TPH" is not eligible since steam parameters are not mentioned, ISO units shall be used for the same reason as stated above I point a);

c. Since the DGs of both PPs will be stay as backup the validation team considers those components as part of the project boundary. Since above clear information is missing the validation team is not able to prove if applied methodology is applicable regarding the $45MW_{thermal}$ criteria;

d. The homepage (from 02-11-2006) of KRPPL states that the co-generation units are already in place. However it is stated differently. The homepage states that has two biomass-fired boilers for steam generation and that the electricity is produced in the DG. That kind of energy production can not be considered as "combined". Clarification is needed.

Answer:

a. It has been clarified by EB that only project equipments should be considered for SSC criteria.

b. Steam parameters are included in the PDD.

c. DGs should not be included for calculating the output in order to consider the applicability criteria.

d. See http://www.krpapers.com/utilities.htm saying: The Company has two Boilers of 8 & 12 MT capacity to meet the steam requirement. The Boiler is based on Rice Husk as a fuel.
For making the company self-dependent in power generation, we have three D.G. Sets totalling to 4000 KVA capacity and the one big D.G. of the similar capacity as a stand-by to take care of uninterrupted power supply.

Corrective Action Request 14:

In consequence to CR 9, bullet point d) the diagrams of chapter B.4 in the PDD should be added according to other potential energy producing components.

Answer: The GHG procedure manual has been prepared for both GDPL and KRPPL facilities which includes line diagram indicating location of all energy and flow meters.

3.1.3 Conclusion

All documents required for registration have been submitted to the DOE. The updated PDD considers requested changes clearly.

The project boundary does not include the DG sets; they are onsite only for safety reasons. According to the project monitoring it will be ensured that produced energy will be monitored and recorded separately.

Issues are considered as resolved.

3.2 Baseline Methodology

3.2.1 Discussion

The category of the project activity is using baseline and monitoring methodology for small-scale projects of Type I: Renewable Energy Project, Category-C: Thermal energy for the user. The reference has been taken from the indicative simplified baseline and monitoring methodologies for small-scale CDM project activity categories – I.C. (Version 8). In our opinion the methodology is suitable since the cogeneration plants will be using biomass residues only and the biomass will probably not be stored for more than one year as the purchase of additional biomass is anticipated. The electricity generation will be used by captive use for the paper plant as the replacement of electricity generation by diesel generation (DG) sets.

It is not expected that the baseline will be influenced by national and/or regional policies, macroeconomic trends and political aspirations. Additionality discussion has been provided according to the methodology by using the latest version of the "Tool for demonstration and assessment of additionality.

References have been made to all data sources used.

3.2.2 Findings

Corrective Action Request No. 4

The barriers analysis are not project specific & needs to be detailed & supported by documentary evidences for each project separately.

> Answer: Barrier analysis has been revised in the PDD. Please refer Enclosure 2 for documentary evidence of the same.
>
> *The stated barriers could not be evidenced by the PPS completely. The updated PDD states for both PPs that there are financial and technological barriers. However the submitted enclosures prove for KRPPL the financial barrier and for GDPL the technological one. Concluding the PDD is stating barriers not correctly or further evidences are missing. Due to the better baseline description further clarification is needed, see CR 11.*

Corrective Action Request No. 5

Old DG sets are not listed as stand by unit and with no supportive data.

> Answer: Old DG sets have been listed as standby in section A.2 of the revised PDD.

Corrective Action Request No. 6:

In the PDD the baseline study completion date and supportive data are not evident.

> Answer: Baseline study completion date has been mentioned in section B.5 of the revised PDD. Refer Enclosure 3 for documentary evidence of same.

Corrective Action Request No. 7

Sources of data shall be provided for annex 3 of PDD.

> Answers: Sources of data to calculate the baseline emissions have been appropriately provided in section E.1.2.4 and E.1.2.5 of the revised PDD.

Clarification Request 11:

The baseline scenario at KRPPL is that the company is using a boiler fired by rice husk and coal, also evidenced by submitted enclosure 3. It is not clear to the validation team why the most likely baseline scenario would be the continuation of using coal and rice husk in comparison to using only rice husk with CDM. It is not clear, why the baseline scenario using only rice husk with the old equipment is not feasible? A retraceable explanation is needed.

> Answer: The baseline scenario can not be "Use of rice husk alone" because the design specification of the old boilers were such that they can not run on Rice husk fuel alone. Certificate from boiler manufacturer is provided.
>
> The proof of financial and technological barrier for GDPL was sent (Letter from Sitson Indai and State bank of Bikaner and Jaipur. Proof of technological barrier for GDPL is attached.

Clarification Request 12:

According to current submitted information at GDPL used a boiler fired only by rice husk. The boiler manufacturer statement for the new equipment (enclosure 2 GDPL) says that the new boiler runs better with coal and that he gives no guarantee for using rice husks (which is considered as a barrier). On the other hand that opens the option to GDPL for using coal which could cause project emissions maybe even higher than in baseline. The project owner shall explain and fix it in the PDD and monitoring plan how he will ensure that there will be not more project emissions that baseline emissions.

> Answer: The quantity of coal shall be monitored both at GDPL and KRPL, in case of project emissions exceeding base-line emissions i.e. a situation of negative emission reductions. Procedure suggested by EB shall be followed. Refer to:
> http://cdm.unfccc.int/EB/021/EB21_para18_Negative_ERs.pdf

3.2.3 Conclusion

The provided information serves demanded information issue is considered as solved. Concluding it can be stated that it has been made plausible that the chosen baseline scenario is the one deemed most realistic under the given frame conditions.

3.3 Duration of the Project / Crediting Period

3.3.1 Discussion

According to the PDD and involved parties the starting dates of the project activities are:

- 15/03/2005 at KRPPL
- 02/12/2004 at GDPL

The crediting period is committed as a 10 years non renewable crediting period and it starts on 20/02/2007. The operational lifetime for the project is estimated as 25 years.

3.3.2 Findings

None

3.3.3 Conclusion

The project is eligible for registration as a CDM project activity.

3.4 Monitoring Plan

3.4.1 Discussion

The project refers to the approved consolidated baseline methodology I.C./Version 08, Scope 1, 03 March 2006. Its justification has been provided under B.1.1 of PDD is plausible.

The parameters that have to be monitored are stated in the PDD clearly. Monitoring of baseline emissions is consistent to the option selected. The validation team has been convinced that required parameters will be monitored by qualified staffs and with eligible equipment. Prospected uncertainties of used equipments are mentioned in the PDD.

As per the methodology and the applied baseline scenario leakage effects do not need to be addressed.

During the validation process several findings raised, see following finding and solutions. Most of findings from the first PDD are solved in the final one.

3.4.2 Findings

Corrective Action Request No. 8:

Please submit a detailed procedure covering the following

- procedures for day-to-day records handling (including what records to keep, storage area of records, how to process performance documentation and retention time for records)
- Procedures for dealing with possible monitoring data adjustments and uncertainties
- Procedures for troubleshooting allowing redundant reconstruction of data in case of monitoring problems
- Procedures for reporting and review of reported results/data.
- Procedures for project performance reviews before data is submitted for verification
- Procedures for corrective actions in order to provide for more accurate future monitoring and reporting
- The onsite assessment identified that the DG sets will remain for back up purposes. What actions are envisioned to ensure that heat and electricity will be monitored equipment specific? Please, submit a drawing of designed places of meters.

  Answer: Required procedures have been defined in section D.4 and D.5 of the revised PDD. Heat and electricity would be monitored equipment specific and the necessary arrangement has been shown during validation visit.

  Further information provided: The GHG Procedures manual have been prepared for both the project sites and is submitted. Location of all metering has been shown in the diagrams in GHG procedure document

The electricity supply from DG sets has been monitored. In case of emergency any electricity drawn from the DG sets during crediting period shall be monitored. There are separate energy meters for monitoring supply from turbine.

Corrective Action Request No. 9:

In case of cogeneration plants emission reductions due to displacement of heat should be considered, resulting in monitoring the net quantity of heat as well as the thermal efficiency of the boiler.

Answer: Emission reductions due to displacement of heat have been considered. Please refer section E.1.2.4 of the revised PDD.

Appropriate monitoring parameters have been added in section D.3 of the revised PDD.

Corrective Action Request No. 10:

Information on uncertainty and accuracy level of data, including calibration of measurement instruments is missing.

Answer: Please refer section D.4 of the revised PDD for necessary information on uncertainty and accuracy level of data, including calibration of measurement instruments.

Corrective Action Request No. 11:

Please review chapter D.3 of the PDD, as project emissions are not anticipated.

Answer: Project emissions might occur in case coal is used during exigencies in the KRPPL or GDPL project activity. Hence, relevant parameters to monitor project emissions have been included in section D.3 of the revised PDD.

Corrective Action Request No. 12

The risk of emergency situation with storage of Biomass is not evident.

Answer: KRPPL and GDPL project plants are designed with adequate fire fighting system, which would help to mitigate the risk due to fire resulting from storage of biomass.

Clarification Request No. 4:

Please provide information on these planned procedures of quality control and quality assurance in table D.3 and provide a summary in the monitoring plan in Annex 4 of the PDD

Answer: QA and QC procedures are defined in section D.4 of the revised PDD.

Clarification Request No.5:

Please provide the organization chart for GDPL with clear description of authority and responsibility of project management.

Answer: Description of authority and responsibility of KRPPL and GDPL project management has been clearly defined in section D.5 of the revised PDD.

Clarification Request No.6:

Please provide more detailed information on authority and responsibility for registration, monitoring, measurement and reporting including the role of CDM team, CDM committee, senior CDM team members, senior CDM managers and CDM team members.

Answer: Please refer section D.5 of the revised PDD for the required information.

Clarification Request No. 7:

Please include a process flow scheme (including steam, electricity, and biomass) and indicate the location of the metering devices as well as the place of taking the biomass.

Answer: Please refer section B.4 of the PDD for project flow scheme.

3.4.3 Conclusion

The QA/QC manual for all involved staff is sufficient. It should be noticed that most of the parameters can be used for demonstrating the plausibility of measured data. The QA/QC manual for all involved staff and their responsibility regarding monitoring is ruled sufficiently.

The validation team can not identify any risks due to inadequate management structure or quality assurance. The above mentioned requests are answered sufficiently.

3.5 Calculation of GHG Emissions by Source

3.5.1 Discussion

Applied formulas are in compliance with selected methodology. As mentioned in the PDD the paper mill at KRPPL used about 20% of biomass already in the past, the other 80% was coal. The 20% baseline has been considered in the calculation of emission reduction that only produced steam from coal is considered as a baseline. For setting that baseline the last three years has been considered.

Calculating the substituted electricity from the old DG sets the corresponding methodology and the fixed default value has been applied correctly. Also further default values are from reliable sources being referenced in the final PDD. The project boundary is clear focused on the new boilers and turbines. The DG sets are for safety purposes.

It is stated at the manufacturer of the new boilers that coal could be used for burning either. According to the project owner it is the clear statement that coal will not be used. Thus it is not considered as project emission right now. However, if that will occur in future it is clearly mentioned in the monitoring plan and it has to be considered.

It will be also ensured that potentially produced electricity from DG sets will be monitored separately from electricity of the biomass cogeneration.

Leakages are not considered according to the methodology and monitoring plan.

3.5.2 Findings

Clarification Request No. 8:

The Sources and sinks for baseline emissions are missing.

Answer: PDD has been updated

Clarification Request 10:

a. Chapter E.1.2.4 of updated PDD determine the emission factor for substituted steam from the old coal fired units for using it in the project case. The approach rises following doubts: The simple relation tons of coal to tons of produced steam is not eligible, because the produced steam is produced by coal and rise husk. Only steam that comes from the coal can be used for the chosen approach. The given data does not allow retracing. Note: For determining the coal related steam the heat input from each fuel is relevant and not the amount of mass. The validation team is asking for a clear, transparent and evidenced derivation;

b. The use of mass related units for steam seems not to be eligible, because the specific enthalpies of steam and back flow are not clear, in addition they will differ from baseline to project components and operation. So there is a risk of using inconsistent values. Concluding the relation and the later monitoring should base on produced / delivered net heat since this value is really comparable between baseline and project scenario.

Answer: The quantity of steam produced from per tonne of coal has been calculated based on the past data of calorific value and efficiency. The PDD has been revised and steam parameters are mentioned in the PDD. The process steam requirement shall remain unchanged.

3.5.3 Conclusion

The calculation of GHG emissions and used data are according to applied methodology and its requirements. The updated PDD considers requested sources. Issue is considered as resolved.

3.6 Environmental Impacts

3.6.1 Discussion

The environmental impacts can be seen as being low. These low impacts have been sufficiently described in the PDD. Main impacts like noise and air quality during construction and operation have been described in the PDD. The PDD states that no additional land is required for the proposed plant although for the storage of biomass. That additional land use is not considered as significant. Transboundary impacts are not expected.

The legislation does not require an EIA for this type of project.

Negative environmental effects are not expected to be created by the project. Given the nature of the project design this seems to be reasonable.

Transboundary effects are not expected as the project site is far from the national boundary.

As no significant environmental impacts are expected, such impacts have not influenced the project design.

3.6.2 Findings

Corrective Action Request No. 13:

Description regarding collection of ash is missing to avoid air pollution.

Answer: The required description to avoid air pollution has been included in section F.1 of the revised PDD.

3.6.3 Conclusion

The project does comply with the environmental requirements.

3.7 Comments by Local Stakeholders

3.7.1 Discussion

A formal consultation process with local stakeholders has taken place and corresponding information has been submitted to the audit team. The stakeholders consulted included people from the local community and also the representatives of the local communities and the states. In addition neighbours to the site have been interviewed.

The stakeholders have been invited to meetings via post and electronic mail and which has also been published in local and regional newspapers.

3.7.2 Findings

None

3.7.3 Conclusion

No negative comments of the stakeholders were received. The project does comply with the requirements.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on its website. The PDD was open for comments from **April 13 to May 12, 2006** for 30 days, by Parties, stakeholders and non-governmental organizations.

Published on:
ttp://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=1655&Ebene1_ID=26&Ebene2_ID=460&mode=1

During the commenting period there has been one non official comment received per e-mail on 2006-24-04.

4.1 Comment

Welzel, Manja

Von: Ambika Kumar [ambika.kumar1301@rediffmail.com]
Gesendet: Mittwoch, 19. April 2006 17:19
An: Knödlseder, Markus
Cc: Rumberg, Michael; Welzel, Manja
Betreff: KRPP, India - COMMENTS

Use of methodology (IC) is also seems to be wrong, as first of all bundled project should meet limit in IC (45MWth, detailed calculations should be published), and also section B.5 talks about baseline as electricity generation using DG sets and not thermal energy as is the case with IC.

Additionality should be different for both power projects in the PDD as both have different configuration hence technology barrier/sensitivity analysis need to be done separately (how come both have same cost structure/same IRR??, if so then why one company has chosen 45Kg and another 67Kg). Strongly urge project developer to republish the document with necessary changes for stakeholder consultation else whole purpose of stakeholder comments would be defied without accurate information

45Kg and 67Kg technology are not at all new technologies for Indian scenario. If 45 Kg (as given in the PDD!!) is high pressure technology then what is a low pressure technology? Nowadays people are moving to even higher pressure and hence argument that 45/67 technologies are additional is totally flawed.

Financial additionality has not been described properly, not enough data provided to see what is existing IRR etc, need to republish document with all necessary information.

Organisational capability: Most of the paper mills in UP are already using biomass based systems for generating steam, it should be checked if project promoter also have similar systems or not. If they have, then additionality is not valid.

4.2 Consideration of Comment

Unfortunately, the stakeholder did not identified himself as an accredited or effected stakeholder, thus the comment has not been answered or considered formally in the validation process. However the validation team took note of the comment and considered raised arguments in their own validation.

5 VALIDATION OPINION

The Certification Body ”Climate and Energy” has been ordered by KR PULP & PAPERS LTD to perform a validation of the project “Biomass Based Cogeneration Units at Uttar Pradesh”.

The project avoids GHG emissions by substituting fossil fuelled generation of steam and electricity by biomass cogeneration. The technological barriers demonstrate that the exclusive use of this kind of biomass is more difficult and could cause higher corrosion; 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. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

In summary, it is TÜV SÜD´s opinion that the project, as described in the revised project design document of 02/01/2007, meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board and that the project furthermore meets all relevant host country criteria and correctly applies the baseline and monitoring methodology of small-scale projects of Type I: Renewable Energy Project, Category-C: Thermal energy for the user. The reference has been taken from the indicative simplified baseline and monitoring methodologies for small-scale CDM project activity categories – I.C. (Version 8)

Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 530,000 tonnes CO_{2e} over a crediting period of ten years, resulting in a calculated annual average of 53,000 tonnes CO_{2e} represents a reasonable estimation using the assumptions given by the project documents.

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

Munich, 2007-05-20

Werner Betzenbichler
Head certification body
“climate and energy“

Munich, 2007-05-20

Markus Knödlseder
Project Manager

Annex 1: Validation Protocol

Table 1 Project’s Environment

REQUIREMENT	REFERENCE	Comment	CONCLUSION
1. The host country shall be a Party to the Kyoto Protocol	Marrakech Accords, CDM Modalities §30	India is a Party to the Kyoto Protocol and has accessed the Protocol at August 26, 2002; entry into force on February 02, 2005.	☑
2. Parties participating in the CDM shall designate a national authority for the CDM	Marrakech Accords, CDM Modalities §29	The DNA is the Indian Ministry of Environment and Forests.	☑
3. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof.	Kyoto Protocol Art. 12.2, Marrakech Accords, CDM Modalities §40a	**Corrective Action Request No. 1:** A Letter of Approval confirming that the project contributes to sustainable development in the country needs to be submitted to the audit team.	The LoA has been submitted. ☑
4. The project shall have the written approval of voluntary participation from the designated national authorities of each party involved.	Kyoto Protocol Art. 12.5a, Marrakech Accords, CDM Modalities §40a	The project is a unilateral project. See CAR 1	☑
5. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction	Kyoto Protocol Art.12.2	Not relevant as it is a unilateral project.	☑

REQUIREMENT	REFERENCE	Comment	CONCLUSION
commitment under Art. 3. A letter of approval for participants originating from Annex-I-Countries should be available.			
6. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available	Marrakech Accords, CDM Modalities, §40	A global stakeholder process has been taken place on the UNFCCC website. Starting date:, 13th April 2006 –12th May 2006 ,30 days	☑
7. The project design document shall be in conformance with the UNFCCC CDM-PDD format	Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	The project design document does conform to the CDM Project Design Document format (version 02, from 1 July 2004) valid by the time of PDD submission.	☑
8. The project participants shall submit a letter on the modalities of communication (MoC) before submitting a request for registration	EB-09 F_CDM_REG form	**Clarification Request No. 1:** A letter on the modalities of communication needs to be provided.	Letter on the modalities of communication has been provided. ☑

Table 2 PDD

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A. General Description of Project Activity					
A.1. Project Title					
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	1,2	DR I	The project name “Biomass Based Co-Generation Units at Uttar Pradesh “	☑	☑
A.1.2. Are there an indication of a revision number and the date of the revision?	2	DR	**Corrective Action Request No. 2:** Date of PDD and revision number is missing in chapter A.1	**CAR 2**	☑
A.1.3. Is this in consistency with the time line of the project’s history?	1,2,	DR I	Yes. The PDD development is consistent with the time line of the projects history. The project activity has started in 15th March 2005.	☑	☑
A.2. Description of the project activity					
A.2.1. Is the description delivering a transparent over-view of the project activities?	1,2	DR I	The description of the project activity is mainly clear. A new efficient biomass-based cogeneration plant will be installed adjacent to the paper mill to generate steam and electricity for internal consumption. The PDD describes the pre- and post project ac-	**CR 2**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			tivity in overall however this description needs more details. **Clarification Request No. 2:** 1)Please provide a graph and/or table with details on the installed boilers and turbo generators (e.g. biomass capacity, steam generation capacity, steam parameters, turbines, electricity generation, operating-stand by) in the pre-project scenario as well as in the project scenario 2) The Data of consumption of electricity generated by DG sets to be provided for last three years.		
A.2.2. Is all information provided in compliance with actual situation or planning?	1,2, 10,11	DR I	Yes. The information provided is in compliance with the actual situation. (pre-project scenario) as well as with planning (cogeneration plant).	☑	☑
A.2.3. Are proofs available evidencing all information with relevance for the validity, for the determination of baseline and project emissions and for emission projections?	1,2,5, 6,7,8, 9,10,1 1	DR I	Evidences for these parameters has been presented to the DOE based on purchase	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.2.4. Is all information provided in consistency with details provided by further chapters of the PDD?	2	DR	Yes, the description of the project activity is consistent within the PDD.	☑	☑
A.3. Project Participants					
A.3.1. Is the form required for the indication of project participants correctly applied?	2	DR	KR Pulp & Paper Ltd.(KRPP) , Garg Duplex & papers P ltd. (GDPL)	☑	☑
A.3.2. Is the voluntary participation of all listed entities or Parties confirmed by each of them?	1,2	DR I	Letter of Approval needs to be provided. See above CAR 1	**CAR 1**	☑
A.3.3. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	2	DR	**Corrective Action Request No. 3:** The information regarding project participants is not consistent. Complete information regarding GDPL needs to be build in section C and section D	**CAR 3**	☑
A.4. Technical description of the project activity					
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1,2	DR I	See A3.3	**CAR 3**	☑
A.4.2. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	1,2,3, 11	DR I	Yes, the cogeneration plant will be installed within the area of the paper plant. Biomass storage will take place adjacent to the co-	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			generation plant.		
A.4.3. Is the category(ies) of the project activity correctly identified?	1,2	DR I	Yes, the project falls under the sectoral scope 1: Energy industries (renewable/non-renewable sources.	☑	☑
A.4.4. Does the project design engineering reflect current good practices?	1,2, 10,11	DR I	The detailed project report was carried out by A.S. Sachdeva & Associates for KRPP. **Clarification Request No. 3:** PDD does not have complete technical specification of GDPL of the equipment in the project boundary.	**CR 3**	☑
A.4.5. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	1,2, 10,11	DR I	Yes. The installation of the biomass based cogeneration power plant is expected to have a positive impact on the greenhouse gas balance.	☑	☑
A.4.6. Is the brief explanation how the project will reduce greenhouse gas emission transparent and suitable?	1,2	DR I	Yes, the explanation given is transparent. Greenhouse gas emissions will be reduced	☑	☑
A.4.7. Is all information provided in compliance with actual situation or planning as available by the project participants?	1,2,4, 5,6,7, 8,9, 10,11,	DR I	Yes, the information is complying with the actual situation as well as with the planning data.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.4.8. 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?	1,2, 10,11	DR I	The project uses the technology of generating and using in-house electrical power. The cogeneration plant comprises a 23.5 TPH , at steam pressure of 47.5 Kg/Cm2 (g) and steam temperature of 434 +/- 5 degree C boiler (KRPP) , 35 TPH, with steam pressure at 63.0Kg/cm2(g) , and steam temperature 490+/- 10 degree C boiler (GDPL) .	☑	☑
A.4.9. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2	DR I	It is unlikely that the key technology applied will be substituted by other or more efficient technologies within the crediting period of 10 years.	☑	☑
A.4.10. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1,2	DR I	No, the project is not expected to require extensive initial training or maintenance efforts. Qualified and specialized staff has already been employed in order to ensure an optimized maintenance and operation and additional recruitment process is ongoing.	☑	☑
A.4.11. Does the project make provisions for meeting training and maintenance needs?	1,2	DR I	Trained manpower is expected to be available to meet the operation and maintenance needs of the plant.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.4.12. Is a schedule available on the implementation of the project and are there any risks for delays?	1,2,3, 9,	DR I	A project time schedule has been set up and is updated regularly. No major risks for project delay are expected that would have an impact on emission reduction projections.	☑	☑
A.4.13. Is the form required for the indication of projected emission reductions correctly applied?	1,2	DR I	The correct table has been used and applied as required.	☑	☑
A.5. Public Funding					
A.5.1. Is all information on public funding provided in compliance with actual situation or planning as available by the project participants?	1,2,12	DR I	According to the information obtained by the audit team ODA does not contribute to the financing of the project.	☑	☑
A.5.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 2)?	2	DR	Yes, the information provided is consistent.	☑	☑
B. Baseline Methodology					
B.1. Choice and Applicability					
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	2,	DR	Yes, the baseline methodology applied has been approved by the CDM Executive Board and is published as under the name	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			I.C./Version 08, Scope 1, 03 March 2006		
B.1.2. Is the choice of the methodology correctly justified by the PDD?	1,2,	DR I	Yes, the choice of the methodology has been justified.	☑	☑
B.1.3. Is the baseline methodology the one deemed most applicable for this project?	1,2,	DR I	The baseline methodology deemed to be the one most applicable for this project.	☑	☑
B.1.4. Is the project in conformance with all applicability criteria of the applied methodology?	1,2,	DR I	As per its design, the cogeneration plant will be using biomass residues only and the biomass will probably not be stored for more than one year as the purchase of additional biomass is anticipated.	☑	☑
B.2. Application of the Baseline Methodology / Identification of the Baseline Scenario					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	1,2,	DR I	Yes, the electricity generation will be used by captive use for the paper plant as the replacement of electricity generation by DG sets.	☑	☑
B.2.2. Does the application consider all potential baseline scenarios in the discussion?	1,2,	DR I	See above B.2.1.	☑	☑
B.2.3. Is conservativeness addressed in the way of identifying the baseline?	1,2,	DR I	B 2.1	☑	☑
B.2.4. Has the baseline been established on a project-	1,2,	DR	Yes, it has been based on the continuation	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
specific basis?		I	of the present situation with respect to the energy production for the paper plant.		
B.2.5. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	1,2,	DR I	Yes. It is not expected that the baseline will be influenced in that context.	☑	☑
B.2.6. Is the baseline determination compatible with the available data?	1,2,19	DR I	Yes. All necessary data are available.	☑	☑
B.2.7. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	1,2,19	DR I	Yes.	☑	☑
B.2.8. Does the PDD follow the approach for identifying the baseline scenario as given by the approved methodology?	1,2,	DR I	Yes.	☑	☑
B.2.9. Is all literature and sources clearly referenced?	1,2	DR I	Yes, literature has been referenced. Data source references for baseline emission calculations have been provided in Annex 3.	☑	☑
B.3. Additionality					
B.3.1. Is the discussion of how emission reductions are achieved by the project scenario in comparison to the identified baseline scenario pro-	1,2,	DR I	Yes, additionality discussion has been provided according to the methodology by using the latest version of the “Tool for dem-	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
vided in a transparent manner?			onstration and assessment of additionality.		
B.3.2. In case of using calculation models in order to demonstrate emission reductions: Are all formulae and input data based on provable records?	2	DR	Not applicable.	☑	☑
B.3.3. Does the PDD clearly demonstrate the additionality using the approach as given by the methodology?	1,2,	DR I	Yes. See above B.3.1.	☑	☑
B.3.4. In case of using the additionality tool: Are all steps followed in a transparent and provable manner?	1,2	DR I	**Corrective Action Request No. 4:** The barriers analysis are not project specific & needs to be detailed & supported by documentary evidences for each project separately .	**CAR 4**	
B.3.5. Does the discussion sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	1,2	DR I	Yes, however it needs to be supported by related evidences (see B.3.4.).	☑	☑
B.3.6. Does the CDM registration have any impact on the implementation of the project?	1,2	DR I	Yes. The CDM-incentive has been a driver for the implementation of the project as successful CDM applications	☑	☑
B.3.7. Is the approach for demonstrating additionality provided by the most recent (or still applicable)	1,2	DR I	Please refer to B.3.4.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
methodology correctly applied?					
B.3.8. Are other proofs than anecdotal evidence for all assumptions and statements used by the additionality discussion?	1,2	DR I	See B 3.4	☑	☑
B.4. Project Boundary					
B.4.1. Are all emission related to the baseline scenario clearly identified and described in a complete manner?	1,2	DR I	The project boundary includes the project site (biomass fuel storage and processing units, new boilers/turbine and auxiliaries, existing boilers/turbines)	☑	☑
B.4.2. In case of grid connected electricity projects: Is the relevant grid correctly identified due to the EB guidance and the underlying methodology?	1,2, 16	DR I	NA	☑	☑
B.4.3. Are all emission related to the project scenario clearly identified and described in a complete manner?	1,2	DR I	Yes. Project emissions are related to the transportation of purchased biomass to the site. **Corrective Action Request No. 5:** Old DG sets are not listed as stand by unit and with no supportive data.	**CAR 5**	☑
B.4.4. Are all emission related to leakage clearly identified and described in a complete manner?	1,2,19	DR I	There is no leakage according to the methodology.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.5. Detailed Baseline Information					
B.5.1. Is there any indication of a date when determine the baseline?	1,2	DR I	**Corrective Action Request No. 6:** In the PDD the baseline study completion date and supportive data are not evident.	**CAR 6**	☑
B.5.2. Is this in consistency with the time line of the PDD history?	1,2	DR I	See B5.1	☑	☑
B.5.3. Is all data required provided in a complete manner by annex 3 of the PDD?	1,2	DR I	See B5.1 **Corrective Action Request No. 7:** Sources of data to be provided for annex 3	**CAR 7**	☑
B.5.4. Is all data given in compliance with the methodology?	1,2,	DR I	See B.5.3	☑	☑
B.5.5. Is all data evidence by official data sources or replicable records?	1,2	DR I	See B.5.3	☑	☑
B.5.6. Is the vintage of the baseline data correct?	1,2,	DR I	See B.5.3	☑	☑
***C.* Duration of the Project / Crediting Period**					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1,2,	DR I	Yes. The project starting date is 15th of March 2005 and the operational lifetime for the project is estimated as 25 years.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1,2	DR I	The crediting period is fixed for 21 years.	☑	☑
D. Monitoring Plan					
D.1. Monitoring Methodology					
D.1.1. Is the monitoring methodology previously approved by the CDM Methodology Panel?	1,2,	DR I	Yes, it refers to the approved consolidated baseline methodology I.C./Version 08, Scope 1, 03 March 2006	☑	☑
D.1.2. Is the choice of the methodology correctly justified by the PDD?	1,2	DR I	Justification has been provided under B.1.1.	☑	☑
D.1.3. Is the project in conformance with all applicability criteria of the applied methodology?	1,2,	DR I	See B 1.4.	☑	☑
D.1.4. Does the monitoring methodology provide a consistent approach in the context of all parameter to be monitored and further information provided by the PDD?	1,2	DR I	The monitoring plan of Annex 4 does not give information about how the monitoring will take place. **Corrective Action Request No. 8:** Please submit a detailed procedure covering the following - procedures for day-to-day records	**CAR 8**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			handling (including what records to keep, storage area of records, how to process performance documentation and retention time for records) - procedures for dealing with possible monitoring data adjustments and uncertainties - procedures for troubleshooting allowing redundant reconstruction of data in case of monitoring problems - procedures for reporting and review of reported results/data. - procedures for project performance reviews before data is submitted for verification - procedures for corrective actions in order to provide for more accurate future monitoring and reporting. - the onsite assessment identified that the DG sets will remain for back up purposes. What actions are envisioned to ensure that heat and electricity will		

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			be monitored equipment specific? Please, submit a drawing of designed places of meters.		
D.1.5. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?	1,2,	DR I	Monitoring of baseline emissions is consistent to the option selected.	☑	☑
D.2. Monitoring of Project Emissions (if applied)					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	1,2,	DR I	Yes, the monitoring plan provide for the collection and archiving of all relevant data.	☑	☑
D.2.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	1,2	DR I	Yes, selection of GHG indicators is in conformity with the requirements.	☑	☑
D.2.3. Will it be possible to determine the specified project GHG indicators?	1,2	DR I	Yes it should be possible to determine the GHG indicators.	☑	☑
D.2.4. Will the indicators enable comparison of project data and performance over time?	1,2	DR I	Yes.	☑	☑
D.2.5. Is the information given for each monitoring	1,2	DR	Yes	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?		I			
D.2.6. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	1,2	DR I	No. See above D. 1.4	☑	☑
D.2.7. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	1,2	DR I	See above D.1.4	☑	☑
D.2.8. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	1,2,	DR I	Yes, all formulae are in compliance with the methodology however no choice of option has been made (see above D.1.5.)	☑	☑
D.3. Monitoring of Baseline Emissions (if applied)					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions of the baseline emissions during the crediting period?	1,2,	DR I	All data are not considered in the monitoring plan **Corrective Action Request No. 9:** No. In case of cogeneration plants emission reductions due to displacement of heat should be considered, resulting in monitor-	**CAR 9**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			ing the net quantity of heat as well as the thermal efficiency of the boiler.		
D.3.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	1,2,	DR I	Yes. The parameters have been selected according to the methodology.	☑	☑
D.3.3. Will it be possible to determine the specified project GHG indicators?	1,2,	DR I	Yes, it will be possible to monitor these indicators.	☑	☑
D.3.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	1,2,	DR I	**Corrective Action Request No. 10:** Information on Uncertainty and accuracy level of data, including calibration of measurement instruments is missing.	**CAR 10**	☑
D.3.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	1,2,	DR I	See above D. 1.4 and D 3.4.	☑	☑
D.3.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	1,2,	DR I	see above D.1.4 and D 3.4	☑	☑
D.3.7. Are all formulae used to determine baseline	1,2,	DR	**Corrective Action Request No. 11:**	**CAR**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
emission clearly indicated and in compliance with the monitoring methodology.		I	Please review chapter D.3 of the PDD, as project emissions are not anticipated.	**11**	
D.4. Direct Monitoring of Emission Reductions (if applied)					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring directly the greenhouse gas emissions reductions during the crediting period?	2	DR	Not Applicable	☑	☑
D.4.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	2	DR	See above D 4.1	☑	☑
D.4.3. Will it be possible to determine the specified project GHG indicators?	2	DR	See above D 4.1	☑	☑
D.4.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	2	DR	See above D 4.1	☑	☑
D.4.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of po-	2	DR	See above D 4.1	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
tential for biases or intended or unintended changes in data records?					
D.4.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	2	DR	See above D 4.1	☑	☑
D.4.7. Are all formulae used to determine project emission reductions clearly indicated and in compliance with the monitoring methodology.	2	DR	See above D 4.1	☑	☑
D.5. Monitoring of Leakage (if applicable)					
D.5.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring of leakage emissions during the crediting period?	2,	DR	As per the methodology and the applied baseline scenario leakage effects do not need to be addressed.	☑	☑
D.5.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the approved methodology applied?	2,	DR	Not applicable, see above D 5.1	☑	☑
D.5.3. Will it be possible to determine the specified project GHG indicators?	2,	DR	Not applicable, see above D 5.1	☑	☑
D.5.4. Is the information given for each monitoring variable by the presented table sufficient to en-	2,	DR	Not applicable, see above D 5.1	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
sure the verification of a proper implementation of the monitoring plan?					
D.5.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	2,	DR	Not applicable, see above D 5.1	☑	☑
D.5.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	2	DR	Not applicable, see above D 5.1	☑	☑
D.5.7. Are all formulae used to determine leakage emissions clearly indicated and in compliance with the monitoring methodology.	2,	DR	Not applicable, see above D 5.1	☑	☑
D.6. Determination of Emission Reductions					
D.6.1. Are all formulae used to determine leakage emissions clearly indicated and in compliance with the monitoring methodology.	1,2,	DR	As per the methodology and the applied baseline scenario leakage effects do not need to be addressed.	☑	☑
D.6.2. Is the information given for each calculated variable sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	1,2	DR	Final comment can be provided only after response to clarification and corrective action requests in chapter D.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
D.7. Quality Control (QC) and Quality Assurance (QA) Procedures					
D.7.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	1,2	DR I	As the plant is under commissioning stage No. Quality control and quality assurance procedures have been planned for baseline data monitoring only. **Clarification Request No. 4:** Please provide information on these planned procedures of quality control and quality assurance in table D.3. and provide a summary in the monitoring plan in Annex 4 of the PDD	**CR 4**	☑
D.7.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	1,2	DR I	See above D.7.1.	☑	☑
D.7.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	1,2	DR I	No. See above D 7.1.	☑	☑
D.7.4. Is it ensured that data will be bound to national or internal reference standards?	1,2	DR I	See above D 7.1.	☑	☑
D.7.5. Is it ensured that data provisions will be free of	1,2	DR	Yes, it seems to be ensured, however final	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
potential conflicts of interests resulting in a tendency of overestimating emission reductions?		I	comments can be given after response to CAR/CR in chapter B and D has been provided.		
D.8. Operational and management structure					
D.8.1. Is the authority and responsibility of project management clearly described?	1,2	DR I	A CDM team has been formed, which will be responsible for monitoring of all relevant data. However from the description it is not getting clear who will be involved in this team. The authority and overall responsibility of project management and its linkage to the existing company should be more clearly described. **Clarification Request No.5:** Please provide the organization chart for GDPL with clear description of authority and responsibility of project management.	**CR 5**	☑
D.8.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	1,2	DR I	The authority and responsibility lies within the CDM team. An overall description on this structure has been presented. **Clarification Request No. 6** Please provide more detailed information on	**CR 6**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			authority and responsibility for registration, monitoring, measurement and reporting including the role of CDM team, CDM committee, senior CDM team members, senior CDM managers and CDM team members.		
D.8.3. Are procedures identified for training of monitoring personnel?	1,2	DR I	Specific procedures have not been defined. However no special training seems to be required as trained personnel with background in power projects is available.	☑	☑
D.8.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	1,2	DR I	**Corrective Action Request No. 12:** The risk of emergency situation with storage of Biomass is not evident.	**CAR 12**	☑
D.9. Monitoring Plan (Annex 4)					
D.9.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	1,2	DR I	No, a detailed project specific monitoring plan needs to be presented. See above CAR 9 (D 1.4.)	☑	☑
D.9.2. Does the monitoring plan completely describes all measures to be implemented for monitoring all parameter required?	1,2	DR I	No, these should be included. See CAR 9 (D 1.4.)	☑	☑
D.9.3. Does the monitoring plan completely describes all measures to be implemented for ensuring	1,2	DR I	No, see above CAR 11 (D 7.1) and CAR 9 (D.1.4.)	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
data quality of all parameter to be monitored?					
D.9.4. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	1,2	DR I	No. **Clarification Request No. 7** Please include a process flow scheme (including steam, electricity, biomass) and indicate the location of the metering devices as well as the place of taking the biomass	**CR 7**	☑
D.9.5. Are procedures identified for calibration of monitoring equipment?	1,2	DR I	No, see above D.1.4.	-	☑
D.9.6. Are procedures identified for maintenance of monitoring equipment and installations?	1,2	DR I	No, see above D.1.4.	-	☑
D.9.7. Are procedures identified for monitoring, measurements and reporting?	1,2	DR I	No, see above D.1.4.	-	☑
D.9.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	1,2	DR I	No, see above D.1.4.	-	☑
D.9.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	1,2	DR I	No, see above D.1.4.	-	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
D.9.10. Does the monitoring plan provide procedures identified for troubleshooting allowing redundant reconstruction of data in case of monitoring problems?	1,2	DR I	No, see above D.1.4.	-	☑
D.9.11. Are procedures identified for review of reported results/data?	1,2	DR I	No, see above D.1.4.	-	☑
D.9.12. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	1,2	DR I	Respective procedures are not defined explicitly, but are part of of the regular performance monitoring. This deemed to be acceptable.	☑	☑
D.9.13. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	1,2	DR I	No, see above D.1.4.	-	☑
D.9.14. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	1,2	DR I	No, see above D.1.4.	-	☑
E. Calculation of GHG Emissions by Source					
E.1. Predicted Project GHG Emissions					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	1,2	DR I	Yes, project emissions associated with the transport of fuel rice husk has been consid-	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			ered.		
E.1.2. Are the GHG calculations documented in a complete and transparent manner?	1,2,	DR I	Yes, the calculations provided are transparent.	☑	☑
E.1.3. Have conservative assumptions been used to calculate project GHG emissions?	1,2,	DR I	Yes	☑	☑
E.1.4. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	1,2	DR I	Yes	☑	☑
E.1.5. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	1,2	DR I	Yes.	☑	☑
E.1.6. Is the projection based on provable input parameter?	1,2	DR I	See above E.1.3.	☑	☑
E.2. Leakage					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?	2,	DR	As per the methodology and the applied baseline scenario leakage effects do not need to be addressed.	☑	☑
E.2.2. Have these leakage effects been properly accounted for in calculations?	2,	DR	Not applicable, see above E.2.1.	☑	☑
E.2.3. Have conservative assumptions been used to	2,	DR	Not applicable, see above E.2.1.	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
calculate leakage emissions?					
E.2.4. Are uncertainties in the leakage estimates properly addressed in the documentation?	2,	DR	Not applicable, see above E.2.1.	☑	☑
E.2.5. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	2,	DR	Not applicable, see above E.2.1.	☑	☑
E.2.6. Is the projection based on provable input parameter?	2,	DR	Not applicable, see above E.2.1.	☑	☑
E.3. Baseline Emissions					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	1,2	DR I	Operational characteristics were developed within the detailed project report .	☑	☑
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	1,2	DR I	**Clarification Request No. 8** Clear sources baseline emissions are missing	**CR8**	☑
E.3.3. Are the GHG calculations documented in a complete and transparent manner?	1,2,	DR I	The calculation approach mainly follows the approved methodology. However emission reductions due to displacement of heat need to be discussed. Please refer to CR 13 (D.3.1.).	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	1,2,	DR I	Yes.	☑	☑
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	1,2	DR I	Yes.	☑	☑
E.3.6. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	1,2	DR I	No, the power will be used by plant only.	☑	☑
E.3.7. Is the projection based on provable input parameter?	1,2	DR I	See above	☑	☑
E.4. Emission Reductions					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1,2	DR I	Yes.	☑	☑
E.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	2	DR	Yes.	☑	☑
E.4.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1,2,	DR I	Yes.	☑	☑
F. Environmental Impacts					
F.1.1. Has an analysis of the environmental impacts of	1,2	DR	Main impacts like noise and air quality dur-	**CAR 13**	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
the project activity been sufficiently described?		I	ing construction and operation have been described in the PDD. The PDD states that no additional land is required for the proposed plant although for the storage of biomass. **Corrective Action Request No. 13:** Description regarding collection of ash is missing to avoid air pollution.		
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1,2	DR I	EIA is not a requirement as per law of Host country.	☑	☑
F.1.3. Will the project create any adverse environmental effects?	1,2	DR I	No, the project is not expected to create adverse environmental effects	☑	☑
F.1.4. Are transboundary environmental impacts considered in the analysis?	1,2	DR I	Transboundary impacts are not considered to be of relevance.	☑	☑
F.1.5. Have identified environmental impacts been addressed in the project design?	1,2	DR I	The relevant environmental impacts have been considered.	☑	☑
F.1.6. Does the project comply with environmental legislation in the host country?	1,2, 13,15	DR I	See above F.1.2 CR 11	☑	☑

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
G. Stakeholder Comments					
G.1.1. Have relevant stakeholders been consulted?	1,2,3, 4,13, 17	DR I	Yes, near-by villagers has been addressed through the village Panchayat and State Pollution Control Board has been consulted.	☑	☑
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	1,2,3, 4,13, 17	DR I	Yes, a meeting has been held in the near by villages and positives comments have been received.	☑	☑
G.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1,2,3, 4,13,	DR I	A stakeholder consultation process is not required according to Indian legislation, however no objection certificates are required from local authorities, the State Pollution Control Board, the State Government, These have been obtained.	☑	☑
G.1.4. Is the undertaken stakeholder process described in a complete and transparent manner?	1,2	DR I	Yes, the stakeholder process described, the documentary evidence is available.	☑	☑
G.1.5. Is a summary of the stakeholder comments received provided?	1,2	DR I	Yes.	☑	☑
G.1.6. Has due account been taken of any stakeholder comments received?	1,2		According to the stakeholder meeting evidences no negative comments has been received.	☑	☑

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. To checklist question in tables 1 and 2	Summary of project owner response	Validation team conclusion
CAR 1: Corrective Action Request No. 1: A Letter of Approval confirming that the project contributes to sustainable development in the country needs to be submitted to the audit team.	Table 1, No. 3	LOA is enclosed (Enclosure 1)	The validation received a valid LoA. Issue is considered as resolved. ☑
CAR 2: Corrective Action Request No. 2: Date of PDD and revision number is missing in chapter A.1	A.1.2	Date and version of the PDD has been incorporated in chapter A.1 of revised PDD	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑
CAR 3: Corrective Action Request No. 3: The information regarding project participants is not consistent. Complete information regarding GDPL needs to be build in section C and section D	A3.3	Complete information regarding GDPL has been incorporated appropriately in the revised PDD.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑

CAR 4 Corrective Action Request No. 4 The barriers analysis are not project specific & needs to be detailed & supported by documentary evidences for each project separately .	B3.4	Barrier analysis has been revised in the PDD. Please refer Enclosure 2 for documentary evidence of the same.	The stated barriers could not be evidenced by the PPS completely. The updated PDD states for both PPs that there are financial and technological barriers. However the submitted enclosures prove for KRPPL the financial barrier and for GDPL the technological one. Concluding the PDD is stating barriers not correctly or further evidences are missing. Due to the better baseline description further Clarification is needed, see CR 11.
CAR 5 Corrective Action Request No. 5 Old DG sets are not listed as stand by unit and with no supportive data.	B 4.3	Old DG sets have been listed as standby in section A.2 of the revised PDD.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑
CAR 6: Corrective Action Request No. 6: In the PDD the baseline study completion date and supportive data are not evident.	B5.1	Baseline study completion date has been mentioned in section B.5 of the revised PDD. Refer Enclosure 3 for documentary evidence of same.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑
CAR 7: Corrective Action Request No. 7 Sources of data shall be provided for annex 3 of PDD.	B5.3	Sources of data to calculate the baseline emissions have been appropriately provided in section E.1.2.4 and E.1.2.5 of the revised PDD.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑

CAR 8: <u>Corrective Action Request No. 8:</u> Please submit a detailed procedure covering the following - procedures for day-to-day records handling (including what records to keep, storage area of records, how to process performance documentation and retention time for records) - Procedures for dealing with possible monitoring data adjustments and uncertainties - Procedures for troubleshooting allowing redundant reconstruction of data in case of monitoring problems - Procedures for reporting and review of reported results/data. - Procedures for project performance reviews before data is submitted for verification - Procedures for corrective actions in order to provide for more accurate future monitoring and reporting.	D.1.4	Required procedures have been defined in section D.4 and D.5 of the revised PDD. Heat and electricity would be monitored equipment specific and the necessary arrangement has been shown during validation visit.	The updated PDD provides more information about envisioned procedures. However, against the back round of existing back up components the validation team asks again for submitting information regarding the energy components and the relevant points of measurement. Provided information: The GHG Procedures manual has been prepared for both the project sites and is attached. Location of all metering has been shown in the diagrams in GHG procedure document The electricity supply from DG sets has been monitored. In case of emergency any electricity drawn from the DG sets during crediting period shall be monitored. There are separate energy meters for monitoring supply from turbine. Provided information is considered as sufficient. Issues are solved. ☑

- The onsite assessment identified that the DG sets will remain for back up purposes. What actions are envisioned to ensure that heat and electricity will be monitored equipment specific? Please, submit a drawing of designed places of meters.			
CAR 9: <u>Corrective Action Request No. 9:</u> In case of cogeneration plants emission reductions due to displacement of heat should be considered, resulting in monitoring the net quantity of heat as well as the thermal efficiency of the boiler.	D.3.1	Emission reductions due to displacement of heat have been considered. Please refer section E.1.2.4 of the revised PDD. Appropriate monitoring parameters have been added in section D.3 of the revised PDD.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑
CAR 10: <u>Corrective Action Request No. 10:</u> Information on uncertainty and accuracy level of data, including calibration of measurement instruments is missing	D.3.4	Please refer section D.4 of the revised PDD for necessary information on uncertainty and accuracy level of data, including calibration of measurement instruments.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑

CAR 11: Corrective Action Request No. 11: Please review chapter D.3 of the PDD, as project emissions are not anticipated.	D 3.7	Project emissions might occur in case coal is used during exigencies in the KRPPL or GDPL project activity. Hence, relevant parameters to monitor project emissions have been included in section D.3 of the revised PDD.	Issue is considered as resolved. ☑
CAR 12 : Corrective Action Request No. 12 The risk of emergency situation with storage of Biomass is not evident.	D 8.4	KRPPL and GDPL project plants are designed with adequate fire fighting system, which would help to mitigate the risk due to fire resulting from storage of biomass.	Issue is considered as resolved. ☑
CAR 13 : Corrective Action Request No. 13: Description regarding collection of ash is missing to avoid air pollution.	F1.1	The required description to avoid air pollution has been included in section F.1 of the revised PDD.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑
CR 1: Clarification Request No. 1: A letter on the modalities of communication needs to be provided.	Table 1, No. 8	Letter on modalities of communication is enclosed as Enclosure 4	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑

CR 2: <u>Clarification Request No. 2:</u> 1) Please provide a graph and/or table with details on the installed boilers and turbo generators (e.g. biomass capacity, steam generation capacity, steam parameters, turbines, electricity generation, operating-stand by) in the pre-project scenario as well as in the project scenario 2) The data of consumption of electricity generated by DG sets to be provided for last three years.	A.2.1.	Pre-project scenario and project scenario have been clearly defined in section A.2 of the revised PDD. Details of project equipments have been further given in section A.4.2 of the PDD.	In fact the updated PDD states clearly what kind of old equipment of baseline scenario in A.2 and the new equipments in A.4.2. However, since the old equipment will stay at the site it is not clear how new and old components are connected to the paper production and against each other. The information of CAR 8 and completed project boundary considering the old equipment is requested. Further information has been provided. Based on those the issue is considered as solved. ☑

CR 3: <u>Clarification Request No. 3:</u> PDD does not have complete technical specification of GDPL of the equipment in the project boundary.	A.4.4	PDD has been updated	In fact the updated PDD states clearly what kind of old equipment of baseline scenario in A.2 and the new equipments in A.4.2. However, since the old equipment will stay at the site it is not clear how new and old components are connected to the paper production and against each other. The information of CAR 8 and completed project boundary considering the old equipment is requested. Provided information: GHG Procedure manual includes line diagram of metering location for monitoring steam and electricity. All standby DGs shall have monitoring meters and only electricity generation in the project turbine shall be used for CER calculations. Provided information is considered as sufficient. Issues are solved. ☑

CR 4: <u>Clarification Request No. 4:</u> Please provide information on these planned procedures of quality control and quality assurance in table D.3. and provide a summary in the monitoring plan in Annex 4 of the PDD	D 7.1	QA and QC procedures are defined in section D.4 of the revised PDD.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑
CR 5: <u>Clarification Request No.5::</u> Please provide the organization chart for GDPL with clear description of authority and responsibility of project management.	D8.1	Description of authority and responsibility of KRPPL and GDPL project management has been clearly defined in section D.5 of the revised PDD.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑
CR 6: <u>Clarification Request No.6:</u> Please provide more detailed information on authority and responsibility for registration, monitoring, measurement and reporting including the role of CDM team, CDM committee, senior CDM team members, senior CDM managers and CDM team members.	D8.2	Please refer section D.5 of the revised PDD for the required information.	The updated PDD considers requested changes clearly. Issue is considered as resolved. ☑

CR 7: Clarification Request No. 7: Please include a process flow scheme (including steam, electricity, biomass) and indicate the location of the metering devices as well as the place of taking the biomass	D 9.4	Please refer section B.4 of the PDD for project flow scheme.	In fact the updated PDD state clearly what kind of old equipment of baseline scenario in A.2 and the new equipments in A.4.2. However, since the old equipment will stay at the site it is not clear how new and old components are connected to the paper production and against each other. The information of CAR 8 and completed project boundary considering the old equipment is requested. Further information has been provided. Based on those the issue is considered as solved. ☑
CR 8: Clarification Request No. 8: The Sources and sinks for baseline emissions are missing.	E 3.2	PDD has been updated.	The updated PDD considers requested sources. Issue is considered as resolved. ☑

<u>Clarification Request 9:</u> a. The updated PDD should specify if mentioned capacities from old and new equipment is related to firing capacity, thermal capacity of electricity, since those units are relevant for the SSC criteria; b. The steam unit of “TPH” is not eligible since steam parameters are not mentioned, ISO units shall be used for the same reason as stated above I point a); c. Since the DGs of both PPs will be stay as backup the validation team considers those components as part of the project boundary. Since above clear information is missing the validation team is not able to prove if applied methodology is applicable regarding the $45MW_{thermal}$ criteria; d. The homepage (from 02-11-2006) of KRPPL states that the co-generation units are already in place. However it is stated differently. The homepage states that has two biomass-fired boilers for steam generation and that the electricity is produced in the DG. That kind of energy production can not be considered as “combined”. Clarification is needed	-	a. It has been clarified by EB that only project equipments should be considered for SSC criteria. b. Steam parameters are included in the PDD. c. DGs should not be included for calculating the output in order to consider the applicability criteria. d. See http://www.krpapers.com/utilities.htm saying: The Company has two Boilers of 8 & 12 MT capacity to meet the steam requirement. The Boiler is based on Rice Husk as a fuel. For making the company self-dependent in power generation, we have three D.G. Sets totalling to 4000 KVA capacity and the one big D.G. of the similar capacity as a	Issue are considered as solved. ☑

		stand-by to take care of uninterrupted power supply	
Clarification Request 10: Chapter E.1.2.4 of updated PDD determine the emission factor for substituted steam from the old coal fired units for using it in the project case. The approach raises following doubts: a. The simple relation tons of coal to tons of produced steam is not eligible, because the produced steam is produced by coal and rise husk. Only steam that comes from the coal can be used for the chosen approach. The given data does not allow retracing. Note: For determining the coal related steam the heat input from each fuel is relevant and not the amount of mass. The validation team is asking for a clear, transparent and evidenced derivation;	-	The quantity of steam produced from per tonne of coal has been calculated based on the past data of calorific value and efficiency. The PDD has been revised and steam parameters are mentioned in the PDD. The process steam requirement shall remain unchanged.	Issue are considered as solved. ☑

b. The use of mass related units for steam seems not to be eligible, because the specific enthalpies of steam and back flow are not clear, in addition they will differ from baseline to project components and operation. So there is a risk of using inconsistent values. Concluding the relation and the later monitoring should base on produced / delivered net heat since this value is really comparable between baseline and project scenario.			
<u>Clarification Request 11:</u> The baseline scenario at KRPPL is that the company is using a boiler fired by rice husk and coal, also evidenced by submitted enclosure 3. It is not clear to the validation team why the most likely baseline scenario would be the continuation of using coal and rice husk in comparison to using only rice husk with CDM. It is not clear, why the baseline scenario using only rice husk with the old equipment is not feasible? A retraceable explanation is needed.	21	The baseline scenario can not be “Use of rice husk alone” because the design specification of the old boilers were such that they can not run on Rice husk fuel alone. Certificate from boiler manufacturer is provided. The proof of financial and technological barrier for GDPL was sent (Letter from Sitson Indai and State bank of Bikaner and Jaipur. Proof of technological barrier for GDPL is attached.	The provided information serves demanded information issue is considered as solved. ☑

Clarification Request 12: According to current submitted information at GDPL used a boiler fired only by rice husk. The boiler manufacturer statement for the new equipment (enclosure 2 GDPL) says that the new boiler runs better with coal and that he gives no guarantee for using rice husks (which is considered as a barrier). On the other hand that opens the option to GDPL for using coal which could cause project emissions maybe even higher than in baseline. The project owner shall explain and fix it in the PDD and monitoring plan how he will ensure that there will be not more project emissions that baseline emissions.	-	The quantity of coal shall be monitored both at GDPL and KRPL, in case of project emissions exceeding baseline emissions i.e a situation of negative emission reductions. Procedure suggested by EB shall be followed. Refer : http://cdm.unfccc.int/EB/021/EB21_para18_Negative_ERs.pdf	The provided information serves demanded information issue is considered as solved. ☑
Corrective Action Request 14: In consequence to CR 9, bullet point d) the diagrams of chapter B.4 in the PDD should be added according to other potential energy producing components.	-	The GHG procedure manual has been prepared for both GDPL and KRPPL facilities which includes line diagram indicating location of all energy and flow meters.	The provided information serves demanded information issue is considered as solved. ☑

Annex 2: Information Reference List

Reference No.	Document or Type of Information
1	On-site interview at the premises of Biomass Based Cogeneration Units at Uttar Pradesh, India, conducted on 12th May (KRPPL) and 14th May (GDPL), 2006 by auditing team of TÜV SÜD and TÜV South Asia. Validation team on site: Mr. Prabhat Kumar TÜV South Asia (TÜV SÜD Group) Interviewed persons: Mr. Shiv Agarwal KR Pulp & Paper Ltd.(KRPP) , Shahjahanpur Mr. Akshay Jain Garg Duplex & Paper P Ltd.(GDPL) , Muzaffarnagar
2	First Project Design Document, submitted March 2006
3	Acknowledgement Licence Under The factory Act 1948, dated 26.11.2005 (KRPP) , 20.07.2001 (GDPL)submitted 16.07.2006
4	Acknowledgement from Ministry of Commerce & Industry dated 31.01.2003 (KRPP) 05.04.2005 (GDPL), submitted 16.07.2006
5	Purchase order for Boilers to M/s Cheema Boilers Ltd by KRPP dated 22.01.2004 ,M/s Sitson India Pvt. Ltd. by GDPL dated 15.02.2004 submitted 16.07.2006
6	Purchase order for RO to M/s Doshi Exchange by GDPL dated 12.04.2005 and to M/s Hyper Filteration Pvt. Ltd. by KRPP dated 19.01.2005 ,submitted 16.07.2006
7	Work order for construction of RCC Chimmney to M/s Ujjawal Construction , by KRPP dated 15.02.2005 , submitted 16.07.2006
8	Purchase order for Design , supply & erection of cooling tower to M/s North Street Cooling Towers by KRPP dated 10.02.2005 , submitted 16.07.2006
9	Purchase order for fabrication and supply of piping system for 2.5 MW TG set to M/s Dee development engineers by KRPP dated

Reference No.	Document or Type of Information
	08.04.2005 , submitted 16.07.2006
10	Purchase order of supply of 2.5 MW extraction condensing STG set to m/s Triveni Engineering by KRPP dated 02.05.2004 , submitted 16.07.2006
11	Boilers inspection report by Boilers Inspection Department, Uttar Pradesh, dated 06.01.2006, submitted 16.07.2006
12	Investment & Loan cut off information’s dated 07.01.2005 by State bank of India, to KRPP submitted 16.07.2006
13	Issue of NOC from Uttar Pradesh Pollution Control Board, dated 07.03.2003 (KRPP) ,,25.04.2006 (GDPL), submitted 16.07.2006
14	Organization Chart of KRPP , submitted by KRPP16.07.2006
15	Detailed project report of submitted by KRPP dated 16.07.2006
16	UNFCCC homepage http://www.unfccc.int
17.	Stakeholders comments , no date submitted 16.07.2006
18.	EIA report of KRPP , by T. N. Chaturvedi , no date submitted 16.07.2006
19.	Order for the Scada base PLC to M/s Aarjay Systems Pvt. Ltd. By KRPP , Dated 01.08.2005 , submitted 16.07.2006
20.	CDM consideration by the top management of GDPL dated 07.07.2006 & KRPP 05.01.2004 , submitted 16.07.2006
21	Letter from Sitson Indai and State bank of Bikaner and Jaipur, Barrier Evidence_KRPL_Technology.pdf
22	Evidence about old boilers and their condition; CR-11_Boiler certificate .pdf
23	GARG DUPLEX & PAPERS PRIVATE LIMITED, GHG PERFORMANCE PROCEDURE, Version 01

Reference No.	Document or Type of Information
24	KR PULP & PAPERS LIMITED, GHG PERFORMANCE PROCEDURE, Version 01
25	Project Design Document, version 03 dated 02/01/2007
26	Project Design Document, version 04 dated 02/05/2007