



Industrie Service

Validation Report

LH Sugar Factories Ltd.

Validation of the “LHSF Bagasse Project”

Report No. 739242, Revision 02

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TÜV Industrie Service GmbH TÜV SÜD Group
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Contract approved by:		Michael Rumberg		
Report Title:		Validation of the “LHSF Bagasse Project”		
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Summary: The Certification Body ”Climate and Energy” has been ordered by LH Sugar Factories Ltd. to perform a validation of the above mentioned project. Using a risk based approach, the validation of this project has been performed by document reviews and on-site inspection, audits at the locations of the project and interviews at the offices of the project developer and the project owner. As the result of this procedure, it can be confirmed that the submitted project documentation is in line with all requirements set by the Kyoto Protocol, the Marrakech Accords and relevant guidance 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 reduction of 185 060 tonnes CO _{2e} over a crediting period of ten years, resulting in a calculated annual average of 18 506 tonnes CO _{2e} , represents a reasonable estimation using the assumptions given by the project documents.				
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Abbreviations

AE	Applicant Operational Entity
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CR	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission reduction
GHG	Greenhouse gas(es)
KP	Kyoto Protocol
MP	Monitoring Plan
PDD	Project Design Document
TÜV SÜD	TÜV Industrie Service GmbH TÜV SÜD Group
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual



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1 INTRODUCTION

1.1 Objective

LH Sugar Factories Ltd. (LHSF) has commissioned TÜV Industrie Service GmbH TÜV SÜD Group (TÜV SÜD) to validate the LHSF Bagasse Project. The validation serves as a design verification and is a requirement of all CDM projects. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is 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 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.

The audit team has been provided with a draft PDD in September 2005. Based on this documentation a document review and a fact finding mission in form of an on site audit has taken place. Afterwards the client decided to revise the PDD according to the CARs and CRs indicated in the audit process. The final PDD version submitted in October 2005 serves as the basis for the assessment presented herewith. In response to the issue of baseline determination a revised final PDD has been submitted in March 2006.

Studying the existing documentation belonging to this project, 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 biomass plants
- Monitoring concepts
- Political, economical and technical random conditions in host country



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

Michael Rumberg is head of the division CDM/JI at TÜV Industrie Service GmbH TÜV SÜD Group. In his position he is responsible for the implementation of validation, verification and certifications processes for greenhouse gas mitigation projects in the context of the Kyoto Protocol. Before entering this company he worked as an expert for renewable energy, forestry, environmental issues, climate change and sustainability within the environmental branch of an insurance company. His competences are covering risk assessments, quality and environmental auditing (EMS auditor), baseline setting, monitoring and verification due to the requirements of the Kyoto Protocol.

Sunil Kathuria is a lead auditor for quality and environmental management systems (according to ISO 9001 and ISO 14001) and an auditor for CDM/ JI projects at TÜV Süddeutschland India Pvt. Ltd. He is based in New Delhi. In his position he is implementing validation, verification and certifications audits for management systems. He has received extensive training in the CDM validation process and participated already in several CDM project (pre-)assessments.

The audit team covers the above mentioned requirements as follows:

- Knowledge of Kyoto Protocol and the Marrakech Accords (ALL)
- Environmental and Social Impact Assessment (ALL)
- Skills in environmental auditing (ALL)
- Quality assurance (ALL)
- Technical aspects of biomass plants and grid operation (ALL)
- Monitoring concepts (ALL)
- Political, economical and technical random conditions in host country (KATHURIA)

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 “climate and energy”)

1.3 GHG Project Description

The project involves the installation of a high pressure turbines and boiler. The purpose is to provide 6.2 MW of electrical power to the Uttar Pradesh State Grid.

Project participants are:

- LH Sugar Factories Ltd., India
- Agrinergy Ltd., UK

The project starting date is June 9, 2004. The 10 year non renewable crediting period starts December 30, 2005.

2 METHODOLOGY

The project assessment aims at being a risk based approach and is based on the methodology developed in the Validation and Verification Manual (for further information see www.vvmanual.info), an initiative of all Applicant Entities, which aims to harmonize the approach and quality of all such assessments.

In order to ensure transparency, a validation protocol was customised 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 organises, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

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

The completed validation protocol 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 sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification 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 summarised in this section.	This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

Figure 1 Validation Protocol Tables



2.1 Review of Documents

The project design document submitted by the client and additional background documents related to the project design and baseline were reviewed. A complete list of all documents reviewed is attached as annex 2 to this report. The project design document underwent several revisions addressing clarification requests issued by TÜV SÜD. The audit team has been provided with a draft PDD in September 2005. The revised final PDD version submitted in March 2006 serves as the basis for the assessment presented herewith.

2.2 Follow-up Interviews

On September 3, 2005, TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of LHSF were interviewed. The main topics of the interviews are summarised in Table 1.

Table 1 Interview topics

Interviewed organisation	Interview topics
LHSF	<ul style="list-style-type: none"> ➤ Project design ➤ Technical equipment ➤ Sustainable development issues ➤ Baseline determination ➤ Additionality ➤ Crediting period ➤ Monitoring plan ➤ Management system ➤ Environmental impacts ➤ Stakeholder process ➤ Approval by the host country

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 and Clarification Requests 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 given are summarised in chapter 3 below and documented in more detail in the validation protocol in annex 1.

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 summarised. 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 the fulfilment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in annex 1. The validation of the project resulted in five Corrective Action Requests and three 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 summarised.
- 4) The 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 Project Design

3.1.1 Discussion

The participating Parties, India and UK meet all relevant participation requirements. The project has received a Letter of Approval from the Indian and the UK government.

The objective of the project is to reduce GHG emissions by installing a power plant with fuel supply by renewable sources.

The project itself does qualify as a Small Scale Project as it fulfils the requirements defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM by being a project in the category i) “renewable energy project activities with a maximum output capacity equivalent to up to 15 megawatts”. The project activity itself is not a debundled component of a larger project activity according to the rules for “determining the occurrence of debundling” as they are outlined in Appendix C of the Simplified Modalities and Procedures for Small-Scale CDM project activities. Currently there is no other small scale project activity already registered or in the process of applying for registration - done by the same project participant within one kilometre distance.

The selected baseline methodology is in line with the baseline methodologies provided for the relevant project category.

All components and facilities used to mitigate GHG's are covered. Information regarding the capacity of the installation is supported by corresponding documentation. But as the methodology applied asks to include the physical, geographical site of the renewable generation source and the same is highly interconnected with the existing systems, a clear picture should be given for the situation in the past and in the envisaged future. The project design engineering does reflect current good practices. During feasibility studies carried out in advance to the



project implementation, consulting and engineering companies confirmed the appropriateness of the employed technology. The project is hence professionally managed and the applied technology represents state of the art technique. 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 does not lead to a technology transfer to the host country as the project makes use of an existing technology.

The initial training requirements are not significant since the unit is generating power for the captive use already. According to information obtained by the validator on site, the training shall be required for grid synchronisation persons and it shall be met by recruiting trained staff.

As India has the objective to make use of renewable energy sources and operates on own ministry, the Ministry for Non Conventional Energy Sources (MNES), the project is in line with sustainable development policies of the country. Moreover the Government of India assesses this question before approving the project. As a Letter of Approval has been issued for this specific project, the project must be seen as being in line with sustainable development policies of the country.

The project is expected to have positive effects on the employment situation. 20 persons of the plant and 100 persons belonging to EPC Contractors have got employments in the plant erection and 75% of the employed engaged in the erection and commissioning are from the local area.

The project has applied for different permissions and licences for erection and operation of the plant. The relevant documentation is described in the PDD and all relevant corresponding documents have been verified. Moreover it has been assessed the necessity for a separate environmental clearance for this project. This is not required. The relevant state departments have been informed.

The funding for the project does not lead to a diversion of official development assistance as according to the information obtained by the audit team ODA does not contribute to the financing of the project.

The starting date is clearly defined. The crediting period is with 10 years clearly defined.

3.1.2 Findings

Corrective Action Request No. 1

The project neither received a Letter of Approval from the Indian government nor from the government of the United Kingdom. To be submitted to the audit team prior to registration

Response:

The project has received a Letter of Approval from the government of India and the United Kingdom. Both documents have been submitted to the audit team.

Corrective Action Request No. 2

The project design document does not conform with the Small Scale CDM Project Design Document format (version 02, from July 8, 2005) valid by the time of PDD submission. The PDD should use the most recent version available.

Response:

A revised PDD version has been submitted.

Corrective Action Request No. 3:

The project comprises the existing installation of 5.5 MW as well as the new installation of 12 MW resulting in a total power production based on 17.5 MW. This exceeds the level for small scale projects.

Response:

The project activity is the installation of the 12 MW TG and a grid connection. Whilst the project boundary may include other existing turbines, the specific CDM project activity in the new 12 MW TG only. The existing power supply at the factory is sufficient to meet only internal demand. Electricity exports will occur directly and solely from the new 12 MW turbine and this is therefore a distinct project activity.

This conclusion is confirmed by the fact that a similar small scale project has been registered (SRS Bagasse Cogeneration Project). Validation of this project was used successfully as a witnessing activity for a DOE.

Due to the fact that a similar small scale project has been registered (SRS Bagasse Cogeneration Project) and validation of this project was used successfully as a witnessing activity for a DOE, the audit team concludes that only new equipment needs to be taken into account when defining the installed capacity.

3.1.3 Conclusion

The project does comply with the requirements.

3.2 Baseline and Additionality

3.2.1 Discussion

The application of the baseline methodology is transparent but inconsistent. No activity level is properly envisaged.

The PDD describes that the project is not a likely baseline scenario according to various barriers faced by the project. The investment barrier described indicates that the project is additional.

The CDM revenue was considered in the project from the very beginning. The respective agreements have been verified during the assessment process.

Relevant national policies have been taken into account as the energy policy of the Government of India. The project is in line with Non Conventional Energy Policies.

3.2.2 Findings

Corrective Action Request No. 4:

The PDD refers to the regional grid but the baseline emission factor data contains several inconsistencies such as:

- Suratgrah plant: The total generation is higher in the build margin than in the operating margin although the same time is covered.

- Pragati and Ramgarh GT plants: The total generation of the build margin is different from the operating margin.
- Nathpa Jhakri: How can the generation of all parts of the hydro installation be the same although the commissioning date has been earlier or later in the covered period 2004-2005.

Hence the data and information should be revised. In addition all parameters used should clearly and directly refer to a source. This applies to the following parameters:

- Fuel consumption
- Emission
- Generation
- Capacity addition
- Commissioning date

Response:

All data has been revised and added in the revised final PDD version. In addition the EB has decided in its 23rd meeting that IPCC data might be used for NCV determination.

Corrective Action Request No. 5:

The activity level, described in chapter E.2 of the PDD, should reflect all years of the crediting period and give a justified envisaged level and not offer various options of power production to the reader.

Response:

The table has been updated to reflect each year of operation. The given activity level is considered to be plausible.

Clarification Request No. 1:

The PDD describes that the project is not a likely baseline scenario according to various barriers faced by the project.

Generally the audit team confirms the perception that that the project is not a likely baseline scenario. There are very few sugar companies which are going for co-generation at high pressures and also exporting power to the grid because sugar companies prefer to sell bagasse as this is risk free and does not require high capital costs for cogeneration process implementation.

But the following further information needs to be submitted:

- Sources for the figures given in the calculation
- Statement on attractive benchmark for power projects (internal or external)
- Date of investment decision and consideration of CDM by that time.

Response:

The sources for figures in the calculation of the project financials are: market prices for bagasse which are justified through sales receipts, expected prices for carbon credits and the personnel costs are detailed on additional spreadsheets. The data on the activities of Bajaj are taken from a presentation to analysts.

An attractive benchmark for the project has been determined from the weighted average cost of capital. This data is available for other listed companies (LHSF is not listed) and is calculated for EID Parry, a large sugar company in India, at 15.7% (Reference:- “Value Enhancement, Back to Basics” Aswath Damodaram, www.damodaram.com, p 14.). The benchmark indicated exceeds



the IRR given by the project even considering the CER revenue. This indicates that even with the CDM the project is not financially attractive. But as the benchmark provided is an indication of the returns sought on such projects rather than an absolute level, the argumentations is considered to be plausible. EID Parry is a sugar company and thus provides a suitable comparison but given that it is a listed company the returns to shareholders would be expected to be higher than LHSF.

The way the CDM has been considered already from August 2003 has been explained and documented. A statement referring to the various participants of these meetings has been submitted to the audit team.

3.2.3 Conclusion

The project does comply with the requirements.

3.3 Monitoring Plan

3.3.1 Discussion

The selected monitoring methodology is in line with the monitoring methodologies provided for the relevant project category as the Simplified Modalities and Procedures for Small-Scale CDM project activities ask for the metering of the electricity generated by the renewable technology.

The application of the monitoring methodology is transparent.

No indicators have been defined regarding project emissions and leakage emissions to be monitored according to the monitoring plan as there are no emissions to be expected in the regular operation of the plant.

The responsibility of the project management is clear but no written description of project management has been provided to the audit team.

No initial extensive training is required as the projects technology is well established.

3.3.2 Findings

Clarification Request No. 2:

A monitoring of the baseline emissions is only partly necessary as the emission factor is determined ex ante and will not be monitored. The only indicator to be monitored is the electricity produced by the turbine and fed to the grid. Hence, the monitoring plan includes measurement of units fed to the grid and this will be measured. It should be explained to the audit team how it can be assured that only electricity produced in the new equipment and fed to the grid will be measured. Moreover it should be demonstrated where the meter is located and how the overall metering system at the plant allows to deviate the single flows.

Response:

The new turbine generator will generate electricity at 11kV. This will be stepped up at the plant to 132kV and then sent to the grid. The existing turbines only generate electricity at 440V and therefore it is not possible for them to supply electricity to the grid via the step up transformer.

There are two meters – one located at the plant and one at the substation. The substation is the primary meter from which monthly recordings will be taken and will thus form the basis of payments to the power plant. The meter on site will act as a check meter.

Clarification Request No. 3:

QA procedure for monitoring, measurement and reporting defining the responsibility authority, monitoring frequency, data retrieval, data safety and other issues covered in chapter D.5 should be presented to audit team.

Response:

A document outlining the roles and responsibilities of personnel involved in the monitoring, measurement and reporting of the data has been prepared and a summary of which is included in section D5 of the PDD.

3.3.3 Conclusion

The project does comply with the requirements.

3.4 Calculation of GHG Emissions

3.4.1 Discussion

The PDD does clearly define the project's spatial boundaries. The PDD does also correctly define the project's system boundaries. Thus, all components and facilities used to mitigate GHG's are covered.

Leakage calculations are according to the Simplified Modalities and Procedures for Small-Scale CDM project activities requested in case the renewable energy technology is equipment transferred from another activity. This is not the case in the assessed project. Hence no leakage emissions are calculated.

Concluding it can be stated that all aspects related to direct and indirect baseline emissions are captured in the project design.

The calculations of the baseline emission are not documented in a complete and transparent manner as described in the chapter 3.2.2 above.

3.4.2 Findings

None

3.4.3 Conclusion

The project does comply with the requirements.



3.5 Environmental Impacts

3.5.1 Discussion

An analysis of the environmental impacts of the project activity is not required according to Indian legislation. The project does comply with environmental legislation.

The project has applied for different permissions and licences for erection and operation of the plant. The relevant documentation is described in the PDD and all relevant corresponding documents have been verified. Moreover it has been assessed the necessity for a separate environmental clearance for this project. This is not required. The relevant state departments have been informed.

Environmental effects are addressed in the PDD. It is not expected that the project will cause negative environmental effects.

3.5.2 Findings

None

3.5.3 Conclusion

The project does comply with the requirements.

3.6 Comments by Local Stakeholders

3.6.1 Discussion

There were insertions in the news papers informing about the project activity. In addition the local village leader was sent a letter. Moreover a press conference was arranged in the plant and the same was covered in "Danik Jagran " in Local Hindi Language. Hereby the project design and technical details was communicated to the general public.

Positive or neutral comments have been received so far.

3.6.2 Findings

None

3.6.3 Conclusion

The project does comply with the requirements.



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4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

A global public stakeholder process on the UNFCCC website has taken place from October 15, 2005 for 30 days. Until the end of the stakeholder process, November 13, 2005, no comments have been received.



5 VALIDATION OPINION

TÜV SÜD has performed a validation of the “LHSF Bagasse Project” project in India. The validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and subsequent decisions by the CDM Executive Board.

The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project does meet all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project will hence be recommended by TÜV SÜD for registration with the UNFCCC under the CDM.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the barriers due to investment restrictions demonstrates so far that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reduction of 185 060 tonnes CO_{2e} over a crediting period of ten years, resulting in a calculated annual average of 18 506 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, 2006-03-17

A handwritten signature in black ink, consisting of a large, stylized 'W' and 'B' intertwined.

Werner Betzenbichler
**Head of certification body “climate
and energy”**

Munich, 2005-03-17

A handwritten signature in black ink, consisting of a stylized 'M' and 'R' followed by a horizontal line.

Michael Rumberg
Project Manager

Annex 1: Validation Protocol

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

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art. 12.2	☑	Table 2, Section E.4.1
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	☑	Table 2, Section A.3
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art. 12.2.	☑	Table 2, Section E.4.1
4. The project shall have written approval of voluntary participation from the designated national authorities of each party involved	Kyoto Protocol Art. 12.5a, Simplified Modalities and Procedures for Small Scale CDM Project Activities §23a	<p>CAR 1</p> <p>☑</p>	<p>The project neither received a Letter of Approval from the Indian government nor from the government of the United Kingdom.</p> <p><u>Corrective Action Request No. 1</u></p> <p>To be submitted to the audit team prior to registration</p>
5. The emission reductions should be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	☑	Table 2, Section E.1 to E.4



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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
6. Reduction in GHG emissions must be additional to any that would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Kyoto Protocol Art. 12.5.c, Simplified Modalities and Procedures for Small Scale CDM Project Activities §26	<input checked="" type="checkbox"/>	Table 2, Section B.2.1
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance	Marrakech Accords (Decision 17/CP.7)	<input checked="" type="checkbox"/>	The funding for the project does not lead to a diversion of official development assistance as according to the information obtained by the audit team ODA does not contribute to the financing of the project.
8. Parties participating in the CDM shall designate a national authority for the CDM	Marrakesh Accords (CDM modalities§ 29)	<input checked="" type="checkbox"/>	India and the UK have established a designated national authority.
9. The host country shall be a Party to the Kyoto Protocol	Marrakesh Accords (CDM modalities§ 30)	<input checked="" type="checkbox"/>	India is a Party to the Kyoto Protocol and has accessed the Protocol at 26 Aug 2002.
10. The proposed project activity shall meet the eligibility criteria for small scale CDM project activities set out in § 6 (c) of the Marrakesh Accords and shall not be a debundled component of a larger project activity	Simplified Modalities and Procedures for Small Scale CDM Project Activities §12a,c	<input checked="" type="checkbox"/>	Table 2, Section A.1



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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
11. The project design document shall conform with the Small Scale CDM Project Design Document format	Simplified Modalities and Procedures for Small Scale CDM Project Activities, Appendix A	CAR 2 <input checked="" type="checkbox"/>	The project design document does not conform with the Small Scale CDM Project Design Document format (version 02, from July 8, 2005) valid by the time of PDD submission. <u>Corrective Action Request No. 2</u> The PDD should use the most recent version available.
12. The proposed project activity shall confirm to one of the project categories defined for small scale CDM project activities and uses the simplified baseline and monitoring methodology for that project category	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22e	<input checked="" type="checkbox"/>	Table 2, Section A.1.3 and B.1
13. Comments by local stakeholders are invited, and a summary of these provided	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22b	<input checked="" type="checkbox"/>	Table 2, Section G
14. If required by the host country, an analysis of the environmental impacts of the project activity is carried out and documented	Simplified Modalities and Procedures for Small Scale CDM Project Activities §22c	<input checked="" type="checkbox"/>	Table 2, Section F
15. Parties, stakeholders and UNFCCC accredited NGOs have been invited to comment on the validation requirements and comments have been made publicly available	Simplified Modalities and Procedures for Small Scale CDM Project Activities §23b,c,d	<input checked="" type="checkbox"/>	A global public stakeholder process on the UNFCCC website has taken place from October 15, 2005 for 30 days. Until the end of the stakeholder process, November 13, 2005, no



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REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
			comments have been received.

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A. Project Description The project design is assessed.					
A.1. Small scale project activity It is assess whether the project qualifies as small scale CDM project activity.					
A.1.1. Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	1, 2, 18, 19, 22	DR, I	The project itself does not qualify as a Small Scale Project as it fulfils not the requirements defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM by being a project in the category Type-1 i) “renewable energy project activities with a maximum output capacity equivalent to up to 15 megawatts. <u>Corrective Action Request No. 3:</u> The project comprises the existing installation of 5.5 MW as well as the new installation of 12 MW resulting in a total power production based on 17.5 MW. This exceeds the level for small scale projects.	CAR 3	<input checked="" type="checkbox"/>
A.1.2. The small scale project activity is not a debundled component of a larger project activity?	1, 2, 18, 19, 22	DR, I	The project activity is not a debundled component of a larger project activity according to the rules for “determining the occurrence of debundling” as they are outlined in Appendix C of the Simplified Modalities and Procedures for Small-Scale CDM project activities.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			Currently there is no other small scale project activity already registered or in the process of applying for registration - done by the same project participant and less than 1km far from this project activity.		
A.1.3. Does proposed project activity confirm to one of the project categories defined for small scale CDM project activities?	1, 2, 18, 19, 22	DR, I	See A.1.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2. Project Design Validation of project design focuses on the choice of technology and the design documentation of the project.					
A.2.1. Are the project's spatial (geographical) boundaries clearly defined?	1, 2, 18, 19, 22	DR, I	Yes, the PDD does clearly define the project's spatial boundaries.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.2. Are the project's system (components and facilities used to mitigate GHG's) boundaries clearly defined?	1, 2, 18, 19, 22	DR, I	Yes, the PDD does define the project's system boundaries by description of the project components. All components and facilities used to mitigate GHG's are covered. Information regarding the capacity of the installation is supported by corresponding documentation. But as the methodology applied asks to include the physical, geographical site of the renewable generation source and the same is highly interconnected with the existing systems, a clear picture should be	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			given for the situation in the past and in the envisaged future. See CR 1 in A.1.1		
A.2.3. Does the project design engineering reflect current good practices?	1, 2, 18, 19, 22	DR, I	Yes, the project design engineering does reflect current good practices. During feasibility studies carried out in advance to the project implementation, consulting and engineering companies confirmed the appropriateness of the employed technology. The project is hence professionally managed and the applied technology represents state of the art technique.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.4. Will the project result in technology transfer to the host country?	1, 2, 18, 19, 22	DR, I	No, the project does not lead to a technology transfer to the host country as the project makes use of an existing domestic technology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.5. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period? Does the project make provisions for meeting training and maintenance needs?	1, 2, 18, 19, 22	DR, I	The initial training requirements are not significant since the unit is generating power for the captive use already. According to information obtained by the validator on site, the training shall be required for grid synchronisation persons and it shall be met by recruiting trained staff.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3. Contribution to Sustainable Development The project's contribution to sustainable development is assessed					
A.3.1. Will the project create other environmental or social benefits than GHG emission reductions?	1, 2, 18, 19, 22	DR, I	The project is expected to have positive effects on the employment situation. 20 persons of the plant and 100 persons belonging to EPC Contractors have got employments in the plant erection and	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			75% of the employed engaged in the erection and commissioning are from the local area.		
A.3.2. Will the project create any adverse environmental or social effects?	1, 2, 18, 19, 22	DR, I	The project is expected to create no adverse environmental or socio-economic effects.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3.3. Is the project in line with sustainable development policies of the host country?	1, 2, 18, 19, 22	DR, I	As India has the objective to make use of renewable energy sources and operates on own ministry, the Ministry for Non Conventional Energy Sources (MNES), the project is in line with sustainable development policies of the country. In the Letter of Approval the Government of India will confirm that the project contributes to sustainable development in the country.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.3.4. Is the project in line with relevant legislation and plans in the host country?	1, 2, 4, 18, 19, 22	DR, I	The project has applied for different permissions and licences for erection and operation of the plant. The relevant documentation is described in the PDD and all relevant corresponding documents have been verified. Moreover it has been assessed the necessity for a separate environmental clearance for this project. This is not required. The relevant state departments have been informed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B. Project Baseline The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.					
B.1. Baseline Methodology It is assessed whether the project applies an appropriate baseline methodology.					
B.1.1. Is the selected baseline methodology in line with the baseline methodologies provided for the relevant project category?	1, 2, 18, 19, 22	DR, I	See A.1.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.1.2. Is the baseline methodology applicable to the project being considered?	1, 2, 18, 19, 22	DR, I	See A.1.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2. Baseline Determination It is assessed whether the project activity itself is not a likely baseline scenario and whether the selected baseline represents a likely baseline scenario.					
B.2.1. Is it demonstrated that the project activity itself is not a likely baseline scenario due to the existence of one or more of the following barriers: investment barriers,	1, 2, 5, 6, 15, 18,	DR, I	The PDD describes that the project is not a likely baseline scenario according to various barriers faced by the project. Generally the audit team confirms the perception	CR 1	

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
technology barriers, barriers due to prevailing practice or other barriers?	19, 22		<p>that that the project is not a likely baseline scenario. There are very few sugar companies which are going for co-generation at high pressures and also exporting power to the grid because sugar companies prefer to sell bagasse as this is risk free and does not require high capital costs for cogeneration process implementation.</p> <p><u>Clarification Request No. 1:</u> But the following further information needs to be submitted:</p> <ul style="list-style-type: none"> • Sources for the figures given in the calculation • Statement on attractive benchmark for power projects (internal or external) • Date of investment decision and consideration of CDM by that time (see C.1.3). 		
B.2.2. Is the application of the baseline methodology and the discussion and determination of the chosen baseline transparent and conservative?	1, 2, 18, 19, 22	DR, I	<p>The application of the baseline methodology is transparent but inconsistent. No activity level is properly envisaged.</p> <p><u>Corrective Action Request No. 4:</u> The PDD refers to the regional grid but the baseline emission factor data contains several inconsistencies such as:</p> <ul style="list-style-type: none"> • Suratgrah plant: The total generation is 	<p>CAR 4</p> <p>And</p> <p>CAR 5</p>	<p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p>higher in the build margin than in the operating margin although the same time is covered. How can this be? Please clarify.</p> <ul style="list-style-type: none"> Pragati and Ramgarh GT plants: The total generation of the build margin is different from the operating margin. How can this be? Please clarify. Nathpa Jhakri: How can the generation of all parts of the hydro installation be the same although the comissioning date has been earlier or later in the covered period 2004-2005. <p>Hence the data and information should be revised. In addition all parameters used should clearly and directly refer to a source. This applies to the following parameters:</p> <ul style="list-style-type: none"> Fuel consumption Emission Generation Capacity addition Commissioning date <p><u>Corrective Action Request No. 5:</u> The activity level, described in chapter E.2 of the PDD, should reflect all years of the crediting period</p>		

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			and give a justified envisaged level and not offer various options of power production to the reader.		
B.2.3. Are relevant national and/or sectoral policies and circumstances taken into account?	1, 2, 18, 19, 22	DR, I	Yes, relevant sectoral policies have been taken into account.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.4. Is the baseline selection compatible with the available data?	1, 2, 18, 19, 22	DR, I	The baseline is based on approaches from the methodology the PDD refers to and hence considered being from a reliable source.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.5. Does the selected baseline represent the most likely scenario describing what would have occurred in absence of the project activity?	1, 2, 18, 19, 22	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C. Duration of the Project / Crediting Period It is assessed whether the temporary boundaries of the project are clearly defined.					
C.1.1. Are the project's starting date and operational lifetime clearly defined?	1, 2, 18, 19, 22	DR, I	The start date of project activity is defined The operational lifetime is clearly defined as being 20 years.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C.1.2. Is the crediting period clearly defined (seven years with two possible renewals or 10 years with no renewal)?	1, 2, 18, 19, 22	DR, I	The start of the crediting period is clearly defined. The crediting period has been fixed as being 10 years starting from 15.11.2005	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
C.1.3. Is it assured that in case the start of the crediting period is before the registration of the project that the project activities starting date falls in the period between 1 January 2000 and the registration of the first clean development mechanism project?	1, 2, 17, 18, 19, 22	DR, I	During the validation process the audit team obtained the information and evidenced that the start of project activities has been before the registration date of the first clean development mechanism project. The way considering CDM revenues in the project planning stage has still to be explained. See B.2.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D. Monitoring Plan The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed.					
D.1. Monitoring Methodology It is assessed whether the project applies an appropriate monitoring methodology.					
D.1.1. Is the selected monitoring methodology in line with the monitoring methodologies provided for the relevant project category?	1, 2, 18, 19, 22	DR, I	Yes, the selected monitoring methodology is in line with the monitoring methodologies provided for the relevant project category.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.2. Is the monitoring methodology applicable to the project being considered?	1, 2, 18, 19, 22	DR, I	Yes, the monitoring methodology is applicable to the project being considered.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.1.3. Is the application of the monitoring methodology transparent?	1, 2, 18, 19, 22	DR, I	Yes, the application of the monitoring methodology is transparent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.1.4. Will the monitoring methodology give opportunity for real measurements of achieved emission reductions?	1, 2, 18, 19, 22	DR, I	Yes, the monitoring methodology gives opportunity for real measurements of achieved emission reductions.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2. Monitoring of Project Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.2.1. Are the choices of project emission indicators reasonable?	1, 2, 18, 19, 22	DR, I	No project emissions are evident in the project as the plant is being a biomass plant and the fuel combustion is considered to take place emission free.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.2. Will it be possible to monitor / measure the specified project emission indicators?	1, 2, 18, 19, 22	DR, I	See above in D.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.3. Do the measuring technique and frequency comply with good monitoring practices?	1, 2, 18, 19, 22	DR, I	See above in D.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.4. Are the provisions made for archiving project emission data sufficient to enable later verification?	1, 2, 18, 19, 22	DR, I	See above in D.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.3. Monitoring of Leakage It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.					
D.3.1. If applicable, are the choices of leakage indicators reasonable?	1, 2, 18, 19, 22	DR, I	No leakage is evident in the project according to the methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.2. If applicable, will it be possible to monitor / measure the specified leakage indicators?	1, 2, 18, 19, 22	DR, I	See above in D 3.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.3. If applicable, do the measuring technique and frequency comply with good monitoring practices?	1, 2, 18, 19, 22	DR, I	See above in D 3.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.3.4. If applicable, are the provisions made for archiving leakage data sufficient to enable later verification?	1, 2, 18, 19, 22	DR, I	See above in D 3.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4. Monitoring of Baseline Emissions It is established whether the monitoring plan provides for reliable and complete project emission data over time.					
D.4.1. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	1, 2, 18, 19,	DR, I	A monitoring of the baseline emissions is only partly necessary as the emission factor is determined ex ante and will not be monitored. The	CR 2	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	22		<p>only indicator to be monitored is the electricity produced by the turbine and fed to the grid. Hence, the monitoring plan includes measurement of units fed to the grid and this will be measured.</p> <p><u>Clarification Request No. 2:</u> It should be explained to the audit team how it can be assured that only electricity produced in the new equipment and fed to the grid will be measured. Moreover it should be demonstrated where the meter is located and how the overall metering system at the plant allows to deviate the single flows.</p>		
D.4.2. Will it be possible to monitor / measure the specified baseline emission indicators?	1, 2, 18, 19, 22	DR, I	Yes as the electricity produced is a key parameter for daily operations it will be possible to monitor this indicator but see D.4.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4.3. Do the measuring technique and frequency comply with good monitoring practices?	1, 2, 18, 19, 22	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4.4. Are the provisions made for archiving baseline emission data sufficient to enable later verification?	1, 2, 18, 19, 22	DR, I	Yes respective provisions have been submitted to the audit team.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.5. Project Management Planning It is checked that project implementation is properly prepared for and that critical arrangements are addressed.					
D.5.1. Is the authority and responsibility of project management clearly described?	1, 2, 10, 11, 18, 19, 22, 23	DR, I	<u>Clarification Request No. 3:</u> QA procedure for monitoring, measurement and reporting defining the responsibility authority, monitoring frequency, data retrieval, data safety and other issues covered in chapter D.5 should be presented to audit team.	CR 3	<input checked="" type="checkbox"/>
D.5.2. Is the authority and responsibility for registration monitoring measurement and reporting clearly described?	1, 2, 10, 11, 18, 19, 22, 23	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.3. Are procedures identified for training of monitoring personnel?	1, 2, 10, 11, 18, 19, 22	DR, I	No special training is required.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	1, 2, 10, 11, 18,	DR, I	No emergency situation with unintended emission has to be expected.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	19, 22, 23				
D.5.5. Are procedures identified for calibration of monitoring equipment?	1, 2, 10, 11, 18, 19, 22	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.6. Are procedures identified for maintenance of monitoring equipment and installations?	1, 2, 10, 11, 18, 19, 23	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.7. Are procedures identified for monitoring, measurements and reporting?	1, 2, 10, 11, 18, 19, 22, 23	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	1, 2, 10, 11, 18, 19, 22, 23	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.5.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	1, 2, 10, 11, 18, 19, 22, 23	DR, I	See D.5.1 The data obtained from the electricity meter will be checked for plausibility with the data obtained from the meters directly on site. Uncertainties are expected to be within the allowed deviation of the metering equipment.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.10. Are procedures identified for internal audits of GHG project compliance with operational requirements as applicable?	1, 2, 10, 11, 18, 19, 22, 23	DR, I	See D.5.1 No, there are no procedures for internal audits. As the project performance can be easily obtained from the amount of electricity produced, the compliance can be checked regularly without further audits.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.11. Are procedures identified for project performance reviews?	1, 2, 10, 11, 18, 19, 22, 23	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.12. Are procedures identified for corrective actions?	1, 2, 10, 11, 18, 19, 22, 23	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E. Calculation of GHG emission It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.					
E.1. Project GHG Emissions The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.					
E.1.1. Are all aspects related to direct and indirect project emissions captured in the project design?	1, 2, 18, 19, 22	DR, I	Project emissions are not to be expected from the newly installed turbine.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.2. Have all relevant greenhouse gases and sources been evaluated?	1, 2, 18, 19, 22	DR, I	See above E.1.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.3. Do the methodologies for calculating project emissions comply with existing good practice?	1, 2, 18, 19, 22	DR, I	See above E.1.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.4. Are the calculations documented in a complete and transparent manner?	1, 2, 18, 19	DR, I	See above E.1.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E.1.5. Have conservative assumptions been used?	1, 2, 18, 19, 22	DR, I	See above E.1.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.6. Are uncertainties in the project emissions estimates properly addressed?	1, 2, 18, 19, 22	DR, I	See above E.1.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2. Leakage It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed.					
E.2.1. Are leakage calculation required for the selected project category and if yes, are the relevant leakage effects assessed?	1, 2, 18, 19, 22	DR, I	Leakage calculations are according to the Simplified Modalities and Procedures for Small-Scale CDM project activities requested in case the renewable energy technology is equipment transferred from another activity. This is not the case in the assessed project. Hence no leakage emissions are calculated.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.2. Are potential leakage effects properly accounted for in the calculations (if applicable)?	1, 2, 18, 19, 22	DR, I	See above in E.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.3. Do the methodologies for calculating leakage comply with existing good practice	1, 2, 18, 19,	DR, I	See above in E.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
(if applicable)?	22				
E.2.4. Are the calculations documented in a complete and transparent manner and (if applicable)?	1, 2, 18, 19, 22	DR, I	See above in E.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.5. Have conservative assumptions been used (if applicable)?	1, 2, 18, 19, 22	DR, I	See above in E.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.6. Are uncertainties in the leakage estimates properly addressed (if applicable)?	1, 2, 18, 19, 22	DR, I	See above in E.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3. Baseline GHG Emissions The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.					
E.3.1. Are the baseline emission boundaries clearly defined and do they sufficiently cover sources for baseline emissions?	1, 2, 18, 19, 22	DR, I	See A.1.1 and B.2.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.2. Are all aspects related to direct and indirect baseline emissions captured in the project design?	1, 2, 18, 19, 22	DR, I	Yes, all aspects related to direct and indirect baseline emissions are captured in the project design.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E.3.3. Have all relevant greenhouse gases and sources been evaluated?	1, 2, 18, 19, 22	DR, I	Yes	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.4. Do the methodologies for calculating baseline emissions comply with existing good practice?	1, 2, 18, 19, 22	DR, I	See A.1.1 and B.2.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.5. Are the calculations documented in a complete and transparent manner?	1, 2, 18, 19, 22	DR, I	See A.1.1 and B.2.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.6. Have conservative assumptions been used?	1, 2, 18, 19, 22	DR, I	See A.1.1 and B.2.2	CR 2	<input checked="" type="checkbox"/>
E.3.7. Are uncertainties in the baseline emissions estimates properly addressed?	1, 2, 18, 19, 22	DR, I	See A.1.1 and B.2.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.4. Emission Reductions Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.					
E.4.1. Will the project result in fewer GHG emissions than the baseline case?	1, 2, 18, 19, 22	DR, I	Yes in case the open issued mentioned above are resolved in advance.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
F. Environmental Impacts It is assessed whether environmental impacts of the project are sufficiently addressed.					
F.1.1. Does host country legislation require an analysis of the environmental impacts of the project activity?	1, 2, 5, 13, 14, 18, 19, 22	DR, I	The unit does not require any EIA study.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.2. Does the project comply with environmental legislation in the host country?	1, 2, 5, 13, 14, 18, 19, 22	DR, I	Yes. The project has applied for different permissions and licences for erection and operation of the plant. The relevant documentation is described in the PDD and all relevant corresponding documents have been verified. Moreover it has been assessed the necessity for a separate environmental clearance for this project. This is not required. The relevant state departments have been informed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.3. Will the project create any adverse environmental effects?	1, 2, 5, 13, 14, 18, 19, 22	DR, I	No, the project shall not create any adverse environmental impacts.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.4. Have environmental impacts been identified and addressed in the PDD?	1, 2, 5,	DR, I	Yes the environmental aspects have been discussed in the PDD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	13, 14, 18, 19, 22				
G. Comments by Local Stakeholder Validation of the local stakeholder consultation process.					
G.1.1. Have relevant stakeholders been consulted?	1, 2, 7, 8, 9, 18, 19, 22	DR, I	There were insertions in the news papers informing about the project activity. In addition the local village leader was sent a letter. Moreover a press conference was arranged in the plant and the same was covered in "Danik Jagran " in Local Hindi Language. Hereby the project design and technical details was communicated to the general public.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 2, 7, 8, 9, 18, 19, 22	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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, 7, 8, 9, 18, 19, 22	DR, I	A stakeholder consultation process is not required according to Indian legislation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
G.1.4. Is a summary of the comments received provided?	1, 2, 7, 8, 9, 18, 19, 22	DR, I	Positive or neutral comments have been received so far.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.5. Has due account been taken of any comments received?	1, 2, 7, 8, 9, 18, 19, 22	DR, I	See G.1.4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p>The project neither received a Letter of Approval from the Indian government nor from the government of the United Kingdom.</p> <p><u>Corrective Action Request No. 1</u></p> <p>To be submitted to the audit team prior to registration</p>	Table 1	<p>The project has received a Letter of Approval from the government of India and the United Kingdom. Both documents have been submitted to the audit team.</p>	<input checked="" type="checkbox"/>
<p>The project design document does not conform with the Small Scale CDM Project Design Document format (version 02, from July 8, 2005) valid by the time of PDD submission.</p> <p><u>Corrective Action Request No. 2</u></p> <p>The PDD should use the most recent version available.</p>	Table 1	<p>A revised PDD version has been submitted.</p>	<input checked="" type="checkbox"/>
<p>The project itself does not qualify as a Small Scale Project as it fulfils not the requirements defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM by being a project in the category Type-1 i) “renewable energy project activities with a maximum output capacity equivalent to</p>	A.1.1	<p>The project activity is the installation of the 12 MW TG and a grid connection. Whilst the project boundary may include other existing turbines, the specific CDM project activity in the new 12 MW TG only. The existing power supply at the factory is sufficient to</p>	<p>Due to the fact that a similar small scale project has been registered (SRS Bagasse Cogeneration Project) and validation of this project was used successfully as a witnessing activity for a DOE, the audit team concludes that only new equipment needs to be taken</p>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p>up to 15 megawatts.</p> <p><u>Corrective Action Request No. 3:</u></p> <p>The project comprises the existing installation of 5.5 MW as well as the new installation of 12 MW resulting in a total power production based on 17.5 MW. This exceeds the level for small scale projects.</p>		<p>meet only internal demand. Electricity exports will occur directly and solely from the new 12 MW turbine and this is therefore a distinct project activity.</p> <p>This conclusion is confirmed by the fact that a similar small scale project has been registered (SRS Bagasse Cogeneration Project). Validation of this project was used successfully as a witnessing activity for a DOE.</p>	<p>into account when defining the installed capacity.</p> <p><input checked="" type="checkbox"/></p>
<p>The application of the baseline methodology is transparent but inconsistent. No activity level is properly envisaged.</p> <p><u>Corrective Action Request No. 4:</u></p> <p>The PDD refers to the regional grid but the baseline emission factor data contains several inconsistencies such as:</p> <ul style="list-style-type: none"> • Suratgrah plant: The total generation is higher in the build margin than in the operating margin although the same time is covered. • Pragati and Ramgarh GT plants: The total generation of the build margin is 	B.2.2	<p>All data has been revised and added in the revised final PDD version. In addition the EB has decided in its 23rd meeting that IPCC data might be used for NCV determination.</p>	<p><input checked="" type="checkbox"/></p>



Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p>different from the operating margin.</p> <ul style="list-style-type: none"> Nathpa Jhakri: How can the generation of all parts of the hydro installation be the same although the commissioning date has been earlier or later in the covered period 2004-2005. <p>Hence the data and information should be revised. In addition all parameters used should clearly and directly refer to a source. This applies to the following parameters:</p> <ul style="list-style-type: none"> Fuel consumption Emission Generation Capacity addition Commissioning date 			
<p><u>Corrective Action Request No. 5:</u></p> <p>The activity level, described in chapter E.2 of the PDD, should reflect all years of the crediting period and give a justified envisaged level and not offer various options of power production to the reader.</p>	B.2.2	The table has been updated to reflect each year of operation. The given activity level is considered to be plausible.	<input checked="" type="checkbox"/>
The PDD describes that the project is not a	B.2.1	The sources for figures in the	

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
<p>likely baseline scenario according to various barriers faced by the project.</p> <p>Generally the audit team confirms the perception that that the project is not a likely baseline scenario. There are very few sugar companies which are going for co-generation at high pressures and also exporting power to the grid because sugar companies prefer to sell bagasse as this is risk free and does not require high capital costs for cogeneration process implementation.</p> <p><u>Clarification Request No. 1:</u> But the following further information needs to be submitted:</p> <ul style="list-style-type: none"> Sources for the figures given in the calculation Statement on attractive benchmark for power projects (internal or external) Date of investment decision and consideration of CDM by that time. 		<p>calculation of the project financials are: market prices for bagasse which are justified through sales receipts, expected prices for carbon credits and the personnel costs are detailed on additional spreadsheets. The data on the activities of Bajaj are taken from a presentation to analysts.</p> <p>An attractive benchmark for the project has been determined from the weighted average cost of capital. This data is available for other listed companies (LHSF is not listed) and is calculated for EID Parry, a large sugar company in India, at 15.7% (Reference:- "Value Enhancement, Back to Basics" Aswath Damodaram, www.damodaram.com, p 14.). The benchmark indicated exceeds the IRR given by the project even considering the CER revenue. This indicates that even with the CDM the project is not financially attractive. But as the benchmark provided is an indication of the returns sought on such projects rather than an absolute level,</p>	<input checked="" type="checkbox"/>

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
		<p>the argumentations is considered to be plausible. EID Parry is a sugar company and thus provides a suitable comparison but given that it is a listed company the returns to shareholders would be expected to be higher than LHSF.</p> <p>The way the CDM has been considered already from August 2003 has been explained and documented. A statement referring to the various participants of these meetings has been submitted to the audit team.</p>	
<p>A monitoring of the baseline emissions is only partly necessary as the emission factor is determined ex ante and will not be monitored. The only indicator to be monitored is the electricity produced by the turbine and fed to the grid. Hence, the monitoring plan includes measurement of units fed to the grid and this will be measured.</p> <p><u>Clarification Request No. 2:</u> It should be explained to the audit team how it can be assured that only electricity produced in the new equipment and fed to</p>	D.4.1	<p>The new turbine generator will generate electricity at 11kV. This will be stepped up at the plant to 132kV and then sent to the grid. The existing turbines only generate electricity at 440V and therefore it is not possible for them to supply electricity to the grid via the step up transformer.</p> <p>There are two meters – one located at the plant and one at the substation. The substation is the primary meter from which monthly recordings will be taken</p>	<p>The information given is considered as being plausible.</p> <p><input checked="" type="checkbox"/></p>




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Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
the grid will be measured. Moreover it should be demonstrated where the meter is located and how the overall metering system at the plant allows to deviate the single flows.		and will thus form the basis of payments to the power plant. The meter on site will act as a check meter.	
<u>Clarification Request No. 3:</u> QA procedure for monitoring, measurement and reporting defining the responsibility authority, monitoring frequency, data retrieval, data safety and other issues covered in chapter D.5 should be presented to audit team.	D.5.1	A document outlining the roles and responsibilities of personnel involved in the monitoring, measurement and reporting of the data has been prepared and a summary of which is included in section D5 of the PDD.	The information given is considered as being plausible. <input checked="" type="checkbox"/>

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Annex 2: Information Reference List

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Reference No.	Document or Type of Information
1	<p>On-site interviews at the offices of LH Sugar Factories at Pilibhit, Uttar Pradesh, performed on September 3, 2005 by auditing team of TÜV SÜD.</p> <p>Validation team on-site: Sunil Kathuria TÜV South Asia TÜV SÜD Group (former TÜV Süddeutschland India)</p> <p>Interviewed persons: B.P.Dixit LH Sugar Factories (Vice president) R.P.Sharma LH Sugar Factories (General Manager Technical) G.P.Goyal LH Sugar Factories (Deputy General Manager Production) Naveen Kumar LH Sugar Factories (Deputy Chief Engineer (Electrical))</p>
2	Draft Project Design Document, submitted September 2005
3	UNFCCC homepage http://www.unfccc.int
4	Consents to operate under Air and Water Act, dated May 13 and 18, 2005, submitted September 2005
5	Application and grant letter on loan under Sugar Development Fund dated 01.01.2005 and 04.05.2005, submitted September 2005
6	Sanction of Term Loan, State Bank of India, dated 29.11.2004, submitted September 2005 (confidential)
7	Copy of information in local daily newspaper “ Danik Jagran”, dated 09.01.2005, submitted September 2005
8	Letter of Support from District Magistrate Pilibhit, dated June 22, 2005, submitted September 2005
9	No Objection Certificate from District Sugar Officer, Pilibhit, dated 17.06.2005, submitted September 2005
10	Project Feasibility Report on “Co generation - cum-Debottlenecking /Modernisation Project” for the crushing season 2005-06, submitted September 2005
11	Power Purchase Agreement, dated March 7, 2005 and July 21, 2005, submitted September 2005 (confidential)
12	Copy of Purchase Order for the equipment placed on M/s Walchand Industries Ltd, dated 01.09.2004; on M/s Triveni Engineering & Industries Ltd., dated 01.09.2004 and M/s Jyoti Engineering Works, dated 18.07.05, submitted September 2005
13	Permission for the erection of boilers from the inspectorate of boilers, dated 08.07.2005, submitted September 2005
14	Payment proof of the Water Cess under the Water Cess Act for the period of 1.10.2003-03.04.2004, submitted September 2005
15	Financial Calculations for LHSF site, submitted September 2005
16	Letter of Approval, issued by the Government of United Kingdom, Department for Environment, Food and Rural Affairs, dated October

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Reference No.	Document or Type of Information
	26, 2005, submitted November 2005
17	Project Implementation Schedule, LH Sugar Factories, submitted September 2005
18	Final Project Design Document, submitted October 2005
19	Approved baseline and monitoring methodologies for Small Scale CDM Project Activities, UNFCCC, 2005
20	Validation and Verification Manual, IETA/PCF http://www.vvmanual.info
21	Letter of Approval, issued by the Government of India, dated September 23, 2005, submitted November 2005
22	Revised Final Project Design Document, submitted March 2006
23	LHSF Monitoring and Verification Report, LH Sugar Factories, submitted November 2005