



Industrie Service

Validation Report

DCM Shriram Consolidated Limited

Validation of the “Ajbapur Sugar Complex Cogeneration Project” in India

Report No. 677079, Revision 02

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TÜV Industrie Service GmbH TÜV SÜD Group
Carbon Management Service
Westendstr. 199 - 80686 Munich - GERMANY



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Contract approved by:	Michael Rumberg			
Report Title:	Validation of the "Ajrapur Sugar Complex Cogeneration Project" in India			
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Summary:				
<p>The Certification Body "Climate and Energy" has been ordered by DCM Shiram Consolidated Limited to perform a validation of the above mentioned project. The project is a unilateral CDM project.</p> <p>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.</p> <p>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.</p> <p>Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reduction of 403 920 tonnes CO_{2e} over a crediting period of ten years, resulting in a calculated annual average of 40 392 tonnes CO_{2e}, represents a reasonable estimation using the assumptions given by the project documents.</p>				
Work carried out by:	<ul style="list-style-type: none"> • Michael Rumberg (Project manager, GHG lead auditor) • Sunil Kathuria (Lead Auditor Environmental Management Systems (ISO 14001), Local expert, GHG auditor) • Prabhat Kumar (Auditor Environmental Management Systems (ISO 14001), Local expert, GHG auditor - trainee) 			Internal Quality Control by: Werner Betzenbichler



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
DSCL	DCM Shiram Consolidated Limited
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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Annex 1: Validation Protocol

Annex 2: Information Reference List



1 INTRODUCTION

1.1 Objective

DCM Shiram Consolidated Limited (DSCL) has commissioned TÜV Industrie Service GmbH TÜV SÜD Group (TÜV SÜD) to validate the "Ajrapur Sugar Complex Cogeneration 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 June 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 September 2005 serves as the basis for the assessment presented herewith. A revised final PDD submitted in March 2006 responds to the open issue of baseline determination as decided in the 23rd EB meeting regarding the use of IPCC data for the determination of the carbon emission factor.

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 South Asia TÜV SÜD Group (former 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.

Prabhat Kumar is an auditor for quality and environmental management systems (according to ISO 9001 and ISO 14001) and an trainee auditor for CDM/ JI projects at TÜV Süddeutschland India Pvt. Ltd. He is also based in New Delhi. He has received extensive training in the CDM validation process and participated already in CDM project assessments.

The audit team covers the above mentioned requirements as follows:

- Knowledge of Kyoto Protocol and the Marrakech Accords (RUMBERG / KATHURIA)
- 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 (RUMBERG / KATHURIA)
- Political, economical and technical random conditions in host country (KATHURIA / 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 “climate and energy”)



1.3 GHG Project Description

The plant is located in the village Ajrapur P.O Mullapur, district Lakhimpur Kheri ,Uttar Pradesh. The project is located 140 km from Lucknow City and 32 km from Shajhapur. This project was earlier known as Ghaghara Sugar Limited and is now merged in the DCM Shriram Consolidated Limited.

The plant consisted of four turbines totaling 10.5 MW, which are used for captive consumption only. The project owners have now installed a new additional turbine and alternator of 7.5 MW which falls into the project boundary and the plant has been connected to the grid since March 2005 and exports since then electricity to the grid. The turbine generator will be powered by the combustion of bagasse, a co-product of the sugar production process, and other biomass, and will therefore be a renewable carbon neutral source of electricity.

Project participant are DCM Shriram Consolidated Limited, India and Agrinergy Ltd, United Kingdom of Great Britain and Northern Ireland (UK).

The project starting date is August 10, 2003. The 10 year non renewable crediting period starts also October 1, 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 June 2005. The revised final PDD version submitted in March 2006 serves as the basis for the assessment presented herewith.

2.2 Follow-up Interviews

In the period of June 21-22, 2005, TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of DSCL were interviewed. The main topics of the interviews are summarised in Table 1.

Table 1 Interview topics

Interviewed organisation	Interview topics
DSCL	<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 four Corrective Action Request and three Clarification Requests.
- 3) Where Clarification or Corrective Action Requests has been issued, the exchanges between the client and TÜV SÜD to resolve these Clarification or Corrective Action Requests are summarised.
- 4) The conclusions for each 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 project participants are DCM Shriram Consolidated Limited, India and Agrinergy Ltd, United Kingdom of Great Britain and Northern Ireland (UK). The participating Party, India, as the host Party, meets all relevant participation requirements. The project has received a Letter of Approval from the Indian government in December 2004. So far no Letter of Approval from the government of the UK has been provided to the audit team.

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 project does confirm with the project category I.D. “Grid connected renewable electricity generation”.

The project design engineering does reflect current good practices. The project is, hence, professionally managed. Feasibility studies have been carried out in advance. 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 project does not require any significant training needs as the plant was already operating four units for captive use. Since in house staff is trained in maintenance of existing equipment since 1998, they are trained and competent enough to take care of the new installations as well.

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 has to obtain different permissions and licences for erection and operation of the plant. The relevant documentation has been verified.

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 operational lifetime of 20 years as defined in the PDD is considered as acceptable.

The crediting period is clearly defined but the starting date defined in the PDD does not comply with the requirements. In addition it should be made clear to what event the date is related as project planning started before and operation started later. Moreover the date the investment decision has been made should be clarified.

3.1.2 Findings

Corrective Action Request No. 1:

A Letter of Approval from the government of the UK has to be provided to the audit team.

Response:

A Letter of Approval from the government of the UK has been provided to the audit team.

Clarification Request No. 2

The starting date defined in the PDD does not comply with the requirements. The date should be given following the following system DD/MM/YYYY. In addition it should be made clear to what event the date is related as project planning started before and operation started later. Moreover the date the investment decision has been made should be clarified.

Response:

The information has been adjusted / amended in the updated PDD.

Corrective Action Request No. 4:

The project comprises the existing installation of 10.5 MW as well as the new installation of 7.5 MW resulting in a total power production based on 18 MW. This exceeds the level for small scale projects.

Response:



The project activity is the installation of the 7.5 MW only and hence small scale rules are applicable. 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 selected baseline methodology is generally in line with the baseline methodologies provided for the relevant project category. The project does confirm with the project category I.D. “Grid connected renewable electricity generation”.

The application of the baseline methodology is not considered to be appropriate as the chosen grid is the state grid with connected central stations whereas the regional grid is considered to be the most suited one by the audit team. This opinion is also substantiated by a clarification note given by the methodology panel to the EB, dated October 24, 2005. (see link under: <http://cdm.unfccc.int/methodologies/Clarifications>)

The PDD describes that the project is not a likely baseline scenario according to various barriers faced by the project. The investment barrier described and related to cost of generation of electricity is not supported by documented evidence. The PDD indicates that the unit cost of service is higher for the project case than for other alternatives but detailed figures need to be provided. In addition the audit team does not consider a 100 MW coal power plant and the respective figures a proper alternative as economies of scale apply hereby. Hence the barrier is currently not considered as being valid. The financial barrier is not supported by documented evidence nor is the company internal benchmark defined. Hence the barrier is currently not considered as being valid. The other barriers are described in a too general manner and do not give convincing arguments.

During the validation process the audit team moreover 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 audit team moreover verified that from the initial point the CDM revenue was considered in the project planning stage. In April 2002 a proposal was submitted to BC Hydro where a projection on CDM revenue was shown. This was submitted for the purpose of PDD writing. BC Hydro did not proceed due to internal reasons.

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. 2:

The regional grid should form the basis for the determination of the baseline emission factor. To be modified.

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.

Clarification Request No. 1:

Clarification in form of additional information should be submitted in order to give evidence that the project – with respect to the described barriers - is not the baseline scenario.

Response:

Further elaboration has been provided with respect to the investment barrier which indicate that the project is considered to be additional:

- Underlying calculation of the IRR of 13 and 22%.

The respective calculations have been submitted to the audit team.

- Evidence on announced benchmark of 20% IRR

Evidence on the benchmark has been provided by an internal document (office circular) from 2002 referring to the listed benchmark.

- List of projects under investment provided by DSCL

A list of projects has been submitted to the audit team substantiating the arguments given before.

Clarification Request No. 3:

The activity level described in chapter E.2 of the PDD should reflect all years of the crediting period and justified the envisaged level.

Response:

Respective information has been provided and the same is deemed realistic.

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.



A monitoring of the baseline emissions is hence only partly necessary as the emission factor is determined ex ante and will not be monitored. The only mandatory indicator to be monitored is the electricity fed to the grid. The respective parameter is described in the monitoring plan.

The application of the monitoring methodology is transparent.

No project emissions are evident in the project. The power plant will only combust renewable biomass and the fuel combustion is considered to take place emission free. No leakage is evident in the project as no equipment is transferred from other sites.

The company has been certified according to ISO9001 and has established and maintained a quality management system at the plant. Valid certificates have been verified during the on site audit. The authority and responsibilities are defined in the QM. Mr. Naresh Paliwal (GM plant) is responsible for the overall system.

The local persons are trained by boiler manufactures and turbine manufacturers. Moreover, the plant is operated by a well equipped engineering department.

No emergency situation leading to unintended emission is expected at the plant.

3.3.2 Findings

None

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 plant consisted of 4 turbines totalling 10.5 MW, which are used for captive consumption. It is verified that these 4 units were for only captive use and never exported electricity. The same are outside the project boundary. The project owners have now installed a new additional turbine and alternator of 7.5 MW which falls in the project boundary as the plant has been connected to the grid since March 2005. The PDD does also define the project's system boundaries by description of the project components. All components and facilities used to mitigate GHG's are covered. A detailed project report was prepared by DSCL Energy Services. The compiled report was presented to the audit team and verified by the same.

The project location is correctly described.

No project emissions are to be expected. 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 emissions are documented in a complete and transparent manner, but as the chosen grid is the state grid with connected central stations whereas the regional grid is considered to be the most suited one by the audit team, this needs to be



modified as described in CAR 2.

3.4.2 Findings

None

3.4.3 Conclusion

The project does comply with the requirements.

3.5 Environmental Impacts

3.5.1 Discussion

The sugar unit as a whole when established required an EIA study and the same was repeated at the time of expansion of the plant capacity. The project has consents from the Uttar Pradesh State Pollution Control Board and is found to comply with the terms and conditions of the consent. The client has in place all necessary consents /permissions to establish the unit.

The project is not expected to create any adverse environmental effects but the environmental aspects have not even been discussed in the PDD.

3.5.2 Findings

Corrective Action Request No. 3:

Environmental impacts are not described in details. To be added.

Response:

Respective information has been provided and the same is deemed sufficient.

3.5.3 Conclusion

The project does comply with the requirements.

3.6 Comments by Local Stakeholders

3.6.1 Discussion

A stakeholder consultation process is not required according to Indian legislation but respective authorities have approved the project. In addition on May 27, 2004, at 11 am, 29 representatives were called in a meeting and the participation was recorded. Invitation has been made via newspapers and personal communication. Farmers, teachers, former governmental officials, the chairman of the cane grower's society, representatives of the community, transporters and traders formed the diverse group of participants at that meeting.

Comments are noted in the proceedings. All comments received are neutral or positive except the one of Mr. Sada Singh who insisted the objective that the project proponent should offer to distribute power to the nearby villages which the company is not doing currently.



All comments received so far are neutral or positive. Regarding the comment of Mr. Sada Singh the project proponent explained the system of power purchase and sale and sees no option to offer direct electricity supply to the neighbours.

3.6.2 Findings

None

3.6.3 Conclusion

The project does comply with the requirements.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

A global public stakeholder process on the UNFCCC website has taken place from September 15, 2005 for 30 days. Until the end of the stakeholder process, October 14, 2005, no comment has been received.



5 VALIDATION OPINION

TÜV SÜD has performed a validation of the “Ajrapur Sugar Complex Cogeneration 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 demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. 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 403 920 tonnes CO_{2e} over a crediting period of ten years, resulting in a calculated annual average of 40 392 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, appearing to be 'W. Betzenbichler', enclosed within a scribbled oval.

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

Munich, 2006-03-17

A handwritten signature in black ink, appearing to be 'M. Rumberg', written in a cursive style.

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	<input checked="" type="checkbox"/>	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	<input checked="" type="checkbox"/>	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.	<input checked="" type="checkbox"/>	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	CAR 1 <input checked="" type="checkbox"/>	The project has received a Letter of Approval from the Indian government but no Letter of Approval from the government of the UK has been provided to the audit team. <u>Corrective Action Request No. 1:</u> A Letter of Approval from the government of the UK ha to be provided to the audit team.
5. The emission reductions should be real, measurable and give long-term benefits related to the mitigation of	Kyoto Protocol Art. 12.5b	<input checked="" type="checkbox"/>	Table 2, Section E.1 to E.4



REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference/ Comment
climate change			
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 has 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



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	☑	The project design document does conform with the Small Scale CDM Project Design Document format (version 01) valid by time of PDD submission.
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	☑	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	☑	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	☑	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	☑	A global public stakeholder process on the UNFCCC website has taken place from September 15, 2005 for 30 days. Until the end of the stakeholder process, October 14, 2005, no comment has 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, 3, 16, 21, 25	DR, I	The project itself does not qualify as a Small Scale Project as it does not fulfil 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. 4:</u> The project comprises the existing installation of 10.5 MW as well as the new installation of 7.5 MW resulting in a total power production based on 18 MW. This exceeds the level for small scale projects.	CAR 4	<input checked="" type="checkbox"/>
A.1.2. The small scale project activity is not a debundled component of a larger project activity?	1, 2, 3, 16, 21, 25	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"/>

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			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.		
A.1.3. Does proposed project activity confirm to one of the project categories defined for small scale CDM project activities?	1, 2, 3, 16, 21, 25	DR, I	Yes, the project confirms with the project category I.D. "Grid connected renewable electricity generation".	<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, 3, 16, 21, 25	DR, I	Yes, the PDD does clearly define the project's spatial boundaries. The plant consisted of 4 turbines totalling 10.5 MW, which are used for captive consumption. It is verified that these 4 units were for only captive use and never exported electricity. The same are considered to be outside the project boundary. But see CAR 4 under A.1.1. The project owners have now installed a new additional turbine and alternator of 7.5 MW which falls in the project boundary as the plant has been connected to the grid since March 2005 exports electricity to the grid.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.2. Are the project's system (components and facilities used to mitigate GHG's)	1, 2, 3, 16,	DR, I	Yes, the PDD does define the project's system boundaries by description of the project components. All components and facilities used to	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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boundaries clearly defined?	19, 21, 25		mitigate GHG's are covered. A detailed project report was prepared by DSCL Energy Services. The compiled report was presented to the audit team and verified by the same. The project location is correctly described.		
A.2.3. Does the project design engineering reflect current good practices?	1, 2, 3, 16, 19, 21, 25	DR, I	Yes, the project design engineering does reflect current good practices. The project is, hence, professionally managed. Feasibility studies have been carried out in advance. See also answer in A.2.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
A.2.4. Will the project result in technology transfer to the host country?	1, 2, 3, 16, 21, 25	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, 3, 16, 21, 25	DR, I	The project does not require any significant training needs as the plant was already operating four units for captive use. Since in house staff is trained in maintenance of existing equipment since 1998, they are trained and competent enough to take care of the new installations as well.	<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	1, 2, 3,	DR, I	During the project execution stage the peak number of workers employed was about 800.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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reductions?	16, 21, 25				
A.3.2. Will the project create any adverse environmental or social effects?	1, 2, 3, 16, 21, 25	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, 3, 4, 16, 21, 25	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 moreover confirms 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, 3, 4, 6, 7, 12, 16, 20, 21, 25	DR, I	The project has obtained different permissions and licences for erection and operation of the plant. All relevant corresponding documents have been verified during the audit on site.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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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, 3, 16, 21, 25	DR, I	Yes, the selected baseline methodology is generally in line with the baseline methodologies provided for the relevant project category	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.1.2. Is the baseline methodology applicable to the project being considered?	1, 2, 3, 16, 21, 25	DR, I	Yes, the selected baseline methodology is applicable to the project.	<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	1, 2, 3,	DR, I	The PDD describes that the project is not a likely baseline scenario according to various barriers	CR 1	<input checked="" type="checkbox"/>

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<p>to the existence of one or more of the following barriers: investment barriers, technology barriers, barriers due to prevailing practice or other barriers?</p>	<p>16, 21, 25, 27, 28, 29</p>		<p>faced by the project.</p> <p>The investment barrier described and related to cost of generation of electricity is not supported by documented evidence. The PDD indicates that the unit cost of service is higher for the project case than for other alternatives but detailed figures need to be provided. In addition the audit team does not consider a 100 MW coal power plant and the respective figures a proper alternative as economies of scale apply hereby. Hence the barrier is currently not considered as being valid.</p> <p>The financial barrier is not supported by documented evidence nor is the company internal benchmark defined. Hence the barrier is currently not considered as being valid.</p> <p>The other barriers are described in a too general manner and do not give convincing arguments.</p> <p><u>Clarification Request No. 1:</u> Clarification in form of additional information should be submitted in order to give evidence that the project – with respect to the described barriers - is not the baseline scenario.</p>		
<p>B.2.2. Is the application of the baseline methodology and the discussion and</p>	<p>1, 2, 3,</p>	<p>DR, I</p>	<p>The application of the baseline methodology is not considered to be appropriate as the chosen grid is the state grid with connected central stations</p>	<p>CAR 2 and</p>	<p><input checked="" type="checkbox"/></p>

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determination of the chosen baseline transparent and conservative?	16, 21, 24, 25		<p>whereas the regional grid is considered to be the most suited one by the audit team. This opinion is also substantiated by a clarification note given by the methodology panel to the EB, dated October 24, 2005. (see link under: http://cdm.unfccc.int/methodologies/Clarifications)</p> <p><u>Corrective Action Request No. 2:</u> The regional grid should form the basis for the determination of the baseline emission factor. To be modified.</p> <p><u>Clarification Request No. 3:</u> The activity level described in chapter E.2 of the PDD should reflect all years of the crediting period and justified the envisaged level.</p>	CR 3	<input checked="" type="checkbox"/>
B.2.3. Are relevant national and/or sectoral policies and circumstances taken into account?	1, 2, 3, 15, 16, 21, 25	DR, I	<p>Yes, relevant sectoral policies have been taken into account.</p> <p>Regarding biomass supply: Shortage of biomass is not envisaged. The only thing that can happen is that in case of extreme weather conditions the yield of the sugar cane can go down.</p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B.2.4. Is the baseline selection compatible with the available data?	1, 2, 3, 16, 21, 25	DR, I	See B.2.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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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, 3, 16, 21, 25	DR, I	See B.2.1	<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, 3, 16, 21, 25	DR, I	The operational lifetime of 20 years as defined in the PDD is considered as acceptable. <u>Clarification Request No. 2</u> The starting date defined in the PDD does not comply with the requirements. The date should be given following the following system DD/MM/YYYY. In addition it should be made clear to what event the date is related as project planning started before and operation started later. Moreover the date the investment decision has been made should be clarified.	CR 2	<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, 3, 16, 21, 25	DR, I	The crediting period is clearly defined.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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	1, 2, 3, 9, 16,	DR, I	During the validation process the audit team obtained the information and evidenced that the start of project activities has been before the	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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starting date falls in the period between 1 January 2000 and the registration of the first clean development mechanism project?	21, 25		<p>registration date of the first clean development mechanism project.</p> <p>The audit team moreover verified that from the initial point the CDM revenue was considered in the project planning stage. In April 2002 a proposal was submitted to BC Hydro where a projection on CDM revenue was shown. This was submitted for the purpose of PDD writing. BC Hydro did not proceed due to internal reasons.</p>		
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, 16, 21	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, 16, 21	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, 16, 21	DR, I	Yes, the application of the monitoring methodology is transparent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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D.1.4. Will the monitoring methodology give opportunity for real measurements of achieved emission reductions?	1, 2, 16, 21	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, 16, 21	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. No use of fossil fuels is envisaged.	<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, 16, 21	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.2.3. Do the measuring technique and frequency comply with good monitoring practices?	1, 2, 16, 21	DR, I	The technique and frequency will be according to national standards.	<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, 16, 21	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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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, 16, 21	DR, I	No leakage is evident in the project as no equipment is transferred from other sites.	<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, 16, 21	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, 16, 21	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, 16, 21	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, 16, 21	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 only indicator mandatory to be monitored is the electricity fed to the grid. The respective parameter is properly described in the monitoring plan.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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D.4.2. Will it be possible to monitor / measure the specified baseline emission indicators?	1, 2, 16, 21	DR, I	Yes as the electricity produced is a key parameter for daily operations it will be possible to monitor this indicator.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.4.3. Do the measuring technique and frequency comply with good monitoring practices?	1, 2, 16, 21	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, 16, 21	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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, 16, 21	DR, I	The company has been certified according to ISO9001 and has established and maintained a quality management system at the plant. Valid certificates have been verified during the on site audit. The authority and responsibilities are defined in the QM. Mr. Naresh Paliwal (GM plant) is responsible for the overall system.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.2. Is the authority and responsibility for registration monitoring measurement and reporting clearly described?	1, 2, 16, 21	DR, I	The company has been certified according to ISO9001 and have established and maintained a quality management system at the plant. The actual implementation has to be checked in verification.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.3. Are procedures identified for training of	1, 2, 16,	DR,	The local persons are trained by boiler	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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monitoring personnel?	21	I	manufactures and turbine manufacturers. Moreover, the plant operator has a well equipped engineering section in the power plant.		
D.5.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	1, 2, 16, 21	DR, I	No emergency situation with unintended emission has to be expected.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.5. Are procedures identified for calibration of monitoring equipment?	1, 2, 16, 21	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, 16, 21	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, 16, 21	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, 16, 21	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	1, 2, 16, 21	DR, I	See D.5.1	<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, 16, 21	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D.5.11. Are procedures identified for project performance reviews?	1, 2, 16,	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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	21				
D.5.12. Are procedures identified for corrective actions?	1, 2, 16, 21	DR, I	See D.5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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, 16, 21	DR, I	No project emissions are to be expected.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.1.2. Have all relevant greenhouse gases and sources been evaluated?	1, 2, 16, 21	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, 16, 21	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, 16, 21	DR, I	See above E.1.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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E.1.5. Have conservative assumptions been used?	1, 2, 16, 21	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, 16, 21	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, 16, 21	DR, I	No leakage is evident in the project.	<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, 16, 21	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 (if applicable)?	1, 2, 16, 21	DR, I	See above in E.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.2.4. Are the calculations documented in a complete and transparent manner and (if applicable)?	1, 2, 16, 21	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, 16, 21	DR, I	See above in E.2.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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E.2.6. Are uncertainties in the leakage estimates properly addressed (if applicable)?	1, 2, 16, 21	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, 16, 21	DR, I	The application of the baseline methodology is not considered to be appropriate as the chosen grid is the state grid with connected central stations whereas the regional grid is considered to be the most suited one by the audit team. To be modified as described in CAR 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, 16, 21	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"/>
E.3.3. Have all relevant greenhouse gases and sources been evaluated?	1, 2, 16, 21	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, 16, 21	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.5. Are the calculations documented in a complete and transparent manner?	1, 2, 16, 21	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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E.3.6. Have conservative assumptions been used?	1, 2, 16, 21	DR, I	Yes.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
E.3.7. Are uncertainties in the baseline emissions estimates properly addressed?	1, 2, 16, 21	DR, I	Yes.	<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, 16, 21	DR, I	Yes in case the projects is implemented as planned.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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, 4, 6, 7, 12, 14, 15, 16, 20, 21	DR, I	The sugar unit as a whole when established required an EIA study and the same was repeated at the time of expansion of the plant capacity. The project has consents from the Uttar Pradesh State Pollution Control Board and is found to comply with the terms and conditions of the consent.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.2. Does the project comply with environmental legislation in the host	1, 2, 4, 6,	DR, I	The client has in place all necessary consents /permissions to establish the unit.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
country?	7, 12, 14, 15, 16, 20, 21				
F.1.3. Will the project create any adverse environmental effects?	1, 2, 4, 6, 7, 12, 14, 15, 16, 20, 21	DR, I	No, the project is not expected to create any adverse environmental effects.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
F.1.4. Have environmental impacts been identified and addressed in the PDD?	1, 2, 4, 6, 7, 12, 14, 15, 16, 20, 21	DR, I	No, the environmental aspects have not been discussed in the PDD. <u>Corrective Action Request No. 3:</u> Environmental impacts are not described in details. To be added.	CAR 3	<input checked="" type="checkbox"/>
G. Comments by Local Stakeholder Validation of the local stakeholder consultation process.					
G.1.1. Have relevant stakeholders been	1, 2,	DR,	On May 27, 2004, at 11 am, 29 representatives	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
consulted?	4, 11, 16	I	were called in a meeting and the participation was recorded. Invitation has been made via newspapers and personal communication. Farmers, teachers, former governmental officials, the chairman cane grower society community, transporters and traders formed the diverse group of participants at that meeting.		
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 2, 4, 11, 16	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, 4, 11, 16	DR, I	A stakeholder consultation process is not required according to Indian legislation but respective authorities have approved the project.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.4. Is a summary of the comments received provided?	1, 2, 4, 11, 16	DR, I	Yes comments are noted in the proceedings. All comments received are neutral or positive except the one of Mr. Sada Singh who insisted the objective that the project proponent should offer to distribute power to the nearby villages which the company is not doing currently.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
G.1.5. Has due account been taken of any comments received?	1, 2, 4, 11,	DR, I	All comments received so far are neutral or positive. Regarding the comment of Mr. Sada Singh the project proponent explained the system	<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.
	16		of power purchase and sale and sees no option to offer direct electricity supply to the neighbours.		

* 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 has received a Letter of Approval from the Indian government but no Letter of Approval from the government of the UK has been provided to the audit team.</p> <p><u>Corrective Action Request No. 1:</u></p> <p>A Letter of Approval from the government of the UK has to be provided to the audit team.</p>	Table 1	A Letter of Approval from the government of the UK has been provided to the audit team.	<input checked="" type="checkbox"/>
<p>The application of the baseline methodology is not considered to be appropriate as the chosen grid is the state grid with connected central stations whereas the regional grid is considered to be the most suited one by the audit team. This opinion is also substantiated by a clarification note given by the methodology panel to the EB, dated October 24, 2005. (see link under: http://cdm.unfccc.int/methodologies/Clarifications)</p> <p><u>Corrective Action Request No. 2:</u></p> <p>The regional grid should form the basis for the determination of the baseline emission factor. To be modified.</p>	B.2.2	<p>The revised 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 different from the operating margin. • Nathpa Jhakri: How can the 	<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> <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>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> <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>No, the environmental aspects have not been discussed in the PDD.</p> <p><u>Corrective Action Request No. 3:</u> Environmental impacts are not described in details. To be added.</p>	F.1.4	Respective information has been provided and the same is deemed sufficient.	<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 project itself does not qualify as a Small Scale Project as it does not fulfil 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.</p> <p><u>Corrective Action Request No. 4:</u></p> <p>The project comprises the existing installation of 10.5 MW as well as the new installation of 7.5 MW resulting in a total power production based on 18 MW. This exceeds the level for small scale projects.</p>	<p>A.1.1</p>	<p>The project activity is the installation of the 7.5 MW only and hence small scale rules are applicable. 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>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.</p> <p><input checked="" type="checkbox"/></p>
<p>The PDD describes that the project is not a likely baseline scenario according to various barriers faced by the project.</p> <p>The investment barrier described and related to cost of generation of electricity is not supported by documented evidence. The PDD indicates that the unit cost of service is higher for the project case than for other alternatives but detailed figures need to be provided. In addition the audit team does not consider a 100 MW coal power</p>	<p>B.2.1</p>	<p>Further elaboration has been provided with respect to the investment barrier which indicate that the project is considered to be additional:</p> <ul style="list-style-type: none"> • Underlying calculation of the IRR of 13 and 22%. <p>The respective calculations have been submitted to the audit team.</p> <ul style="list-style-type: none"> • Evidence on announced 	<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>plant and the respective figures a proper alternative as economies of scale apply hereby. Hence the barrier is currently not considered as being valid.</p> <p>The financial barrier is not supported by documented evidence nor is the company internal benchmark defined. Hence the barrier is currently not considered as being valid.</p> <p>The other barriers are described in a too general manner and do not give convincing arguments.</p> <p><u>Clarification Request No. 1:</u> Clarification in form of additional information should be submitted in order to give evidence that the project – with respect to the described barriers - is not the baseline scenario.</p>		<p>benchmark of 20% IRR</p> <p>Evidence on the benchmark has been provided by an internal document (office circular) from 2002 referring to the listed benchmark.</p> <ul style="list-style-type: none"> List of projects under investment provided by DSCL <p>A list of projects has been submitted to the audit team substantiating the arguments given before.</p>	
<p><u>Clarification Request No. 2</u></p> <p>The starting date defined in the PDD does not comply with the requirements. The date should be given following the following system DD/MM/YYYY. In addition it should be made clear to what event the date is related as project planning started before and operation started</p>	C.1.1	The information has been adjusted / amended in the updated PDD.	<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
later. Moreover the date the investment decision has been made should be clarified.			
<u>Clarification Request No. 3:</u> The activity level described in chapter E.2 of the PDD should reflect all years of the crediting period and justified the envisaged level.	B.2.2	Respective information has been provided and the same is deemed realistic.	<input checked="" type="checkbox"/>

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Annex 2: Information Reference List

Final Report 2006-03-17	Validation of the "Ajapaur Sugar Complex Cogeneration Project" in India Information Reference List	Page 1 of 2	 Industrie Service
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Reference No.	Document or Type of Information
1	<p>On-site interview at the offices and at the plant of DCM Shriram Consolidated Limited, conducted on June 21-22, 2005 by auditing team of TÜV SÜD:</p> <p>Validation team on-site: Sunil Kathuria TUV South Asia TUV SUD Group (former TÜV Süddeutschland India)</p> <p>Interviewed persons: Naresh Palliwal DCM Shriram Consolidated Limited Paramdeep Singh DCM Shriram Consolidated Limited Robert Taylor Agrinergy Ltd. Dinesh Sardana DCM Shriram Consolidated Limited A.P.Yadav DCM Shriram Consolidated Limited H.N.Mishra DCM Shriram Consolidated Limited Vidya Prakash Sharma DCM Shriram Consolidated Limited</p>
2	Draft Project Design Document, submitted June 2005
3	UNFCCC homepage http://www.unfccc.int
4	Letter of Approval, issued by the Government of India, Ministry of Environment and Forest, dated December 27, 2004, submitted June 2005
5	Information note on merger of Ghagra Sugar with DCM Shriram Consolidated Limited, not dated, submitted June 2005
6	Consent under Air Act, Uttar Pradesh State Pollution Control Board, dated December 28, 2004, submitted June 2005
7	Consent under Water Act, Uttar Pradesh State Pollution Control Board, dated December 22, 2004, submitted June 2005
8	Letter regarding change of boilers, DCM Consolidated Sugars Limited and Letter on boiler re-inspection, dated July 13, 2004 and October 8, 2004, submitted June 2005
9	Proposal for Green House Gases Emission Offset, submitted to BC Hydro, DCM Shriram Consolidated Limited, dated April 2002, submitted June 2005 (confidential)
10	Project Activity Schedule, DCM Shriram Consolidated Limited, dated July 15 2003, submitted June 2005
11	Proceedings of the stakeholder meetings, dated May 27, 2004, submitted June 2005
12	Letter to Uttar Pradesh State Pollution Control Board regarding payment of Cess, DSCL Sugar, dated March 1, 2005, submitted June

Final Report 2006-03-17	Validation of the "Ajapapur Sugar Complex Cogeneration Project" in India Information Reference List	Page 2 of 2	 Industrie Service
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Reference No.	Document or Type of Information
	2005
13	Copy of the order allowing merger of Ghaghra Sugars with DCM Shriram Consolidated, July 2004, submitted June 2005
14	Copy of Power Purchase Agreements, signed January 16, 1996 and October 5, 2002, submitted June 2005
15	Assessment of cane areas and cane yields, DSCL Sugar, submitted June 2005
16	Final Project Design Document, submitted September 2005
17	Purchase order for technical equipment, May 14, 2003, submitted June 2005
18	Balance sheet and profit and loss statement for the year 2004-05, DCM Shriram Consolidated Limited, submitted June 2005
19	Detailed Project Report for 7.5 MW Co-generation Power Project, DSCL Energy Service, issued July 2003, submitted June 2005
20	Rapid Environmental Impact Assessment, Chem -Tech Projects, submitted June 2005
21	Approved baseline and monitoring methodologies for Small Scale CDM Project Activities, UNFCCC, 2005
22	Validation and Verification Manual, IETA/PCF http://www.vvmanual.info
23	UNFCCC: CDM. Tool for Demonstration and Assessment of Additionality approved by EB (EB 16 Annex 1)
24	Determination of relevant grid boundaries in India, CDM Methodology Clarification Form, issued by the CDM Methodology Panel on October 24, 2005 (see link under: http://cdm.unfccc.int/methodologies/Clarifications)
25	Revised Final Project Design Document, submitted March 2006
26	Letter of Approval, issued by the Government of United Kingdom of Great Britain and Northern, dated September 23, 2005, submitted November 2005
27	List of executed projects, DCM Shriram Consolidated Limited, submitted December 2005
28	Financial calculations, DCM Shriram Consolidated Limited, submitted December 2005
29	Sanction of investment proposals, office circular, DCM Shriram Consolidated Limited, dated October 20, 2002, submitted December 2005