



CDM Project Activity Registration and Validation Report Form

(By submitting this form, designated operational entity confirms that the proposed CDM project activity meets all validation and registration requirements and thereby requests its registration)

Section 1: Request for registration

Name of the designated operational entity (DOE) submitting this form	TÜV Industrie Service GmbH - TÜV Rheinland Group
Title of the proposed CDM project activity (Section A.2 of the attached CDM-PDD) submitted for registration	Power Generation from the proposed 11.2 MW waste heat recovery boiler at ISA smelt furnace of the Copper Smelter, Sterlite Industries India Limited, Tuticorin
Project participants (Name(s))	Sterlite Industries India Limited
Sector in which project activity falls	1
Is the proposed project activity a small-scale activity?	Yes / <u>No</u> (underline as applicable)

Section 2: Validation report

List of documents to be attached to this validation report (please check mark):	
<input checked="" type="checkbox"/> The CDM-PDD of the project activity <input checked="" type="checkbox"/> An explanation by the submitting designated operational entity of how it has taken due account of comments on validation requirements received, in accordance with the CDM modalities and procedures, from Parties, stakeholders and UNFCCC accredited non-governmental organizations; <input checked="" type="checkbox"/> The written approval of voluntary participation from the designated national authority of each Party involved, including confirmation by the host Party that the project activity assists it in achieving sustainable development: Host country approval by Ministry of Environment and Forest, Government of India, Letter number F. No. 4/24/2005 - CCC-, dated December 26, 2005. <input checked="" type="checkbox"/> Other documents, including any validation protocol used in the validation <ul style="list-style-type: none"> • Validation report No. 4004, Revision 02. • List of persons interviewed by DOE validation team during the validation process <input checked="" type="checkbox"/> Information on when and how the above validation report is made publicly available. <input type="checkbox"/> Banking information on the payment of the non-reimbursable registration fee <input checked="" type="checkbox"/> A statement signed by all project participants stipulating the modalities of communicating with the Executive Board and the secretariat in particular with regard to instructions regarding allocations of CERs at issuance	

Executive Summary and Introduction, including

- **Description of the proposed CDM project activity**
- **Scope of validation process (include all documentation that has been reviewed and name persons that have been interviewed as part of the validation, as applicable)**
- **DOE Validation team (list of all persons involved in the validation, describing functions assumed in the validation)**

M/s Sterlite Industries India Limited (SIIL) has established a "Power Generation from the proposed 11.2 MW waste heat recovery boiler at ISA smelt furnace of the Copper Smelter, Sterlite Industries India Limited, Tuticorin", at SIIL factory premises situated at State Industries Promotion Corporation of Tamil Nadu (SIPCOT) Industrial Complex, Tuticorin, Tamil Nadu, India. The project activity involves recovery of waste gas heat energy from copper smelter to generate the steam by a Waste Heat Recovery Boiler (WHRB). Also further energy is added through FO fired super heater to increase the steam pressure up to 66 bar. The steam at 45 TPH flow rate and 66 bar pressure leads to 11.2 MW TG set for electricity generation. Generated electricity is consumed in house. As per Draft CDM PDD (August 2005) the electricity generated is partly substituting the power generation from combination of LSHS based CPP of SIIL, power supply from coal based CPP of MALCO and electricity supply from state grid. The selected baseline is economically most attractive option as per guidance of selection of baseline of ACM 0004/Version 02. The selected baseline is also having the lowest emission factor of the credible and realistic alternatives to the project emission and hence, it is conservative.

This is a project activity in sectoral scope 1 with application of ACM0004/Version 02 approved by CDM EB. The scope of validation of project activity includes:

- Review and submission of new methodology
- Review of the Draft CDM PDD for preparation to publish the PDD (s) exclusive of confidential data
- Publication of the Draft CDM PDD without confidential data
- Collection and publication of all comments of the global stakeholders
- Significance evaluation of the environmental impacts associated with the project activity, the global stakeholder comments received and followed with a site visit, if required
- Validation of the proposed project activity
- Submission of the Validation Report to the CDM EB

The services of the entire validation is performed by the TÜV Rheinland Group, under the leadership of TUV Rheinland India office and whose team is indicated below:

Team Member	Role	Office
Darshak Mehta	Team Leader - GHG Auditor	India
Manojkumar Borekar	GHG Auditor	India
Dr. Manfred Brinkmann	Internal Reviewer	Japan

Description of methodology for carrying out validation

- **Review of CDM-PDD and additional documentation attached to it**
- **Assessment against CDM requirements (e.g. by use of a validation protocol)**
- **Report of findings by the DOE, e.g. by use of type of findings (e.g. corrective action requests, clarifications or observations). Please explain the way findings are "labelled" during validation.**
- **Include statements or assessments in the section "Conclusions, final comments and validation opinion" below.**

The validation process consists of the following phases:

- I. Review of Documents
 - A. Review of the SIIL's documentation
 - B. Desk review of identified supporting documents
- II. Follow-up interviews with project activity stakeholders
- III. Issue of the Draft Validation Report
- IV. Resolution of outstanding issues and the issuance of the Validation Report and Opinion

In order to ensure transparency in the process, the Validation Protocol is customised for the project activity. The protocol shows in a transparent manner, criteria, 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 TUV Rheinland documented how a particular requirement has been validated and the results of validation

The Validation Protocol consists of three tables. Different columns in these tables are described in table 1, 2 and 3 of figure 1 – Validation Protocol tables.

The study generated number of questions regarding the participation requirements, project design, baseline, monitoring plan calculation of GHG emission reduction and comments by local stakeholders. Explanations to these questions are sought from the project activity proponents and based on the submitted details having addressed these concerns a Validation Opinion is being formed. These queries are available within the text of this report as well as enclosed in completed and up-dated Validation Protocol annexed (Appendix A) to the report.

Findings established during the validation could either be seen as a non-fulfilment of validation criteria or where the risk to the fulfilment of project activity objectives is identified. CAR are issued, where:

- a. Mistakes have been made with a direct influence on project activity results
- b. CDM or host party requirements have not been met
- c. There is a risk that the project activity would not be accepted as a CDM project activity or that the emission reductions will not be certified

The validation team, has also used the additional labels in the form of request for Clarification where additional information is needed through the reporting of draft implications after having performed the Document Review (DR) and/or telephonic or personal Interview (I) and/or as when during the Site Visit (SV). This is along with the identification as Open (OP) for CLs that could not be completely closed during the formulation of the Validation Opinion and as a trail prior to or during the verification process.

Explanation by the submitting designated operational entity of how it has taken due account of comments on validation requirements received, in accordance with the CDM modalities and procedures, from Parties, stakeholders and UNFCCC accredited non-governmental organizations;

- **Description of how and when the PDD was made publicly available**
- **Description of how comments were received and made publicly available**
- **Explanation of how due account has been taken of comments received**
- **Compilation of all comments received (Identify the submitter)**

TUV Rheinland has published the Draft CDM PDD (August 2005) on UNFCCC website from September 06, 2005 to October 05, 2005. During the publication of the Draft CDM PDD (August 2005), no comment was received on the project activity.

Conclusions, final comments and validation opinion

- **Provide conclusions on each requirement under paragraph 37 of the CDM modalities and procedures, describing how these requirements have been met. This shall include assessments and findings (e.g. corrective action requests, clarifications or observations) in relation to each requirement, including a confirmation that all issues raised have been addressed to the satisfaction of the DOE.**
- **Final comments and validation opinion**

TUV Rheinland has performed a validation of the “Power Generation from the proposed 11.2 MW waste heat recovery boiler at ISA smelt furnace of the Copper Smelter, Sterlite Industries India Limited, Tuticorin” (hereafter called “the project”). The validation was performed on the basis of the UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and subsequent decisions by the CDM EB for CDM project activity. Validation process also considered basis of the UNFCCC criteria relevant to those criteria relevant to the host country, India, as well as criteria to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design documents (October 2005 to September 2006), ii) follow-up interviews with project stakeholders (December 22, December 23, 2005) and iii) the resolution of outstanding issues and the issuance of the final validation report and opinion (October 2005 to September 2006). The validation raised request for clarification and for whose resolution upon TUV Rheinland’s request, additional information was submitted to TUV Rheinland and the CDM-PDD was revised and resubmitted for validation.

The project participant is Sterlite Industries India Limited (SIIL), and has received a confirmation from the Designated National Authority (DNA) of India that the project activity assists in achieving sustainable development. There is no involvement of Official Development Assistance in the project activity. No participating Annex I Party has yet been identified.

The project activity engages in the recovery of waste gas heat energy from ISA copper smelter furnace to generate the steam by a Waste Heat Recovery Boiler (WHRB). Supplementary heat energy is added through FO fired super heater to increase the steam pressure up to 66 bar. The steam at 45 TPH flow rate and 66 bar pressure leads to 11.2 MW TG set for electricity generation. Generated electricity is consumed in house. As per Revised Draft CDM PDD (September 2006) the electricity generated is partly substituting the power generation from combination of LSHS based CPP of SIIL, power supply from coal based CPP of MALCO and electricity supply from state grid. The selected baseline is economically most attractive option as per guidance of selection of baseline of ACM 0004/Version 02. The selected baseline is also having the lowest emission factor of the credible and realistic alternatives to the project emission and hence, it is conservative.

The project activity applies the “approved consolidated baseline methodology for waste gas and/or heat for power generation” (ACM0004/Version 02). The baseline methodology has been correctly applied and the assumptions made for the selection of the baseline scenario are sound. It is sufficiently demonstrated that the project activity is not a likely baseline scenario and that the emissions reductions attributable to the project activity are additional to any that would occur in the absence of the project activity.

The project activity is expected to reduce the volume of CO₂e emissions compared to the emissions that would occur in the baseline scenario and very likely to result in a total emission reductions of 22,473 tCO₂e per year over its fixed 10 (ten) years crediting period.

The monitoring plan and supporting documents sufficiently specify the monitoring requirements of the main project indicators and the likeliness to achieve the estimated amount of emission reduction.

The project activity is not anticipated to have an environmental impact within and outside the project boundary and the necessary norms to meet the environmental obligations in context to the project

activity have been declared to relevant Indian regulators.

In summary, it is TUV Rheinland's opinion that the project, as described in the revised project design document of September 2006, meets all relevant UNFCCC requirements for the CDM and correctly applies the approved consolidated baseline and monitoring methodology ACM0004/Version 02. Hence, TUV Rheinland requests the registration of the "Power Generation from the proposed 11.2 MW waste heat recovery boiler at ISA smelt furnace of the Copper Smelter, Sterlite Industries India Limited, Tuticorin " at SILL as a CDM project activity.

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

By submitting this validation report, the DOE confirms that all validation requirements are met.

Name of authorized officer signing for the DOE

Dr. Manfred Brinkmann

Date and signature for the DOE

October 02, 2006

M. Brinkmann

Continued on Form F-CDM-REG by UNFCCC secretariat

Date when the form is received at UNFCCC secretariat

Date at which the registration fee has been received

Date at which registration shall be deemed final

Date of request for review, if applicable

Date and number of registration

Date

Number