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	SGS United Kingdom Ltd.
Title of the proposed CDM project activity (Section A.2 of the attached CDM-PDD) submitted for registration	Chambal Power Limited's (CPL) proposed 7.5 MW biomass based power project at Rangpur, Kota District, Rajasthan, India
Project participants (Name(s))	Chambal Power Limited (CPL)
Sector in which project activity falls	1 Energy industries (renewable - / non-renewable sources)
Is the proposed project activity a small-scale activity?	Yes / ~~No~~ *(underline as applicable)*

Section 2: Validation report	
List of documents to be attached to this validation report (please check mark)*:*	

☒ The CDM-PDD of the project activity

☒ 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

☒ 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

☐ (Attach a list of all Parties involved and attach the approval (in alphabetical order))

☒ Other documents, including any validation protocol used in the validation

☒ (comprehensive list of documents attached clearly referenced)

☒ List of persons interviewed by DOE validation team during the validation process

☒ Any other documents. Please specify.

☐ Information on when and how the above validation report is made publicly available.

☐ Banking information on the payment of the non-reimbursable registration fee

☒ 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)**

Description of the proposed CDM project activity

Chambal Power Limited (CPL) is a public limited company set up for the purpose of implementing projects for generation and sale of electric power and was incorporated on 27th May 1997. CPL is implementing a 7.5 MW biomass based power plant near village Rangpur, District Kota in Rajasthan State of India.

Project activity is categorized in category 1 – energy Industries (Main Category: Type I Renewable Energy Power project, Sub-category: Sub Category: D – Renewable Electricity Generation for a Grid, (Biomass based Power Generation Project).

The baseline and emission reduction calculations from the project would therefore be based on paragraph 7 of I.D of appendix B. The monitoring methodology would be based on guidance provided in paragraph 9 of I.D of appendix B.

Starting date of project activity is 01/03/2006 and crediting period over 7years. Total estimated emission reductions will be 352291 t CO_2 eq. over crediting period.

Baseline Scenario:
Under the baseline scenario the electricity generated by the project would have been generated by the current generation mix of the grid.

With-project scenario:
The proposed power plant will use eco-friendly sustainable resources, mustard and Soya husk and stalks, corncobs, bagasse and other available agricultural wastes as fuel. CPL 's project will generate 7.5 MW power and will export about 90% to Rajasthan Rajya Vidyut Prasaran Nigam Limited (RRVPNL) with only a small part (around 700 kW) used for meeting its auxiliary power needs.

Leakage:
No leakages as there is no transfer of equipment either and or to CPL.

Environmental and social impacts:
During construction phase: air & noise pollution etc.

During operational and maintenance phase: No ecological impacts are envisaged, as the wastewaters from the power plant will be treated appropriately before final disposal. The solid wastes generated from the power plant are the dry fly ash and wet bottom ash from grate. This ash will be used in brick manufacturing.

Human interest parameters such as increased job opportunities at the facility etc. can be observed.

Scope
The scope of the validation is the independent and objective review of the project design document, the baseline study and monitoring plan and other relevant documents of the

Chambal Power. The information in these documents is reviewed against the criteria defined in the Marrakech Accords (Decision 17) and the Kyoto Protocol (Article 12) and subsequent guidance from the CDM Executive Board.

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.

Overview of documentation that has been reviewed and names of persons that have been interviewed as part of the validation, *please refer to Annex1, 2, 3, 5…and Annex 4 for the list of the persons interviewed.*

DOE Validation team

Name	**Role**
Marco van der Linden (SGS Netherlands)	Team Leader
Martin Beckmann (SGS Germany) and Shivananda Shetty (SGS India)	Lead assessor
Syed Khursheed Zaidi (SGS India)	Assessor
Irma Lubrecht (SGS Netherlands)	Technical Reviewer

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.**

Review of CDM-PDD and additional documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

In general, a site visit might be required to verify assumptions in the baseline. Sometimes additional information is required to complete the validation, which may be obtained through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country).

In case of this project, a site visit has been conducted and the results of this visit are summarized in Annex 7 (Local Assessor Checklist), and Annex 4 (List of persons interviewed during site visit) are attached to this report. All other supporting documents required closing out CAR / NIR should bear L Annex followed by the particular number 1, 2, 3… where L stands for Local (documentary evidence collected during site visit).

Assessment against CDM requirements

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements are linked to checklist questions the project should meet.	*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 (**Y**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **New Information Request (NIR)** is used when the validation team has identified a need for further clarification.*

The completed validation protocol (AU4) for this project is attached as *Annex 5* to this report.

This project is developed as a small scale CDM project.

Report of findings and use of type of findings.

As an outcome of the validation process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **New Information Request (NIR)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR).** A CAR is issued, where:

I. mistakes have been made with a direct influence on project results;

II. validation protocol requirements have not been met; or

III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the

assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may lead to a CAR.

Observations may also be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form. In this form, the Project Developer is given the opportunity to "close" outstanding CAR s and respond to NIR s and Observations. Final version with comments of project developer and final conclusion by Lead Assessor is given in Annex 6 (UK findings).

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)**

In accordance with the CDM modalities and procedures, the project design document of this proposed CDM project activity has been made publicly available during 14/09/2005 to 13/10/2005 and comments have been invited from Parties, stakeholders and UNFCCC accredited non-governmental organizations. No comments were received on this project. This process is described in Annex 1 (Report On Comments) to this report which is available as a separate document.

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 meet. 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**

Participation requirements

NIR (01) was raised to clarify if an Annex 1 Party was involved but it was clarified that the CPL has not identified any Annex 1 country at present but will take a decision soon after the registration of the project. The project will certainly help Annex 1 party in meeting their limits and therefore NIR 1 was closed out.

The host Party for this project is India. India has ratified the Kyoto protocol on August 26th, 2002. Initially, no Letter of Approval was provided and a CAR (01) was raised. A scanned copy of the Letter of approval has been submitted to SGS and the original has been shown to SGS during site validation, the same is enclosed as Annex 2 (Written Approval of Indian Designated National Authority, through their letter: F. No. 4/4/2005-CCC, dated 23rd March 2005). CAR 1 was closed out.

CAR (02) was raised to emphasise the compliance in accordance to the Guidelines for completing CDM SSC PDDs. The required correction has been incorporated in the revised PDD and provided to the validator. The CAR (02) was closed out after reviewing the document.

NIR (02) was raised to seek clarification on Public Funding / Official Development Assistance (ODA) by CPL. No public funding was sought / availed by CPL for this project. Balance sheet verified by the local assessor and scan copy enclosed as L Annex 3, NIR 2 was closed out.

CPL will be using the biomass for generation of power; NIR (03) was raised to ascertain the sufficient availability of biomass through the feasibility reports and / or through reliable source which can be verified in an objective manner such as state government reports, the guarantee of delivery of biomass and contractual agreements with the suppliers for supply of biomass to CPL. The CPL has provided sufficient documentary evidence to the validator to close out NIR, (refer L Annex 4 complete set). NIR 3 was closed out

During the review of the PDD, it was observed that few of the 8 web links mentioned in the PDD have been upgraded and it was difficult to obtain the relevant information with out a URL link as most of the referred data taken was from 2003. CAR (03) was raised and the CPL was asked to provide URL link or data which can be verified. Data sources and relevant baseline information were obtained by the assessor during site visit and CAR 3 was closed out.

NIR (04) was raised, to know what would happen if biomass is used as fuel or fertilizer this could lead to leakages, also define the zero emission concept. CPL stated that the project will be using biomass as a fuel which otherwise would have been left open in uncontrolled conditions leading to methane emissions or otherwise would have been burnt out to clear the fields for the next crop, which could again lead to carbon dioxide emissions. CPL utilization of biomass would lead to zero net emissions which otherwise would have generated more or equal amount of emissions if not utilized for power generation. Local assessor agrees with CPL point of view and confirmed that burning biomass is a common practice in India to deal with biomass NIR 4 was closed out.

NIR (05) was raised to seek clarification from CPL on of retention of biomass as uncontrolled storage for longer duration may lead to methane emissions. CPL clarified that in no case the retention will exceed 3 months period and will be stored under controlled condition. NIR was closed out.

NIR (06) was raised for obtaining more information on leakage arising from biomass transportation. CPL mentioned in the PDD that 70% of the biomass will be collected within 5 km and no transport more than 15 km distance. These emissions may be less than coal transportation emissions if being used instead of biomass fuel that will certainly be brought to the plant from a greater distance. The CPL shown the assessor the feasibility report of available biomass which reveals that sufficient quantity of biomass is available and in no case the distance will be more than 50 km, which is far less than the distance of any coal fields in the region; regarding the Training and competency of staff, whether the staff is able to carry out sampling and data processing in correct way CPL provided the availability of monitoring procedures (L- Annex 7) NIR 6 is closed out.

Baseline and monitoring methodology

NIR (07) is raised to clarify further the rated capacity of the boiler, as it was not clear in the PDD, Co-firing coal is mentioned on page 4 in the PDD as a possibility This was very significant from the eligibility criteria for the projects using I. D and the 15 MW thresholds are based on installed, rated capacity of the boiler /-installation. The rating can vary depending on fuels used. By co-firing coal the output of the boiler might increase 45 $MW_{thermal}$ depending how it is designed. CPL will not use coal; however, provisions have been made in case of exigencies situations like drought etc when biomass will not be available. Corrections have been incorporated in the PDD and CPL has on line weighing system to measure coal and laboratory to analyse carbon content and calorific value. The verifier needs to make necessary corrections for the amount of coal if used any. NIR 7 is closed out

NIR (08) was raised to seek clarification on power generation data for Build margin calculations. CPL has revised their emission reduction calculations using Northern regional grid instead of earlier used Rajasthan State grid. The revised excel sheet showing the ER calculations along with the supporting data have been provided by CPL (Refer L Annex 2). NIR 8 was closed out.

NIR (09) was raised on EXCEL-Spreadsheets “CER_Calculations_CPL_Val_17Aug 05” the

supporting spreadsheets were not very transparent and retraceable also advised to add a column in supportive sheet 1 EXCEL Sheet "CER_Calculations_CPL_Val_17Aug 05" with the fuel (coal, gas etc.) used. Add this table in PDD under E 1.2.4 as well, and how CPL has arrived the power export to RRVPNL (kWh) = 53220000 kWH been calculated? CPL has made out the corrections accordingly and PDD has been revised and enclosed to this document using Northern regional grid instead of state grid. NIR was closed.

For assessing the leakages from the project activity in accordance with Appendix B article 8, NIR (10) was raised to seek clarification whether any energy generation equipment is transferred from another project activity or if the existing equipment is transferred to another activity, leakage is to be considered. It is a newly establishing industry and therefore no possibility of transfer of equipment from CPL is envisaged. There is no transfer of equipment from any other industry to CPL and therefore NIR 10 was closed out.

Additionality

The project has adopted the investment barrier followed by technological barriers to justify the project additionality as per Attachment A to Appendix B. The project participant wishes to have renewable crediting period for 7 years, starting from 01 Mar 06.

CAR (04) was raised in order to get all related documents on which basis the project was shown additional. The project participant (CPL) has provided evidence that the incentive from the CDM was considered in the decision to proceed with the project activity. The minutes of Board meeting (MOM) was reviewed for project conception date and CDM consideration. It was found that the relevant meeting was held on 22 June 2002. The MOM showed the carbon credit was taken into account in the meeting (L Annex 6).

The additionality of the project was determined using the investment barrier and operational barrier based on other alternatives available at the site. The alternative instead of biomass based power project could have been coal based which would not have faced any technological barrier due to proven technology and financially reliable as coal prices are consistent. Where as biomass based power station is always dependent upon the availability of biomass which may vary from season to season, with changes in crop patterns in the region and price fluctuations since it is not an organized sector.

The project has faced financial barriers due to high upfront cost of high pressure configuration system, lack of easy and long-term financing, project cash flow etc. The bankers were not convinced regarding the viability of the biomass based power project. Higher investment was also required for project activity in comparison to coal.

There is no price stabilization of biomass in near by areas. This is very difficult for project developer to develop adequate infrastructure for fuel collection system. The sufficient evidences have been made available to validator during site visit to support project barriers.

Based on the assumptions made in the PDD, and findings above, it was concluded that the project activity is not a likely baseline scenario and the CAR was closed out.

Monitoring Methodology

NIR (11) is raised to evaluate quantity of fossil fuel and to ascertain that the plant will run on 100% biomass and if fossil fuel is being used it should be accounted. CPL has made clear provisions in the PDD under section D.3; supported by monitoring procedures to be followed (as given in L Annex 7). In case of exigencies only they will be using coal, the online measurement will be carried out for quantity, usage and the testing of coal for Calorific value and carbon content will be carried out at CPL laboratory. NIR 11 is closed out.

NIR (12) was raised as there was no clarity on the Quality Control and Quality Assurance (QA & QC) issues in the PDD, as it is not sufficient to mention that monitoring procedures are as per ISO9001 system. Information was provided to local assessor and documented monitoring procedures are put in place, (L Annex 7). NIR 12 was closed out.

Monitoring Plan

Since construction already started and operation started in October 2005 the CPL should have a proper identification of monitoring parameters and monitoring plan. It should also contain information on equipment in use with accuracy. NIR (13) was raised. The CPL provided documents supporting their monitoring reporting procedures with responsibilities matrix (L Annex 7). However, the metering equipments in use shall be of standard branded companies acceptable to Rajasthan Rajya Vidyut Prasaran Nigam Limited (RRVPNL), NIR 13 was closed.

NIR (14) was raised to seek more clarifications on benefits arising from this project activity and also ensure that indicators for sustainable environment will be monitored. NIR 14 was closed out as CPL possesses all environmental clearances necessary including Host country approval as conformity that the project meets Environmental and suitability criteria (Annex 2, L Annex 10).

NIR (15) was raised to further ensure that the project should take care of the sustainable development in accordance to national priorities. NIR 15 was closed out as CPL has obtained Host country approval through the designated national authority (Annex 2), in compliance to Environmental & sustainable issues as set for national priorities. CPL also possesses Environmental clearances & relevant consents to operate plant under Air & water act 1981 & 1974 from State Pollution Control Board in accordance to local regulations (http://envfor.nic.in/legis/legis.html) L Annex 10

CAR (05) was raised to define the management structure and responsibilities were not clearly defined in the PDD. CAR 5 was closed out as CPL revised the PDD and had incorporated it under section D. 5.

CAR (06) was raised to define authorities and responsibilities for registration, measurement, monitoring and reporting. CPL has addressed these issues in the revised PDD under section

D. 5 and provided the assessor the supported documents defining responsibilities, procedures for monitoring and measurement though L Annex 7. CAR 6 was closed out.

NIR (16) was raised in view of lack of information about the training of personnel for monitoring. CPL has documentary evidence to support that they have training procedures in place and have addressed it through the L Annex 7. NIR 16 was closed out.

NIR (17) was raised to seek more information on procedures availability for emergency preparedness. CPL has such plans in place and has documented it under L Annex 7. NIR 17 was closed out.

NIR (18) was raised as there were no procedures identified for calibration of monitoring equipment and maintenance as they are important for QA and QC. CPL has addressed these issues under L Annex 7, NIR 18 was closed out.

NIR (19) was raised to address procedures identified for monitoring data adjustments, uncertainties, procedures for review of reports, internal GHG compliance audit, data archiving and record maintenance for internal & external verifications and corrective actions. CPL is an ISO certified company and has supportive documents addressing these issue through procedures mentioned under L Annex 7. NIR 19 was closed out on review of L Annex 7 document.

Environmental Impacts

As the investment is more than the stipulated limit, an EIA study was required for the industry and therefore NIR (20) was raised. CPL carried out an EIA from the competent agency and has been accorded environmental clearances from competent regulatory authority (Rajasthan State Pollution control Board). The evidences such as EIA report was seen and consents issued by state pollution control board has been received (Refer L Annex 9) NIR 20 was closed out.

NIR (21) was raised to seek clarification that how the industry will take care of the environmental impacts arising from the project activity and its compliance through Environmental Management Plan (EMP). CPL has carried out EIA studies through competent agency supported by EMP. The main impacts were identified during construction activity and CPL has followed it up during the construction phase. The details of Environmental Management Plan are enclosed as L Annex 10. NIR was closed out.

Comments by local stakeholders

The local stakeholder consultation process is described in the PDD. NIR (22) was raised to ask for clarifications how local stake holder consultation was carried out and who other than immediate neighbours have been invited for local stakeholder consultation. CPL has carried out an EIA for their project and as per the regulatory compliance; a public meeting is called upon by District Magistrate through advertisement and invitation copies displayed at District Magistrate's office. The local populace is invited to participate in the public meeting and can comment freely. The accord of clearance are indicate of the successful completion of public meeting / with out any adverse comment otherwise the project may have not accorded approvals from Rajasthan state pollution control board. CPL has provided public meeting comments to the assessor during site visit (L Annex 11, comprises of letters received from locals authorities, HCA approval letter and consent to operate CPL as per the regulatory authority approval). The NIR 22 was closed out.

Other requirements

NIR (23) was raised to seek clarification to ensure that project design engineering reflect good engineering practices. From the records of CPL, it was observed that they hired reputed consultant for design of their power plant, which reflects good engineering practices. NIR 23 was closed out.

The start date as mention in the PDD, the date of construction as March 2004 and completion date of project as October 2005, whereas the commercial start date for issue of ER is March 1st 2006. It was not clear why the ER start date is decided March 1st 2006, instead of finish of October or November 2005, NIR (24) was raised to obtain evidence of the starting date, proof of CDM incentive consideration. CPL provided evidential proof (L Annex 6), NIR 24 was closed out.

Additional Requirement for SSC Project

NIR (25) was raised to ensure that good monitoring plan and practice should be followed by CPL. The CPL has prepared the supporting documents that they will follow good monitoring and practices (L Annex 7). NIR 25 was closed out

CAR (07) was issued due to non conformance of the guidelines set for PDD preparations such deviations were excess number of pages than specified, font size, italics, shaded tables, section D.6 chart above the headlines, Table 1.3 with showing figures with out dimensions. CPL provided the revised PDD with corrections. CAR 7 was closed out.

CAR (08) was raised on crediting period Crediting periods in Enclosure A of CER_Calculations_CPL_Val_17Aug 05 is not consistent with PDD. Whilst the enclosure starts with credit period 2005 – 2006 the PDD starts with credit period 2006 – 2007.

Please check and state in enclosure consistently to PDD. Not yet closed out

Final comments and validation opinion

SGS has performed a validation of Chambal Power Limited (CPL) Proposed 7.5 MW Biomass Based Power Project. The validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

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

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

The project will utilize surplus available biomass for generation of electricity and supply to grid, the project results in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the present 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. If the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

The validation is based on the information made available to SGS and the engagement conditions detailed in the report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence SGS can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

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

By submitting this validation report, the DOE confirms that all validation requirements are met. Name of authorized officer signing for the DOE	Marco van der Linden
Date and signature for the DOE	28-03-2006 

Section below to be filled 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