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 SÜD Group
Title of the proposed CDM project activity (Section A.2 of the attached CDM-PDD) submitted for registration	LOHGARH, CHAKBHAI AND SIDHANA MINI HYDROELECTRIC PROJECTS
Project participants (Name(s))	Aqua Power Limited, India
Sector in which project activity falls	Energy industries (1)
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):	

X The CDM-PDD of the project activity

X 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. This explanation is included in the Validation Report No. 707453, rev. 02;

X 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:

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

- Validation Report (Validation Report No. 707453, rev. 02) including a validation protocol, information reference list and and a list of persons interviewed by DOE validation team during the validation process.

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

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

X 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)**

The purpose of the project is to generate electricity by utilizing water flowing through the existing canal system. Lohgarh with a total installed capacity of 2.0 MW, Chakbhai with 2 MW and Sidhana with 1.2 MW will generate electricity and sell it to the Punjab State Electricity Board through Power Purchase Agreement Contract.

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.

All documentation that has been reiviewed and all persons interviewed have as part of the validation are listed in annex 2 of the validation report (Validation Report No. 707453, rev. 02).

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
- Hydro Power Plants
- Grid connected power installations
- 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.

Klaus Nürnberger is head of the division energy certification at TÜV Industrie Service GmbH TÜV SÜD Group. In his position he is responsible for the implementation of verification and certifications processes for electricity production based on renewable sources. The division has assessed more than 600 plants and sites all over Europe. He has received extensive training in the CDM and JI validation processes and participated already in several CDM and JI project assessments.

Sunil Kathuria is a electrical engineer and works as a lead auditor for quality and environmental management systems (according to ISO 9001 and ISO 14001) at TÜV South Asia TÜV SÜD Group. He is based in New Delhi. In his position he is responsible for the auditing of management systems

and CDM projects. He has received extensive training in the CDM validation process and participated already in several 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 (RUMBERG/ KATHURIA)
- Skills in environmental auditing (ISO 14000, EMAS) (ALL)
- Quality assurance (RUMBERG / KATHURIA)
- Hydro Power Plants (ALL)
- Grid connected power installations (ALL)
- Monitoring concepts (ALL)
- Political, economical and technical random conditions in host country (KATHURIA)

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

For further details please refer to the “Introduction” section of the validation report (Validation Report No. 707453, rev. 02).

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 consists of the following three phases:

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

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 from of an on site audit has taken place. Afterwards the client decided to revise the PDD according the clarification requests indicated in the audit process. The final PDD version submitted in September 2005, which has undergone a renewed document review, serves as the basis for the assessment presented herewith. A revised final PDD version submitted in March 2006 finally responded to the open issue regarding the determination of the baseline emission factor as discussed in chapter 3.2 of this report.
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 completed validation protocol is enclosed in Annex 1 to the validation report.

Findings established during validation can either be seen as a non fullfillment of validation criteria or where a risk to the fulfilment of the project objectives is identified. Such findings are termed Corrective Action request. The term "Clarification request" is used when the validation team has identified a need for further clarification.

The Corrective Action Requests and Clarification Requests raised by TÜV SÜD were resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are summarised in chapter 3 of the validation report and documented in more detail in the validation protocol in annex 1 to the validation report. The validation of the project resulted in four Corrective Action Requests and two Clarification Requests.

For further details please refer to the "Methodology" section of the validation report (Validation No. 707453, rev. 02).

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)**

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.

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**

TÜV SÜD has performed a validation of the "Lohgarh, Chakbhai and Sidhana Mini Hydroelectric Projects" project, 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 fulfillment 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 avoiding GHG emissions from fossil fired power plants, the project results in reductions of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the barrier due to prevailing practice 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 annual emission reductions of 25 347 tonnes CO_{2e} over a crediting period of ten years – 253 467 tonnes CO_{2e} in total - 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.

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	Michael Rumberg
Date and signature for the DOE	March 17, 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