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	Cerradinho Bagasse Cogeneration Project (CBCP)
Project participants (Name(s))	▪ Usina Cerradinho Açúcar e Álcool S/A (Cerradinho). ▪ Econergy Brasil Ltda.,
Sector in which project activity falls	1-Energy industries (renewable - / non-renewable sources)
Is the proposed project activity a small-scale activity?	No / Yes *(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. 209029, REV. 03;
❑	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. 209029, REV. 03), including a validation protocol, an information reference list and a list of persons interviewed by DOE validation team during the validation process.
❑	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)**

This project activity consists of increasing the efficiency in the bagasse (a renewable fuel source, residue from sugarcane processing) cogeneration facility at **Cerradinho**, a Brazilian sugar mill. With the implementation of this project, the mill is able to sell electricity to the national grid, avoiding the dispatch of same amount of energy produced by fossil-fuelled thermal plants to that grid. By that, the initiative avoids CO_2 emissions and contributes to the regional and national sustainable development.

By investing to increase in steam efficiency in the sugar and alcohol production and increase in the efficiency of burning the bagasse (more efficient boilers), Cerrandinho generates surplus steam and uses it exclusively for electricity production (through turbo-generators).

Using steam-Rankine cycle as the basic technology of its cogeneration system, for achieving an increasing amount of surplus electricity to be generated, Cerradinho began its efforts in two phases, which are:

Phase 1 (2002): Installation of a high efficiency 62 kgf/cm² pressure boiler providing 150 ton of steam per hour at 450 ºC therefore consuming less bagasse per ton of steam generated. Installed also a new backpressure 25 MW turbo-generator; CBCP built up also a new powerhouse, a sub-station and a transmission line, increasing the efficiency to exploit biomass energy significantly. A 1,2MW turbo-generator was deactivated when 2002's harvest season ends.

For this first phase there is an intention to annually supply the grid with renewable energy around the amount of 52,000MWh during the harvest season of 2003/2004. For the local utility company it is an advantage to buy energy produced by a sugar mill, as the base load for the utilities in Brazil is supported mainly through hydro generation, and the sugarcane crop season is during the dry period. Eletropaulo is the utility that has signed a ten years contract with Cerradinho.

Phase 2 (2006): By the year 2006, the CBCP is considering to continue the investment from the year 2002, to reach a higher installed capacity and efficiency for exploiting biomass through the acquisition of an additional 30MW condensing type, with steam extraction (21kgf/cm²), turbo generator and another 62 kgf/cm² pressure boiler, operating at 480ºC producing 200 tons of steam per hour.

The two old boilers that operate at 21 kgf/cm² are going to be deactivated and the 4MW generator that was installed before Phase 1 will be put into standby position.

The project is located in the municipality of Catanduva is located in northeastern State of São Paulo, about 378 kilometers (km) far from the state capital, São Paulo, in the agricultural region of Catanduva.

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 an early draft PDD in 2002. 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 established regulations, an approved methodology and the CARs and CRs indicated in the first audit process also has taken into account new developments on the regulatory side (as for example the new PDD format). That revised PDD version was submitted for publishing in the global stakeholder process in February 2004. It serves as the basis for the assessment presented herewith. In September 2005 a revised final PDD has been submitted in which the all open issues and clarification requests have been solved by the project developer by submitting additional or corrected information. Those changes

are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM to achieve a reduction of anthropogenic GHG emissions by sources and to contribute to sustainable development. Hence no repetition of the public stakeholder process has taken place.
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 cogeneration and the use of biomass
- 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":
The validation team was consisting of the following two experts:

Mr. Werner Betzenbichler	(project manager, GhG lead auditor)	TÜV SÜD
Mr. Markus Knödlseder	(GHG auditor)	TÜV SÜD
Mr. Wilson Tomao	(local expert, ghg auditor)	

The audit team covers the above mentioned requirements as follows:

- Knowledge of Kyoto Protocol and the Marrakech Accords (Betzenbichler/Knödlseder)
- Environmental and Social Impact Assessment (Betzenbichler/ Tomao)
- Skills in environmental auditing (Betzenbichler/ Tomao)
- Quality assurance (Betzenbichler/ Tomao)
- Technical aspects (Betzenbichler/Knödlseder)
- Monitoring concepts (Betzenbichler/Knödlseder)
- Political, economical and technical random conditions in host country (Tomao)

In the period of Feb 17th 2003 – May 30th, 2005, TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the first document review. Representatives of

- Management of Cerradinho, State of Sao Paulo, Brazil, on Feb. 19th, 2003
- Econergy International Corporation in Sao Paulo, State of Sao Paulo, Brazil, on Feb. 17th 2003
- Operacão Nacional do Sistema (ONS), the national dispatcher of Brazilian grid in Brasilia, State of Brasilia, Brazil, on 30th May 2005

For further details, please, refer to the "Introduction" section of the validation report (Validation *Report No. 209029, REV. 03*).

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 of the project consists of the following three phases:

- Desk review

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

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.

Findings established during validation can either be seen as non fulfilment of validation criteria or where a risk to the fulfilment of the project objectives is identified. Such findings are termed Corrective Action Requests. 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 communications 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 (209029, REV. 03) and documented in more detail in the validation protocol in Appendix A to the report. The validation of the project resulted in no Corrective Action Requests and four Clarification Requests.
For further details, please, refer to the "Methodology" section of the validation report (Validation Report No. 209029, REV. 03).

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)**

TÜV SÜD published the project documents on UNFCCC website and on its own website (http://www.netinform.de). The PDD was open for commenting from 17th of February 2005 for 30 days.
One comment was 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 the Validation of the Cerradinho Bagasse Cogeneration Project, Brazil. 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.
In summary, it is TÜV SÜD´s opinion that CBCP, as described in the revised project design document of September 2005, meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board and that the project furthermore meets all relevant host country criteria and correctly applies the baseline and monitoring methodology AM0015

Hence, TÜV SÜD will recommend the CBCP for registration as CDM project activity by the CDM Executive Board.
Prior to the submission of this validation report to the CDM Executive Board, TÜV SÜD will have to receive the written approval of the DNA of involved parties, including confirmation by the DNA of Brazil that the project assists in achieving sustainable development.

By displacing fossil fuel-based electricity in principal with electricity generated from a renewable source, the project results in reductions of CO_2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the investment and technological 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 reductions of **226,204** tonnes CO_{2e} over a crediting period of seven years, resulting in a calculated annual average of 32,315 tonnes CO_{2e}, represent 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	Markus Knödlseder
Date and signature for the DOE	20/09/2005

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