



### 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

<b>Name of the designated operational entity (DOE) submitting this form</b>	TÜV Industrie Service GmbH TÜV SÜD Group
<b>Title of the proposed CDM project activity (Section A.2 of the attached CDM-PDD) submitted for registration</b>	Equipav Bagasse Cogeneration Project (EBCP)
<b>Project participants (Name(s))</b>	<ul style="list-style-type: none"> <li>▪ Equipav S.A. Açúcar e Álcool – Equipav</li> <li>▪ Econergy Brasil Ltda., a Brazilian private company</li> </ul>
<b>Sector in which project activity falls</b>	1-Energy industries (renewable - / non-renewable sources)
<b>Is the proposed project activity a small-scale activity?</b>	<u>No</u> / Yes ( <i>underline as applicable</i> )

#### Section 2: Validation report

<b>List of documents to be attached to this validation report (please check mark):</b>	
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. 219107 REV. 2;
<input 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:
X	Other documents, including any validation protocol used in the validation
○	Validation Report (Validation Report No. 219107 REV. 2), including a validation protocol, an information reference list and a list of persons interviewed by DOE validation team during the validation process.
<input 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 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)**

This project activity consists of increasing the efficiency in the bagasse (a renewable fuel source, residue from sugarcane processing) cogeneration facility at Equipav S. A. – Açúcar e Álcool (Equipav), 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<sub>2</sub> 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), Equipav 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, Equipav began its efforts:

EBCP project activity involves a single phase, implemented in 2002, which consisted in improving energy efficiency in the milling process in order to better exploit the bagasse energy content and be able to generate more electricity through new installed capacity. Before EBCP, Equipav was producing steam at a flow rate of 300 t/h, with a pressure of 21 bar at 300 °C; after the improvements in the process, this rate was increased to the range between 300 and 340 t/h with 65 bar at 480 °C. The mill expanded its total installed power generation capacity from 8 MW to 60,5 MW, installing two 65 bar boilers plus other improvements in the energy efficiency at the mill. A 8 MW turbo generator will be on stand by and will be used only at extreme circumstances of plant necessities.

A power purchase agreement (PPA) was signed between Equipav and Eletropaulo, one of the biggest electricity distributors in Brazil, valid from 2002 to 2011.

The project is located in the municipality of Promissão is located mid-east in the State of São Paulo, 460 km away from the state capital, in Lins' Administrative Region.

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 July 2005. 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. That 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 Knödlseider (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/Knödlseider)
- Environmental and Social Impact Assessment (Betzenbichler/ Tomao)
- Skills in environmental auditing (Betzenbichler/ Tomao)
- Quality assurance (Betzenbichler/ Tomao)
- Technical aspects (Betzenbichler/Knödlseider)
- Monitoring concepts (Betzenbichler/Knödlseider)
- Political, economical and technical random conditions in host country (Tomao)

In the period of Feb. 17<sup>th</sup> 2003 – Sept 16<sup>th</sup>, 2005, TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the first document review. Representatives of

- Equipav, State of Sao Paulo, Brazil, on Feb. 17<sup>th</sup>, 2003
- Econergy International Corporation in Sao Paulo, State of Sao Paulo, Brazil, on Feb. 19<sup>th</sup> 2003
- Operação Nacional do Sistema (ONS), the national dispatcher of Brazilian grid in Brasilia, State of Brasilia, Brazil, on 30<sup>th</sup> May 2005
- Mr. Jose Carlos, management director of Companhia Açucareira Vale do Rosário, performed on September 16th, 2005
- Mr. Ricardo Santos, management director of Crystalsev, performed on September 16th, 2005

were interviewed.

For further details, please, refer to the “Introduction” section of the validation report (*Validation Report No. 219107 REV. 2*).

### 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 (219107 REV. 2) and documented in more detail in the validation protocol in Appendix A to the report. The validation of the project resulted in three Corrective Action Requests and one Clarification Requests.

For further details, please, refer to the “Methodology” section of the validation report (Validation Report No. 219107 REV. 2).

**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 27th of July 2005 for 30 days. One comment was received and considered.

For further details, please, refer to the “Methodology” section of the validation report (Validation Report No. 219107 REV. 2).

**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 Equipav S/A – Açúcar e Alcool 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 the “Equipav Bagasse Cogeneration Project (EBCP)”, 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 EBCP 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<sub>2</sub> 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 207,189 tonnes CO<sub>2e</sub> over a crediting period of seven years, resulting in a calculated annual average of 29,598 tonnes CO<sub>2e</sub>, 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 Knödseder

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