



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	Det Norske Veritas Certification Ltd. (DNV)
Title of the proposed CDM project activity (Section A.2 of the attached CDM-PDD) submitted for registration	Cachoeira Encoberta and Triunfo Small Hydroelectric Power Plants (the Brascan Energética Minas Gerais - BEMG- Project Activity)
Project participants (Name(s))	Brascan Energética S.A. (Brazil)
Sector in which project activity falls	Energy Industry, renewable sources
Is the proposed project activity a small-scale activity?	No.

Section 2: Validation report

List of documents to be attached to this validation report (please check mark):	
<ul style="list-style-type: none"> <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 (Note: Included in DNV's Validation Report (DNV report 2005-0647, rev. 01)); <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: <ul style="list-style-type: none"> ○ (Attach a list of all Parties involved and attach the approval(in alphabetic order)) <input checked="" type="checkbox"/> Other documents, including any validation protocol used in the validation. <ul style="list-style-type: none"> ○ DNV's Validation Report (DNV report 2005-0647, rev. 01), including a validation protocol and a list of person interviewed by DNV 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 allocation 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 “Cachoeira Encoberta and Triunfo Small Hydroelectric Power Plants - Brascan Energética Minas Gerais S.A (BEMG) Project Activity” includes two small hydropower run-of-river plants that supply electricity to the grid from renewable sources and thereby reduces greenhouse gas emissions. The project activity consists of 47.1 MW installed capacity divided into two hydroelectric power plants that deliver energy to the interconnected South-Southeast-Midwest grid (S-SE-CO):

- Cachoeira Encoberta Plant (Ormeo Junqueira Botelho) (22.7 MW) has been operational since 01 January 2004. Its turbine system consists of two 11.35 MW units, and a generator of 13.5 MVA, 450 rpm at 6.9 kV. Its reservoir size is 0.294 km²;
- Triunfo (Ivan Botelho III) (24.4 MW) has been operational since 30 October 2004. Its turbine system consists of two 12.2 MW units, and a generator of 13.5 MVA, 450 rpm at 6.9 kV. Its reservoir size is 1.39 km².

Emission reductions are claimed from displacement of fossil-fuel based grid electricity with electricity generated by the hydroelectric power plants and supplied to the grid. The estimated amount of GHG reduction from the project is 335 059 tCO₂e during the first crediting period (7 years), resulting in estimated average annual emission reductions of 47 865 tCO₂e.

The original project design document (PDD) for this project, titled “Nova Sinceridade, Palestina, Cachoeira Encoberta and Triunfo Small Hydroelectric Power Plants (the CatLeo Project Activity)”, also included the Nova Sinceridade (Benjamim Baptista) and Palestina (Ivan Botelho II) hydroelectric power plant and was proposed by CatLeo Energética S.A (CatLeo). In December 2004 the share control of the involved hydroelectric power plants was transferred to Brascan Energética Minas Gerais S.A. Consequently, Brascan changed the project design of the CatLeo Project activity and removed the Nova Sinceridade and Palestina hydroelectric power plants. The project name was in the revised PDD changed to “Cachoeira Encoberta and Triunfo Small Hydroelectric Power Plants - Brascan Energética Minas Gerais S.A (BEMG) Project Activity”. The Nova Sinceridade and Palestina hydroelectric plants were developed as separate small-scale CDM projects and presented in individual PDDs (“Palestina Small Hydroelectric Power Plant - Brascan Energética Minas Gerais S.A. (BEMG) Project Activity” and “Nova Sinceridade Small Hydroelectric Power Plant - Brascan Energética Minas Gerais S.A. (BEMG) Project Activity”).

The validation scope is an independent and objective review of the Project Design Document (PDD). The PDD was reviewed against Kyoto Protocol criteria for the CDM, the CDM modalities and procedures as agreed in the Marrakech Accords and relevant decision by the CDM Executive Board. The validation team has, based on the recommendation in the IETA/PCF Validation and Verification Manual, and employed a risk-based approach, focusing on the identification of significant risks for the project implementation and the generation of CERs.

The following documents were reviewed:

Ecoinvest: Project Design Document for the “Nova Sinceridade, Palestina, Cachoeira Encoberta and Triunfo Small Hydroelectric Power Plants (the CatLeo Project Activity)”. Version 1 of 23 March 2005

Ecoinvest: Project Design Document for the “Cachoeira Encoberta and Triunfo Small Hydroelectric Power Plants - Brascan Energética Minas Gerais S.A (BEMG) Project Activity”.

Version 5 of 23 September 2005.

Spreadsheet of Calculation of Combined Margin (ONS Emission Factor SSECO 2002-2004 v 2005-09-23).

CatLeo meeting report results 2001. Accessed in September 2005 on:

http://www.cataguazes.com.br/corporativo/relacao/relatorios/mensagens/cflcl/mensagem_2001_CFLCL.htm

Cat-Leo Energia S/A: Cataguazes Leopoldina Group: Cat-Leo Energia S/A, GFC: Version February 2003.

International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF): Validation and Verification Manual. <http://www.vvmanual.info>

Approved Consolidated Baseline Methodology ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources". Version 01 of 03 September 2004

Approved Consolidated Monitoring Methodology ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources". Version 01 of 03 September 2004

Bosi, M., A. Laurence, P. Maldonado, R. Schaeffer, A. F. Simoes, H. Winkler and J.-M. Lukamba: Road testing baselines for greenhouse gas mitigation projects in the electric power sector. OECD and IEA information paper, October 2002.

The following persons were interviewed:

Julien Dominic Dias – Brascan – Finance Superv

Osmar Orman Filho – Brascan – Operation Supervisor

Gilson A. Brunetto – Brascan – Maintenance Engineer

Carla Oberdiek – Brascan – Environment Manager

Andre Leal – Ecoinvest – Consultant

The validation team consisted of the following personnel:

Mr. Luis Filipe Tavares DNV Rio de Janeiro Team leader,

Ms. Cintia Dias DNV Rio de Janeiro CDM auditor

Mr. Vicente San Valero DNV Rio de Janeiro CDM auditor

Mr. Michael Lehmann DNV Oslo Energy sector expert/Technical reviewer

For further details, please refer to the "Introduction" and "References" Sections of DNV's Validation Report (DNV Report 2005-0647, rev. 01).

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 started in May 2005. The Validation consisted of the following three phases:

- i) a desk review of the project design documents;
- ii) follow-up interview with project stakeholders;
- iii) the resolution of outstanding issues and the issuance of the preliminary validation report and opinion.

The original and revised versions of the project design document (PDD) submitted by the project

participants were reviewed. Additional background documents related to the project design and the baseline were also consulted.

On 05 July 2005, DNV performed interviews with Brascan Energética Minas Gerais S.A. and Ecoinvest during the site visit of Control Center at Curitiba Municipality, to confirm and to resolve issues identified in the document review.

In order to ensure transparency, a validation protocol has been customized 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 validation the identified criteria.

Findings established during the validation can either be seen as a non-fulfilment of validation criteria or where a risk to the fulfilment of project objectives is identified. Such findings are termed Corrective Action Requests (CAR). The term Clarification may be used where additional information is needed to fully clarify an issue. The Corrective Action Requests and requests for Clarification raised by the validation team were resolved through communications with the project participants. To guarantee the transparency of the validation process, the concerns raised by DNV and the response provided by the project participants are documented in Table 3 of the Validation Protocol in Appendix A of DNV's Validation Report. (DNV report 2005-0647, rev. 01).

For further details, please refer to the "Methodology" Section of DNV's Validation Report (DNV Report 2005-0647, rev. 01) and the IETA/PCF Validation and Verification Manual (www.vvmanual.info).

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)

DNV published the original PDD of 23 March 2005 (also including the Nova Sinceridade and Palestina hydroelectric power plants) on the DNV Climate Change web site (<http://www.dnv.com/certification/ClimateChange>) and stakeholders were, through the UNFCCC CDM web site, invited to provide comments within a 30 days period from 01 May 2005 to 31 May 2005. One comment was received and made publicly available on DNV's Climate Change website.

The comment (in unedited form) and how DNV has taken due account of the comment received is given in the "Comments by Parties, stakeholders and NGOs" Section of DNV's Validation Report (DNV Report 2004-0165, rev. 03).

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**

Det Norske Veritas Certification Ltd. (DNV) has performed a validation of the “Cachoeira Encoberta and Triunfo Small Hydroelectric Power Plants - Brascan Energética Minas Gerais S.A (BEMG) Project Activity” at Minas Gerais State, Brazil. The validation was performed on the basis of UNFCCC criteria for CDM project activities and relevant Brazilian criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The project participant is Brascan Energética Minas Gerais S.A. of Brazil. The host Party Brazil meets all relevant participation requirements. No participating Annex I Party is yet identified.

The project is a renewable electricity generation project activity. The project consists of two run-of-river hydroelectric power plants with only small reservoirs. Each plant provides local electricity generation and distribution, providing site-specific reliability, transmission and distribution to the S-SE-CO Brazilian grid. The total installed capacity of the project is 47.1 MW.

By promoting renewable energy, the project is in line with the current sustainable development priorities of Brazil.

The project applies the approved consolidated baseline methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”. The baseline methodology has been applied correctly and the assumptions made for the selected baseline scenario are sound. It is sufficiently demonstrated that the project is not a likely baseline scenario and that emission reductions attributable to the project are additional to any that would occur in the absence of the project activity.

A combined margin emission coefficient of 0.2783 tCO₂e/MWh is calculated in accordance with ACM0002, i.e. the average of the approximate operating margin and the build margin. The determination of this combined margin emission coefficient is based on actual electricity generation data provided by the National Electricity System Operator (ONS) for the years 2002- 2004 for the South-Southeast-Midwest grid.


The monitoring methodology ACM0002 has been applied correctly. The monitoring plan sufficiently specifies the monitoring requirements of the main project indicators.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

Local stakeholder comments were invited according to the Brazilian DNA Resolution 1. No comments were received. Public stakeholder input has also been invited via the UNFCCC web-site. One comment has been received and taken into account in the validation.

In summary, it is DNV’s opinion that the “Cachoeira Encoberta and Triunfo Small Hydroelectric Power Plants - Brascan Energética Minas Gerais S.A (BEMG) Project Activity” as described in the revised project design document of 23 September 2005, meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology for ACM0002. Hence, DNV will request the registration of the “Cachoeira Encoberta and Triunfo Small Hydroelectric Power Plants - Brascan Energética Minas Gerais S.A (BEMG) Project Activity” as CDM project activity.

Prior to the submission of this validation report to the CDM Executive Board, DNV will have to

<p>receive the written approval of the DNA of Brazil, including confirmation that the project assists in achieving sustainable development.</p> <p>For further details, please refer to the "Validation Findings" Section and Table 1 of the Validation Protocol in Appendix A of DNV's Validation Report (DNV Report 2005-0647, rev. 01).</p>		
<p>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.</p>		
<p>By submitting this validation report, the DOE confirms that all validation requirements are met.</p>	<p>Prior to the submission of this validation report to the CDM Executive Board, DNV will have to receive the written approval of the DNA of Brazil, including confirmation that the project assists in achieving sustainable development.</p>	
<p>Name of authorized officer signing for the DOE</p>	<p></p> <p>Michael Lehmann</p>	
<p>Date and signature for the DOE</p>	<p>01 November 2005</p>	
<p>Section below to be filled by UNFCCC secretariat</p>		
<p>Date when the form is received at UNFCCC secretariat</p>		
<p>Date at which the registration fee has been received</p>		
<p>Date at which registration shall be deemed final</p>		
<p>Date of request for review, if applicable</p>		
<p>Date and number of registration</p>	<p>Date</p>	<p>Number</p>