



**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>	Det Norske Veritas Certification Ltd. (DNV)
<b>Title of the proposed CDM project activity (Section A.2 of the attached CDM-PDD) submitted for registration</b>	Bandeirantes Landfill Gas to Energy Project (BLFGE)
<b>Project participants (Name(s))</b>	Biogás Energia Ambiental S/A (Brazil) and the Municipality of São Paulo (Brazil)
<b>Sector in which project activity falls</b>	Waste handling and disposal
<b>Is the proposed project activity a small-scale activity?</b>	No.

**Section 2: Validation report**

<b>List of documents to be attached to this validation report (please check mark):</b>	
<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> The CDM-PDD of the Project activity</li> <li><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 2005-0387, rev. 04));</li> <li><input checked="" 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 assist it in achieving sustainable development:</li> <li><input checked="" type="checkbox"/> Other documents, including any validation protocol used in the validation. <ul style="list-style-type: none"> <li>o DNV's Validation Report (DNV report 2005-0387, rev. 04), including a validation protocol and a list of person interviewed by DNV validation team during the validation process.</li> </ul> </li> <li><input checked="" type="checkbox"/> Information on when and how the above validation report is made publicly available.</li> <li><input checked="" type="checkbox"/> Banking information on the payment of the non-reimbursable registration fee.</li> <li><input checked="" type="checkbox"/> A statement signed by all project participants stipulating the modalities of communicating with the Executive Border and the secretariat in particular with regard to instructions regarding allocation of CERs at issuance.</li> </ul>	

**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 Bandeirantes Landfill Gas to Energy Project (BLFGE) is a landfill gas collection and electricity generation project in Brazil. The project's core idea is to avoid methane emissions from the landfill managed by the São Paulo municipality in the São Paulo State and to displace grid electricity that is partly generated with fossil fuel, with electricity generated by combusting LFG.

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 rules and modalities 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, 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:

- Econergy & Biogás Energia Ambiental S/A: Project Design Document PDD of "Bandeirantes Landfill Gas to Energy Project", Version 1 (December 2004).
- Econergy & Biogás Energia Ambiental S/A: Project Design Document PDD of "Bandeirantes Landfill Gas to Energy Project", Version 2 (August 2005).
- Econergy & Biogás Energia Ambiental S/A: Project Design Document PDD of "Bandeirantes Landfill Gas to Energy Project", Version 2B (4 December 2005).
- Econergy & Biogás Energia Ambiental S/A: Datasheet to demonstrate IRR Calculation, Excel spreadsheets, March 2005.
- Econergy & Biogás Energia Ambiental S/A: Datasheet to calculate LFG baseline emissions, Excel spreadsheets, March 2005.
- Econergy: Spreadsheet for Calculation of Combined Margin (ONS Emission Factor SSEC0 2002-2004 v 2005-11-29.xls)
- Econergy & Biogás Energia Ambiental S/A: Letters sent to local stakeholders
- Comissão Interministerial de Mudança Global do Clima (DNA of Brazil): Letter of Approval. 12 September 2005
- International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF): Validation and Verification Manual. <http://www.vvmanual.info>
- Approved Baseline and Monitoring Methodology ACM0001: "Consolidated baseline and monitoring methodology for landfill gas projects activities". Version 02 of 30 September 2005.
- Approved Baseline and Monitoring ACM0002: "Consolidated methodology for grid-connected electricity generation from renewable sources". Version 04 of 28 November 2005.
- CDM Executive Board: Tool for the demonstration and assessment of additionality. Version 02 of 28 November 2005.
- 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:

- Manoel Antonio Avelino Silva - Engineer of Logos Engineering
- Helvécio Guimarães – Consultant of Econergy
- Lucio Martins Laginha – Engineer of the Municipality of São Paulo
- José Carlos Melo de Oliveira - Engineer of the Municipality of São Paulo
- Antonio Carlos Delbin – Technical Director of Biogás
- Marcelo Shunn Diniz Junqueira – Director of Econergy

The validation team consisted of the following personnel:

Mr. Luis Filipe Tavares	DNV Rio de Janeiro	Team leader, Waste sector expert
Ms. Cintia Dias	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 2005-0387, rev. 04).

### 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 December 2004. The Validation consists of the following three phases:

- i) a desk review of the Project design and the baseline and monitoring methodology;
- 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) for the project submitted by the project participants were reviewed. Additional background documents related to the project design and the baseline were also consulted.

On 4 March 2005 DNV performed interviews with Biogas Energia Ambiental S/A and Econergy and the Municipality of São Paulo during a site visit at the Bandeirantes landfill in the São Paulo municipality, São Paulo State, to confirm and to resolve issues identified during the document review.

On 11 March 2005 DNV had a meeting with Logos Engenharia and Econergy to review the financial analysis used to justify the additionality of project.

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 2005-0387, rev. 04).

For further details, please refer to the "Methodology" Section of DNV's Validation Report (DNV Report 2005-0387, rev. 04) and the IETA/PCF Validation and Verification Manual ([www.vvmanual.info](http://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 Certification published the PDD of January 2005 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 28 January 2005 to 27 February 2005. No comments were 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 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 “Bandeirantes Landfill Gas to Energy Project” at São Paulo municipality, São Paulo State, Brazil (hereafter called “the project”). 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 are Biogás Energia Ambiental S/A and São Paulo Municipality. The participating host Party Brazil meets the requirements to participate in the CDM requirements and has provided written approval of voluntary participation in the project. No Annex I Party has yet been identified.

The project proposes to collect and to utilise the landfill gas (LFG) captured at the Bandeirantes landfill to generate electricity displacing grid electricity. The project is not expected to have considerable environmental impacts. The project has an Operation Environmental Licence issued after the project’s Environmental Impact Assessment was assessed by the relevant government agency.

By promoting renewable energy, the project is in line with the current sustainable development priorities of Brazil. The DNA of Brazil confirmed that the project assists in achieving sustainable development.

The project applies the approved baseline and monitoring methodology ACM0001, i.e. “Consolidated baseline methodology for landfill gas project activities”. To determine an emission coefficient for the grid electricity displaced by the project, the consolidated approved baseline and monitoring methodology ACM0002 “Consolidated methodology for grid-connected electricity generation from renewable sources” is applied. The methodologies have 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 0.2677 tCO<sub>2</sub>e/MWh (weighted average of the build and operating margin) is calculated in accordance with the baseline methodology ACM0002. 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 in the South-Southeast-Midwest grid.

Through the tool for the demonstration and assessment of additionality, 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.

The monitoring plan sufficiently specifies the monitoring requirements of the main project indicators.

By combusting or flaring the landfill gas and displacing grid electricity, the project results in the reduction of CH<sub>4</sub> and CO<sub>2</sub> 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 and Parties, stakeholders and NGOs were invited to comment on the validation requirements. No comments were received.

In summary, the "Bandeirantes Landfill Gas to Energy Project" (BLFGE) as described in the revised and resubmitted project design document of 4 December 2005, meets all present and relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology for ACM0001 in combination with ACM0002. Hence, DNV will request the registration of the "Bandeirantes Landfill Gas to Energy Project" (BLFGE) as CDM project activity.

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 2005-0387, rev. 04).

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 Lehmann*

Michael Lehmann

Date and signature for the DOE

11 August 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