**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*** | |
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| **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** | Quitaúna Landfill Gas Project (QLGP) |
| **Project participants (Name(s))** | Quitaúna Serviços Ltda and Econergy Brasil Ltda |
| **Sector in which project activity falls** | Waste handling and disposal. |
| **Is the proposed project activity a small-scale activity?** | No. |

| ***Section 2: Validation report*** | |
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| **List of documents to be attached to this validation report (please check mark)*:*** | |

- ☑ The CDM-PDD of the Project activity
- ☑ 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 2006-1218, rev. 02));
- ❑ The written approval of voluntary participation from the designated national authority of each Party involved, including confirmation by the host Party hat the project activity assist it in achieving sustainable development:
  - (Attach a list of all Parties involved and attach the approval(in alphabetic order))
- ☑ Other documents, including any validation protocol used in the validation.
  - DNV's Validation Report (DNV report 2006-1218, rev. 02), including a validation protocol and a list of person interviewed by DNV 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 Border 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 objective of the "Quitaúna Landfill Gas Project (QLGP)" is to capture and flare the landfill gas generated at the Quitaúna landfill located in the city of Guarulhos, São Paulo State, Brazil in order to avoid emissions of methane to the atmosphere.

The project involves the development of a landfill gas collection pipeline network and flaring system. The collection system will be built using the existing wells. The wells will be covered and connected to a main pipeline to transport the landfill gas to the flare. A blower will be installed in order to increase the amount of landfill gas collected.

The forecasted amount of GHG emission reductions from the project is estimated to be 665 216 $tCO_2e$ during the first renewable 7-year crediting period, resulting in estimated average annual emission reductions of 95 030 $tCO_2e$.

Considering the amount of uncertainty related to the methane generation and collection efficiency, which depends on the actual design and engineering of the project, this might be achievable if the project is implemented suitably. However, experiences with other landfills have shown that the methane generation and collection efficiency of the landfills projected by the first order decay model has an inherent uncertainty of almost 50% and hence the amount of CERs, which will be monitored *ex-post*, might vary from the projected amount.

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, 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 assessed:

Econergy: *Project Design Document for the "*Quitaúna Landfill Gas Project (QLGP)*",* version 1 of 28 April 2006 and version 4 of 24 July 2006.

Econergy: *Project Design Document for the "*Quitaúna Landfill Gas Project (QLGP)*",* version 5 of 05 September 2006.

Econergy: *Project Design Document for the "*Quitaúna Landfill Gas Project (QLGP)*",* version 6 of 20 September 2006.

Econergy: *Spreadsheets for the calculation of the emission reductions from the "*Quitaúna Landfill Gas Project (QLGP)".

Spreadsheets for the calculation of the combined margin emission Coefficient (ONS-Emission factors S-SE-CO 2003-2005-2006.08.28.xls).

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

CDM Executive Board: *Approved Consolidated Baseline and Monitoring Methodology ACM0001: "Consolidated baseline and monitoring methodology for landfill gas project activities",* version 04 of 28 July 2006.

CDM Executive Board: *Approved Consolidated Baseline and Monitoring Methodology ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable*

*sources"* and *"Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources"*, version 6 of 19 May 2006.

CDM Executive Board: *Tool for the demonstration and assessment of additionality*, version 02 of 28 November 2005.

The following persons were interviewed:
Eduardo Cardoso Filho - Econergy

The validation team consisted of the following personnel:

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| Mr Luis Filipe Tavares | DNV Certification Brazil | Team leader, Waste sector expert |
| Mr Subhendu Biswas | DNV Certification India | GHG auditor |
| Mr Praveen Nagaraje Urs | DNV Certification India | GHG auditor |
| Mr Raphael de Souza | DNV Certification Brazil | GHG auditor |
| Mr.K.V.Raman | DNV, India | Technical reviewer |

For further details, please refer to the "Introduction" and "References" Sections of DNV's Validation Report (DNV report 2006-1218, 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 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 PDD version 1 of 28 April 2006 and the subsequent revisions (version 4 of 24 July 2006, version 5 of 05 September 2006 and the final version 6 of 20 September 2006) submitted by Quitaúna Serviços Ltda and Econergy Brasil Ltda were assessed by DNV.

Also, additional documents such as the grid emission factor calculations, emission reduction calculations, environmental licences and the letters sent to local stakeholders, were assessed during the validation.

On 07 June 2006, DNV performed interviews with a representative of Econergy Brasil Ltda in order 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 ad 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* (CARs). The term *clarification* (CL) 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 DNV's satisfaction.

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 2006-1218, rev. 02).

For further details, please refer to the "Methodology" Section of DNV's Validation Report (DNV report 2006-1218, rev. 02) and the IETA/PCF Validation ad 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)**

The PDD of 28 April 2006 was made publicly available on DNV's climate change website (www.dnv.com/certification/climatechange) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 05 May 2006 to 03 June 2006. 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 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**

Det Norske Veritas Certification Ltd. (DNV) has performed a validation of the "Quitaúna Landfill Gas Project (QLGP)" located in the city of Guarulhos, São Paulo 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 participants are Quitaúna Serviços Ltda and Econergy Brasil Ltda of Brazil. The host Party Brazil meets the relevant participation requirements. No participating Annex I Party is yet identified.

The project objective is to capture and flare the landfill gas produced at the Quitaúna landfill, to avoid emissions of methane to the atmosphere. The technology to be employed will be the improvement of landfill gas collection and flaring, through the installation of an active recovery system composed of a collection and transportation pipeline network and a flaring system.

The project applies the approved baseline and monitoring methodology ACM0001 (version 04 of 28 July 2006), i.e. "Consolidated baseline and monitoring methodology for landfill gas project activities". The baseline methodology has been correctly applied 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.

The monitoring methodology has been correctly applied. The monitoring plan sufficiently specifies the monitoring requirements.

By burning the methane contained in landfill gas the project results in reductions of $CH_4$ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. Emission reductions are directly monitored and calculated ex-post, using the approach indicated in ACM0001. For the ex-ante estimation of emission reductions and the projected LFG generation from the landfill was determined using the IPCC first order decay model.

Local stakeholders, such as the Municipal Government, the state and municipal agencies, the Brazilian forum of NGOs, neighbouring communities and the office of the attorney general, were invited to

comment on the project, in accordance with the requirements of Resolution 1 of the Brazilian DNA. One comment was received and taken into account.

In summary, it is DNV's opinion that the "Quitaúna Landfill Gas Project (QLGP)" in Brazil, as described in the revised and resubmitted project design document of 20 September 2006, meets all relevant UNFCCC requirements for the CDM and all relevant host Party criteria and correctly applies the baseline and monitoring methodology ACM0001 (version 04 of 28 July 2006). Hence, DNV will request the registration of the "Quitaúna Landfill Gas Project (QLGP)" as a 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 2006-1218, rev. 02).

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.

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| By submitting this validation report, the DOE confirms that all validation requirements are met. | Prior to the submission of this validation report to the CDM Executive Board, DNV will have to receive the written approval of voluntary participation from the DNA of Brazil, including the confirmation that the project assists it in achieving sustainable development. |
| Name of authorized officer signing for the DOE | Michael Lehmann |
| Date and signature for the DOE | 04 October 2006<br>  |

| ***Section below to be filled by UNFCCC secretariat*** | | |
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| 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 |
| | | |