VALIDATION REPORT

WORLD BANK GROUP (WB)

ITAOCA LANDFILL GAS PROJECT

Report No: 6368 – 08/405

Date: 2010/10/12

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Final Approval by: Martin Saalmann	Organisational unit: TÜV NORD JI/CDM Certification Program
Client: World Bank Group (WB)	Client ref.: Mr. Eduardo Gaiotto
Summary:	☒ positive validation opinion ☐ negative validation opinion

World Bank Group (WB) .has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "ITAOCA LANDFILL GAS PROJECT" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords) and the relevant decisions by COP/MOP and CDM Executive Board

In the course of the pre-validation 5 Corrective Action Requests (CARs) and 16 Clarification Requests (CLs) were raised and successfully closed. In addition 1 FAR has been issued and should be reviewed during the first verification.

The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.

In detail the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria (Brazil) and all relevant UNFCCC requirements for CDM. At the time of the completion of the validation the LoA is pending. For the Brazilian DNA a positive validation opinion is a prerequisite for the host government approval and thus the LoA could not be considered at the present validation stage. Furthermore, the LoA from the host country (Brazil) is a pre-requisite for the issuance of the LoA by the Spanish DNA.The request for registration will not be made until the LoA from both parties are issued and verified by the validation team.
- The project additionality is sufficiently justified in the PDD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 258,869 tCO_2e are most likely to be achieved within the 10 years fixed crediting period (1st January 2011 to 31st December 2020).

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

Report No.: 6368 – 08/405	Subject Group: Climate Protection	
Report title: ITAOCA LANDFILL GAS PROJECT		
Work carried out by: Inga Nagel Ricardo Lopes Jochen Schubert		
Final technical review by: Alexandra Nebel Stefan Winter	Local technical review by	
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Indexing terms

Climate protection
Kyoto Protocol
CDM
Validation

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Abbreviations

BAU	Business as usual
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CH_4	Methane
CO_2	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CP	Certification Program
DNA	Designated National Authority
EB	CDM Executive Board
EIA	Environmental Impact Assessment
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
LFG	Landfill Gas
PDD	Project Design Document
QC/QA	Quality control/Quality assurance
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 OBJECTIVE / SCOPE

The purpose of a validation is to have an independent third party assess the project design. In particular the project's baseline, the monitoring plan (MP), and the project's compliance with

- the requirements of Article 12 of the Kyoto Protocol;
- the CDM modalities and procedures as agreed in the Marrakech Accords under decision 3/CMP.1
- the annex to the decision;
- subsequent decisions made by COP/MOP & CDM Executive Board and
- other relevant rules, including the host country legislation and sustainability criteria

are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders on the quality of the project and its intended generation of certified emission reductions (CERs).

The validation scope is given as a thorough independent and objective assessment of the project design including especially: the correct application of the methodology, the project's baseline study, additionality justification, local stakeholder commenting process, environmental impacts and monitoring plan, which are included in the PDD and other relevant supporting documents, to ensure that the proposed CDM project activity meets all relevant and applicable CDM criteria.

The information included in the PDD and the supporting documents were reviewed against the requirements as set out by the UNFCCC. The validation team has, based on the requirements in the Validation and Verification Manual/VVM/, carried out a full assessment of all evidences to assess the compliance of the project with the key areas as outlined in section V.E. and V.F. of the VVM (version 1.1, EB 51).

The validation is based on the information made available to TÜV NORD JI/CDM CP and on the contract conditions. TÜV NORD JI/CDM CP can not be held liable by any entity for making its validation opinion based on any false or misleading information supplied to it during the course of validation.

The validation is not meant to provide any consulting to the project participants. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

2 GHG PROJECT DESCRIPTION

2.1 Project Characteristics

Essential data of the project is presented in the following Table 2-1.

Table 2-1: Project Characteristics

Item	Data		
Project title	Itaoca Landfill Gas Project		
Project size	☒ Large Scale ☐ Small Scale		
Project Scope *(according to UNFCCC sectoral scope numbers for CDM)*	☐	1	Energy Industries (renewable- /non-renewable sources)
	☐	2	Energy distribution
	☐	3	Energy demand
	☐	4	Manufacturing industries
	☐	5	Chemical industry
	☐	6	Construction
	☐	7	Transport
	☐	8	Mining/Mineral production
	☐	9	Metal production
	☐	10	Fugitive emissions from fuels (solid, oil and gas)
	☐	11	Fugitive emissions from production and consumption of halocarbons and hexafluoride
	☐	12	Solvents use
	☒	13	Waste handling and disposal
	☐	14	Afforestation and Reforestation
	☐	15	Agriculture
Applied Methodology	ACM 0001 version 11		
Crediting period	☐ Renewable Crediting Period (7 y) ☒ Fixed Crediting Period (10 y)		
Start of crediting period	2011/01/01		

2.2 Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-2).

Table 2-2: Project Parties and project participants

Characteristic	Party	Project Participant
Host party	Brazil	Haztec Tecnologia e Planejamento Ambiental SA
Other involved party/ies	Spain	International Bank for Reconstruction and Development as a Trustee of Spanish Carbon Fund

2.3 Project Location

The details of the project location are given in table 2-3:

Table 2-3: Project Location

No.	Project Location
Host Country	Brazil
Region:	State of Rio de Janeiro
Project location address:	City of São Gonçalo
Latitude:	22º46'30''S
Longitude:	43º22'25''W

2.4 Technical Project Description

As described in section A.4.3 of PDD, under baseline conditions the site consisted of an un-managed dump with no organized passive vents and no equipment installed for flaring landfill gas, which received for around 30 years the domestic waste of the City of São Gonzalo.

Under the proposed activity the landfill will be covered with clay to prevent the biogas to come out through the surface and landfill gas will be collected with the use of blowers and then through a pipe system the landfill gas will reach a pre-treatment, for removal of impurities, after which it will be transported to the enclosed flare for its combustion.

The landfill gas collection system includes vertical wells used to extract gas and leachate, horizontal wells to extract gas, wellheads designed as a looping system in order to allow for partial loss of header in one direction without losing gas system functionality, condensation extraction and storage systems at low points throughout the gas system and a pipeline collection system to connect with the flare system.

The flaring system includes one enclosed flare with burning control system and monitoring equipment to continuously monitor gas composition and flare temperature.

The key technical data are provided in table 2-4 below

Table 2-4: Technical data of the project activity

Parameter	Unit	Value
Waste Composition		
Organic matter	%	46.5
Paper	%	12.8
Textiles	%	4.1
Wood	%	0.9
Inert Matter	%	35.7
Equipment		
Collection Efficiency	%	40

Parameter	Unit	Value
Manufacturer	John Zinc	-
Flare Type	-	enclosed
Quantity	-	1
Capacity	Nm^3/h	3,000
Flare efficiency	%	98% non-methane volatile organic compounds (NMVOC)
Flare efficiency	%	99% total organic compounds

3 METHODOLOGY AND VALIDATION SEQUENCE

3.1 Validation Steps

The validation of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Publication of the project design document (PDD)
- A desk review of the PDD /PDD/ submitted by the client and additional supporting documents with the use of customised validation protocol /CPM/ according to the Validation and Verification Manual /VVM/,
- Validation planning,
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer and its contractors,
- Draft validation reporting
- Resolution of corrective actions (if any)
- Final validation reporting
- Technical review
- Final approval of the validation.

The sequence of the validation is given in the table 3.1 below:

Table 3.1: Validation sequence

Topic	Time
Assignment of validation	2008/10/23
Submission of PDD for global stakeholder commenting process	2009/06/10 to 2009/07/09
On-site visit	2009/07/13 and 2009/07/14
Draft reporting finalised	2009/09/21
Technical review on draft reporting finalised	2009/10/21
Final reporting finalised	2010/07/29
Technical review on final reporting finalised	2010/10/12

3.2 Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the verification can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3 Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a verification team, consistent of one team leader and 2 additional team member, were appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-2 below.

Table 3-2: Involved Personnel

	Name	Company	Function [1]	Qualification Status [2]	Scheme competence	Technical competence [4]	Host country Competence	Team Leading competence
☒ Mr. ☐ Ms.	Inga Nagel	TÜV NORD, Germany	TL	A	☒	-	☐	☒
☒ Mr. ☐ Ms.	Jochen Schubert	TÜV NORD, Germany	TM	A	☒	N	☐	☒
☒ Mr. ☐ Ms.	Ricardo Lopes	BRTÜV	TM	E	☒	-	☒	☐
☐ Mr. ☒ Ms.	Fernanda Bortolotto	BRTÜV	-	T	☐	-	☒	☐
☒ Mr. ☐ Ms.	Stefan Winter	TÜV NORD, Germany	TR[3]	E	☒	N	☐	☐
☒ Mr. ☐ Ms.	Alexandra Nebel	TÜV NORD, Germany	TR[3]	A	☒	-	☐	☒
☒ Mr. ☐ Ms.	Martin Saalmann	TÜV NORD, Germany	FA	SA	☒	-	☐	☒

[1] TL: Team Leader; TM: Team Member, TR: Technical review; FA: Final approval

[2] GHG Auditor Status: A: Assessor; E: Expert; SA: Senior Assessor; T: Trainee; TE: Technical Expert

[3] No team member

[4] As per S01-MU03 or S01-VA070 A2 (such as A, B, C.....)

Certificates of appointment for the above mentioned team members are enclosed in annex 6 of this report.

3.4 Consideration of Public Stakeholder Comments

Acc. to the modalities and procedures the draft PDD, as received from the project participants, has been made publicly available on the dedicated UNFCCC CDM website prior to the validation activity commenced. Stakeholders have been invited to comment on the PDD within the 30 days public commenting period.

In case comments were received, they are taken into account during the validation process. The comments and the discussion of the same are documented in annex 5 of this report.

3.5 Validation Protocol

In order to ensure consideration of all relevant assessment criteria, a validation protocol is used. The protocol shows, in a transparent manner, criteria and requirements, means of validation and the results from pre-validating the identified criteria. The validation protocol reflects the generic CDM requirements each CDM project has to meet as well as project specific issues as applicable. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements that a CDM project is expected to meet;
- It ensures a transparent validation process where the validating entity will document how a particular requirement has been validated and the result of the determination.

The validation protocol as described in Figure 1.

Validation Protocol Table A-1: Requirement checklist				
Checklist Item	***Validation Team Comment***	***Reference***	***Draft Conclusion***	***Final Conclusion***
The checklist items in Table A-1 are linked to the various requirements the project should meet. The checklist is organised in various sections. Each section is then further sub-divided as per the requirements of the topic and the individual project activity.	*The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the validation team and how the assessment was carried out. The reporting requirements of the VVM shall be covered in this section.*	*Gives reference to the information source on which the assessment is based on*	*Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft validation stage.*	*In case a corrective action or a clarification the final assessment at the final validation stage is given.*

Figure 1: Validation protocol tables

The completed validation protocol is enclosed in Annex 1 to this report.

3.6 Review of Documents

The published PDD (version 1) and supporting background documents related to the project design and baseline were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

3.7 Follow-up Interviews

The validation team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for CDM.

During validation the validation team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in table 3-3.

Table 3-3: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives Project consultant	- Chronological description of the project activity with documents of key steps of the implementation. - Current status of plant design - Technical details of the project realization, project feasibility, designing, operational life time, monitoring of the project - Host Government Approval - Approval procedures and status - Monitoring and measurement equipment and system. - Financial aspects - Crediting period - Project activity starting date - CER allocation / ownership - Baseline study assumptions - Additionality - Sustainable development issues - Monitoring - Analysis of local stakeholder consultation - Roles & responsibilities of the project participants w.r.t. project management, monitoring and reporting - National Legislation - Editorial issues of the PDD

A comprehensive list of all interviewed persons is part of section 7 ‘References’.

3.8 Project comparison

The validation team has compared the proposed CDM project activity with similar projects or technology that have similar or comparable characteristics and with similar projects in the host country in order to achieve additional information esp. regarding:

- Project technology
- Additionality issues
- Reasons for reviews, requests for reviews and rejections within the CDM registration process.

3.9 Resolution of Clarification and Corrective Action Requests

3.9.1 Definition

A **Corrective Action Request (CAR)** will be established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence the project results,
- the requirements deemed relevant for validation of the project with certain characteristics have not been met or
- there is a risk that the project would not be registered by the UNFCCC or that emission reductions would not be able to be verified and certified.

A **Clarification Request (CL)** will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A **Forward Action Request (FAR)** will be issued when certain issues related to project implementation should be reviewed during the first verification.

3.9.2 Draft Validation

After reviewing all relevant documents and taken all other relevant information into account, the validation team issues all findings in the course of a draft validation report and hands this report over to the project proponent in order to respond on the issues raised and to revise the project documentation accordingly.

3.9.3 Final Validation

The final validation starts after issuance of the proposed corrective action (CA) of the CARs CLs and FARs by the project proponent. The project proponent has to reply on

those and the requests are “closed out” by the validation team in case the response is assessed as sufficient. In case of raised FARs the project proponent has to respond on this, identifying the necessary actions to ensure that the topics raised in this finding are likely to be resolved at the latest during the first verification. The validation team has to assess whether the proposed action is adequate or not.

In case the findings from CARs and CLs cannot be resolved by the project proponent or the proposed action related to the FARs raised cannot be assessed as adequate, no positive validation opinion can be issued by the validation team.

The CAR(s) / CL(s) / FAR(s) are documented in chapter 4.

3.10 Technical review

Before submission of the final validation report a technical review of the whole validation procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the validation opinion and the topic specific assessments as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.11 Final approval

After successful technical review of the final report an overall (esp. procedural) assessment of the complete validation will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

Only after this step the request for registration can be started (in case of a positive validation opinion).

4 VALIDATION FINDINGS

In the following table the findings from the desk review of the published PDD, visits, interviews and supporting documents are summarised**:**

Table 4-1: Summary of CARs, CLs and FARs issued

Validation topic [1)]	No. of CAR	No. of CL	No. of FAR
General description of project activity (A) - Project specification - Technical project description - Participation - Contribution to sustainable development - PDD editorial aspects - Technology to be employed	-	2	-
Project Baseline, Additionality and Monitoring Plan (B) - Application of the Methodology - Project Boundary - Baseline identification - Calculation of GHG emission reductions Project emissions Baseline emissions Leakage - Additionality determination - Monitoring Methodology - Monitoring Plan - Project management planning	5	8	-
Duration of the Project / Crediting Period (C)	-	2	-
Environmental impacts (D)	-	2	1
Stakeholder Comments (E)	-	2	-
SUM	**5**	**16**	**1**

[1)] The letters in brackets refer to the validation protocol

The following tables include all raised CARs, CLs and FARs. For an in depth evaluation of all validation items it should be referred to the validation protocols (see Annex 1).

The findings of validation process are summarized in the tables below.

General	**CAR B1**		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Section B.6.1 needs intense revision considering the Guidelines for completing the PDD, ACM 001 and the tools it draws upon, as follows: 1. For more overall clarity, please clearly indicate the separation of each section (e.g. with a title in bold for **Baseline Emissions**, **Ex-ante** and **Ex-Post** approach for $MD_{project,y}$, **Project Emissions**, **Grid Calculation**, etc); 2. When several terms of an equation are equal to zero, please include a simplified equation (e.g. equation of BE_y; equation of $MD_{project,y}$ in ex-post approach); 3. For $MD_{project,y}$, please include the complete equation given in ACM 001 and then use the simplified one ($MD_{project,y} = MD_{FLARE,y}$); 4. Invert the order of equations (5) and (6); 5. In the ex-ante approach, please include the efficiency of the extraction (as required by ACM001, version 11, page 11, second paragraph); 6. In the ex-ante approach, please include the efficiency of the flare, to estimate the ER in a conservative way (as not 100% of the estimated methane emissions will be destroyed by the flare); 7. For parameter $MD_{project,y}$, please correct the name for "methane destroyed by the project" (not "would be destroyed", as this description applies to $MD_{BL,y}$); 8. Please revise the description of $BE_{CH4,SWDS,y}$ as it is not appropriate to the specific case of the project activity; 9. As since 2004, the landfill has been somehow controlled and covered with soil, parameter OX shall be 0.1, to be conservative; 10. Please remove the option of default value for the flare efficiency in STEP 6, page 21; 11. Please exclude GWP_{CH4} from Table in page 22, as it is not a constant, but reviewed at the beginning of each crediting period and shall be in B.6.2; In addition, please name and number the table; 12. In Project emissions, please add the equation and description of parameters for the calculation of $PE_{EC,y}$; 13. In Project Emissions, please clarify that there will be consumption of fossil fuels, and add the corresponding equation and description of parameters according to the respective tool; 14. Please add a brief description of the methodological choices followed by the Brazilian DNA for the calculation of the combined margin emission factor for the grid.		

General	CAR B1
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	Section B.6.1 has been revised considering the Guidelines for completing the PDD, ACM001 version 11 and the latest version of the tools it draws upon, as follows: 1. Different sections have been indicated: **Baseline Emissions**, **Ex-ante** and **Ex-Post** approach for $MD_{project,y}$, **Project Emissions**, **Grid Calculation**, etc 2. Where terms equal 0, simplified versions of the equations have been included 3. A complete equation for $MD_{project,y}$, has been included from ACM001 v11, and then a simplified one 4. Equations for ex-ante baseline emissions have been inverted 5. 6. The efficiency of the extraction, as well as the flare efficiency, as required by ACM001, version 11, have been included. 7. For the parameter $MD_{project,y}$, the name has been corrected. 8. The description of $BE_{CH4,SWDS,y}$ has been changed to fit the project activity 9. The parameter OX has been changed to be 0.1, to be conservative; 10. The option of default value for the flare efficiency in STEP 6, page 21 has been removed 11. GWP_{CH4} has been excluded from Table in page 22. 12. Equations have been added for project emissions, along with the respective tools 13. A brief description has been added for the methodological choices followed by the Brazilian DNA for the calculation of the combined margin emission factor for the grid, in Annex 3

General	CAR B1
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	1. Each section was clearly indicated with title in bold in section B.6.1. 2. Simplified equations were correctly included. 3. For $MD_{project,y,}$ was correctly included the complete equation according ACM 001 and the simplified equation. 4. Equations were corrected inverted and furthermore, now they are as equations (1) and (2). 5. In the ex-ante approach, the efficiency of the degassing system (40%). 6. The flare efficiency (90%) were correctly included as described in ACM 001 version11. 7. Description of parameter $MD_{project,y}$ was corrected to "the amount of methane destroyed during the year.." 8. Description of $BE_{CH4,SWDS,y}$ had been correctly changed to "methane emissions generated from waste being disposed at the solid waste disposal site (SWDS) during the period from the start of the project activity to the end of the year y (tCO_2e), and now it is appropriate to this type of project activity. 9. For conservative reasons, parameter OX has been correctly changed to 0.1. **10. The option of default value for the flare efficiency in STEP 6 was not removed in page 24.** **11. Table was numbered and named as table 5: Calculations constant. However, parameter GWP_{CH4} had not been excluded.** 12. The equation and description of parameters for the calculation of $PE_{EC,y}$ were correctly added in page 23. In the same page it has been clarified that the project activity will use Liquefied Petroleum Gas (LPG) for ignition of the flare system. Its emission will be calculated according to the "Tool to calculate project or leakage CO2 emission from fossil fuel combustion". **13. A description of the Emission factor and the methodological choices followed by the Brazilian DNA had been added in Annex 3. However, it is necessary to update the version of the "Tool to calculate the emission factor for an electricity system".** **CAR B1 remains open.**
Corrective Action #2 **On 01/June/2010**	11. GWP_{CH4} has been removed from table 5 13. The version of the tool applied is 02, as stated in section B.1; thus the version of the tool has been updated in Annex 3.
DOE Assessment #2 **On 09/June/2010**	**10. The option of default value for the flare efficiency in STEP 6 was not removed in page 24.** 11. As GWP_{CH4} is not a constant, but reviewed at the beginning of each crediting period it was correctly removed from table 5 (named as "Calculation constants" in page 22). 13. "Tool to calculate the emission factor for an electricity system" was correctly updated to version 2, as according to unfccc website is the latest and current valid version of the tool. **CAR B1 remains open..**
Corrective Action #3	The option of default value for the flare efficiency in STEP 6, page 24 has been removed

General	CAR B1
DOE Assessment #3 On 10/sep/2010	The option of default value was correctly removed. However: **a) Equation 3 needs to be applied to calculate BE ex-ante and ex-post (only determination of MDproject differs). Please correct;** **b) Page 24/25: Please include parameters of table 5 in section B.6.2;** **c) Please include a note that leakage effects do not need to be considered under the meth;** **CAR remains open**
Corrective Action #4	a) Equation 3 has been moved to the beginning of Section B.6.1 to lead the entire calculation of Baseline emissions; b) All the parameters listed in table 5 have been included in section B. 6.2; c) The note that leakage effects do not need to be considered under the methodology has been included.
DOE Assessment #4	a) OK, section B.6.1 has been revised accordingly; b) OK, all parameters have been included in section B.6.2; c) OK, statement was included in section B.6.1; All necessary equations for ex-post calculation of emission redution have been clearly described and are in line with the methodology and tools. **CAR is closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CAR B2		
Classification	☒ CAR	☐ CL	☐ FAR

General	CAR B2
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.6.2 please: 1. Use the tables given in the PDD template version 3.1 and include values applied with respective sources for all parameters; 2. **Regulatory requirements relating to landfill operation**: please include the actual regulations (NBR 8419 and ABNT 1984, sections 5.1.6.5); 3. **Adjustment factor**: please exclude as there is no baseline destruction of methane *ex-ante* therefore this is not applicable; 4. Include **all parameters** used in the calculation of BE_{CH4} (which are not fixed default values): MCF, OX, DOC_f, DOC_j (organic and paper), k_j; 5. Include **parameters** Wx; Pn,i,x.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	In section B.6.2: 1. Tables given in the PDD template have been used, including values applied with respective sources for all parameters. 2. Actual regulations (NBR 8419 and ABNT 1984, sections 5.1.6.5) have been included for regulatory requirements.; 3. Adjustment Factor has been excluded. 4. All parameters used in the calculation of BE_{CH4} (which are not fixed default values): MCF, OX, DOC_f, DOC_j (organic and paper), kj, ki have been included. 5. Parameters Wx; Pn,i,x have been included
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	**1. Tables were used according last version of CDM-PDD template, and values applied and respective sources were included. However, for parameter $p_{n,j,x}$, please reference the source used.** 2. The actual regulations from ABNT NBR 8419:1992 were include for Regulatory requirements relating to landfill operation parameter. 3. Adjustment factor was correctly excluded from section B.6.2. **4. Parameters and its respective values used in the calculation of BE_{CH4} (which are not fixed default values): MCF, OX, DOC_j (organic and paper), k_j were correctly included. However, parameter DOC_f, is missing.** 5. Parameters Wx and Pn,i,x were correctly included. **CAR B2 remains open.**

General	CAR B2
Corrective Action #2 **On 01/June/2010**	1. For parameter $\mathbf{p_{n,j,x,}}$ the source is from measurements taken by the project developer for the Feasibility Study, sent as part of evidences, on section 3.1 "Waste filling History" page 20. The study has been referenced on the table for this parameter. 4. Parameter DOC_f has been included.
DOE Assessment #2 **On 11/June/2010**	**1. The source of the values of parameter $\mathbf{p_{n,j,x,}}$ was included in section B.6.2. However, Feasibility Study was not send to the validation team as part of evidence. It is necessary to this evidence.** 4. As it is a fixed parameter, available in the validation of the project, DOC_f has been correctly included in section B.6.2. **CAR B2 remains open**
Corrective Action #3 **On 14/june/2010**	The Feasibility study has been attached to this response
DOE Assessment #3 **On 15/june/2010**	Feasibility study/FS/ has been send to the validation team, that could check in page 21 of the document the evidence of the parameter $p_{n,j,x.}$ However, in parameter $BE_{CH4,\ SWDS,y,}$ the applied value shall be included. **CAR B2 remains open.**
Corrective Action #4	The applied value for $BE_{CH4,\ SWDS,y,}$ has been included in section B.6.2
DOE Assessment #4	Value for $BE_{CH4,\ SWDS,y,}$ was included in section B.6.2. However: a) **Please add parameters φ, F, f** and **z** b**) Please remove NCV, $\mathbf{EF_{CO2}}$, and $\mathbf{TDL_y}$ and include them in section B.7.1 as these parameters need to be monitored.** **c) For NCV and $\mathbf{EF_{CO2}}$, please provide also justification why values provided by the fuel supplier are not used**. **CAR remains open**
Corrective Action #5	a) Parameters **φ**, **F**, **f and z** have been added in section B.6.2; b) NCV, EF_{CO2} TDL_y have been removed from section B.6.2 and included in Section B.7.1 as per request. c) For NCV, the value provided by the fuel supplier has been added in section B.7.1; For EF_{CO2}, No data is available from the fuel supplier, an IPCC default value has been employed. (refer to PDD section B.7.1)

General	CAR B2
DOE Assessment #5	a. OK, parameters included accordingly in section B.6.2; b. OK, sections B.6.2 and B.7.1 revised accordingly; c. OK, value from supplier was correctly used for NCV. For EF there it was evidenced that there is no value available from fuel supplier and the use of IPCC value is conservative; All data sources and assumptions for parameters which remain fixed throughout the crediting period are deemed appropriate and correct, applicable to the project and lead to a conservative estimation of emission reductions. **CAR is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CAR B3		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.6.3 please apply the values to the equations described in B.6.1, clearly documenting each step in a way that the calculation can be reproduced and following the Guidelines for Completing the PDD. In addition, please adjust the years in the tables (also in section B.6.4), according to the starting date of the crediting period given in section C.2.1.1. Moreover, a clear, transparent and unprotected spread sheet in English shall be provided.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	In section B.6.3 steps have been clearly documented as per section B.6.1, so that the calculation can be reproduced. The years in the tables (also in section B.6.4), have been corrected as per the starting date of the crediting period. An unprotected spread sheet in English is provided with the calculations.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	Relevant calculation and steps have been described in section B.6.3 according equations presented in B.6.3 and the Guidelines for completing the PDD. The years in table 6, 7, 8, 9 (section B.6.3) and 10 (section B.6.4) were corrected adjusted to 2011 to 2020, according starting date and the fixed crediting period stated in section C.2.1. A clear, transparent and unprotected spreadsheet/XLS2/, with all values, equations and tables applied in PDD was provided. **However, please, entitle tables 6, 7, 8, 9 and 10.** **CAR B3 remains open.**		

General	CAR B3
Corrective Action #2 On 01/June/2010	Names for tables 6,7,8,9 and 10 have been provided on the PDD.
DOE Assessment #2 On 09/June/2010	Tables were corrected named: Table 6: Annual calculation for $MD_{Project,y}$ Table 7: Annual calculation for $MD_{flared, y}$ Table 8: Baseline Emissions Table 9: Project Emissions Table 10: Summary of ex-ante estimation of Emission Reductions **However, item 'b' (Methane destroyed by the flare – page 33) shall be calcutaed ex post. In ex ante estimative should only be considered the equation from item 'a' and the collection and flare efficiency.** **CAR remains open.**
Corrective Action #3	Item 'b' has been deleted, and ER spreadsheet has been modified to calculate $MD_{project}$ using only the collection and flare efficiency. Please note that this has no effect on estimated values. All table numbers have been updated accordingly
DOE Assessment #3	Calculation in excel sheet now consider both the degassing efficiency and flare efficiency. However please: 1. **Please include statement in section B.6.3 that both efficiencies have been considered in the *ex-ante* estimative.** 2. clarify why for the years 2005 – 2007 a different amount of waste has been considered in the baseline estimation; 3. In the sheet 'Input and calculation', line 112 no results can be seen and the figure below is blank; 4. Please provide additional information on the assumed electricity consumption; 5. Please see item (d) in CAR B4 and change calculation approach, if applicable; **CAR remains open.**

General	CAR B3
Corrective Action #4	1. The statement that both efficiencies have been considered in the ex-ante estimation has been included in Section B.6.3. 2. The waste disposal history has been revised to make it consistent with the pre-feasibility study. Based on the weighed waste for 2005-2007 provided by Haztec, the values from 1980-2004 have been back-calculated assuming a 2% yearly increase in waste tonnage consistent with population increases. (see project pre-feasiblity study for more details). As for the waste disposal from 2008 to August 2010, measured data have been provided by Haztec (see Controle de Resíduo Anual - Revisão de Setembro.xls). In particular, the total waste disposal in 2010 was calculated by extrapolating the data from January to August. PDD and ER calculation spreadsheet have been revised accordingly. As to the sampling approach for waste composition, please refer to *Caracterização de residues, Getres. September 2010*; 3. The results in Line 102 have been included with specification of the project activity; 4. The ER calculation spreadsheet and the PDD have been updated using a new estimation of the electricity consumption based on the equipment to be installed and the expected number of operating hours (See Estimativa de Consumo Energia.xlsx for more details); 5. The issue raised in CAR B4 has been corrected and there will be no change of the calculation approach

General	CAR B3
DOE Assessment #4	1. Ok, requested statement was included in section B.6.3. **2. The quanitty of waste is now consistent with Pre-feasibility study carried out by third party. From 2008 to Augut 2009 data is given by measurements done by project developer. For rest of 2010 extrapolated using 2010 average monthly data. For previous period according to study, the values have been estimated at a 2% grow rate. Waste composition is now based on a study carrried out by the University of Rio de Janeiro and are deemed realiable by the validation team. However, the amount of waste for year 2006 in the pre-feasibility study is 315,117 while in the excel sheet 315,118 have been considered. Please revise. In addition, the efficiency of flare given in section A.4.3 (98%) is not consistent with the efficiency considered in the ex-ante calculation of ERs (90%). Please clarify and make ex-ante estimation consistent with expected flare efficiency.** 3. OK, correction done; **4. Please integrate the provided excel sheet** *Estimativa de Consumo Energia.xlsx* **into the main ER calculation sheet for easier traceability and understanding of any reader; Please do the same with the** *Controle de Resíduo Anual - Revisão de Setembro.xls* 5. OK, see CAR B4; **CAR remains open**
Corrective Action #5	2. Spreadsheet has been corrected and the text in section A.4.3 has been modified to clarify that a more conservative value for the flare efficiency has been used for the ex-ante ER estimates 4. *Estimativa de Consumo Energia.xlsx* and *Controle de Resíduo Anual - Revisão de Setembro.xls* spreadsheets have been integrated in the main ER calculation sheet.
DOE Assessment #5	2. It was added a statement in section A.4.3 that 90% efficiency was conservatively considered for the ex-ante estimatation of Ers. The error was corrected in the excel sheet. 3. Both separate sheets have been integrated into main ER calculation spreadsheet. Conservative assumptions have been used when calculating project emissions reductions. **CAR is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CAR B4		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Section B.7.1, intense revision is needed considering the Guidelines for completing the PDD and the ACM 001 and the tools it draws upon, as follows: 1. Use the tables given in the PDD template version 3.1 and include values applied with respective sources (and corresponding evidences) for all parameters; 2. Do NOT copy paste the text from the methodology or tools only, but rather fill in the tables leaving only the text applicable to the project activity; 3. Frequency of measurement for all parameters should be included; 4. Please include the parameters: $EF_{grid},OM_{,y}$; $EF_{grid},BM_{,y}$; $EC_{PJ,y}$; FC_y; 5. $LFG_{total,y}$ and $LFG_{flare,y}$, please adjust the description of the measurement procedures to be in line with guidance in ACM001, version 11: “average value in a time interval not greater than an hour shall be used in the ER calculations” ; in addition clarify that there will be only one flare; 6. $PE_{flare,y}$; it is not measured, but calculated as per the “tool to determine project emissions from flaring gases containing methane”; 7. W_{CH4}; $t_{O2,h}$ and $fv_{CH4,FG,h}$: specify the type of gas analyzer; 8. $PE_{EC,y}$: remove the statement in data unit that the EF is established ex-ante; it is not measured, but calculated; 9. $f_{vi,h}$: revise the table, as the text has been copied paste and also as the simplified approach will be used; 10. PE: clarify what it refers to (presumably $PE_{EC,y}$, but it is already included); 11. Regulatory requirements: delete, as it is not monitored regularly, but verified at the renewal of the crediting period; 12. Calibration should be better described (average leak flow rate).		

General	CAR B4
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	Section B.7.1, has been revised, following the Guidelines for completing the PD, ACM001 version 11, and the tools it draws upon. Specifically: 1. Tables given in the PDD template version 3.1 have been used including values applied with respective sources (and corresponding evidences) for all parameters; 2. 3. Frequency of measurement for all parameters has been included; 4. Parameters: EF_{grid},$CM_{,y}$; $EC_{PJ,y}$; FC_y; have been included 5. $LFG_{total,y}$ and $LFG_{flare,y}$, description of the measurement procedures has been included to be in line with guidance in ACM001, version 11. It has been clarified that there will be only one flare; 6. $PE_{flare,y}$ description has been modified to show that it will be calculated 7. The type of gas analyzer for W_{CH4}; $t_{O2,h}$ and $fv_{CH4,FG,h}$ has been specified; 8. Statement on $PE_{EC,y}$ has been removed 9. $f_{vi,h}$ has been removed as the parameter will be calculated based on W_{CH4} 10. PE parameters for fossil fuel consumption and electricity consumption have been added 11. Regulatory requirements has been deleted 12.

General	CAR B4
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	1. Tables given in the last PDD template were correctly applied in section B.7.1, including the values of the parameters and the respective source/reference of each one. 2. Texts in the parameters were corrected reedited. **3. Frequency of measurements of the parameters were included, however, make clear the frequency of the parameters $T^{º}$, P, $T^{º}_{flare,}$ $EC_{pj,y}$, $FC_{y.}$** 4. Parameters $EC_{PJ,y}$; FC_y and its respective values were included. **However, parameters $EF_{grid},BM_{,y}$ and $EF_{grid},OM_{,y}$ shall be included once they are supplied by Brazilian DNA in addition to $EF_{grid},CM_{,y,,}$ that is calculated by the PP.** 5. Description of measurement of parameters $LFG_{total,y}$ and $LFG_{flare,y}$ had been modified to: Measured with a flow meter continuously (average value in a time interval not greater than an hour), data to be aggregated monthly and yearly, and now is in line with description in ACM 0001 version 11. And it was stated in Any comment in parameter $LFG_{flare,y}$ that there will be only one flare. **6. $PE_{flare,y}$ description had been modified stating that the parameter is calculated as per "Tool to determine Project emissions from flaring gases containing Methane". However, please, include the version applied of the tool.** **7. In parameters W_{CH4}; $t_{O2,h}$ and $fv_{CH4,FG,h,}$ the type of gas analyzer had not been specified. Please revise and correct it.** **8. Parameter $PE_{EC,y}$ was correctly accordingly stating that it is calculate according to the "Tool to calculate Project emissions from electricity consumption". However, please inform the version applied of the tool where it is necessary.** **9. Parameter $f_{vi,h}$ was incorrectly removed. In addition, please include in the PDD that as a simplified approach, only the volumetric fraction of methane will be measured.** 10. $PE_{EC,x}$ and $PE_{FC,y}$ were included in order to clarify PE. 11. Regulatory requirements were removed from section B.7.1. 12. Calibrations methods were revised and better described where it was necessary. **CAR B4 remains open.**

General	CAR B4
Corrective Action #2 **On 01/June/2010**	3. As per methodology ACM0001 v11, and referenced tools, the frequency of parameters **T^{o}, P, $T^{o}_{flare,}$ $EC_{pj,y}$ FC_{y}.** has been indicated, in all cases being continuous and indicated in the section "Description of measurement methods and procedures to be applied" of the tables. 6. The version of the tool (in this case version 01) has been added to the text in the Box for parameter **$PE_{flare,y}$** 7. Both parameters: **W_{CH4}** and **$t_{O2,h}$** have been revised to include that they will be monitored using "continuous gas analyzers" 8. The version of the tool (in this case version 01) has been added to the text in the Box for parameter **$PE_{EC,y}$** 9.
DOE Assessment #2 **On 11/June/2010**	3. It was included that **T^{o}, P, $T^{o}_{flare,}$ $EC_{pj,y}$ FC_{y}** will be measured continuously as determined by ACM0001 v11 and referenced tools, as could be checked. 4. **Parameters $EF_{grid},BM,_{y}$ and $EF_{grid},OM,_{y}$ shall be included once they are supplied by Brazilian DNA in addition to $EF_{grid},CM,_{y,,}$ that is calculated by the PP.** 6. Version of the tool was correctly included in parameter **$PE_{flare,y}$.** 7. It was included, in both parameters, that they will be measured with a specific gas analyser for this kind of measurement, **however, could please specify what kind of gas analyser?** 8. Version of the tool was correctly included in parameter **$PE_{EC,y}$.** 9. **Parameter $f_{vi,h}$ was incorrectly removed. In addition, please include in the PDD that as a simplified approach, only the volumetric fraction of methane will be measured.** **CAR remains open.**
Corrective Action #3	4. Parameters $EF_{grid,BM,y}$ and $EF_{grid,OM,y}$ have been included as supplied by Brazilian DNA. The latest published data was used, for 2009 therefore the project emissions have decreased. This has been updated on the spreadsheet and tables.

General	CAR B4
DOE Assessment #3	7. **No response has been given by PP; in addition, the description of measurement methods for $t_{O2,h}$ is not clear, i.e. are there 2 possible types of gas analyzers?** **9. Point was not addressed by PP. Please include in STEP2 , section B.6.1 of PDD that as a simplified approach allowed by the methodology, only the volumetric fraction of methane will be measured – not of all other components;** **In addition:** **a) Please include $FV_{RG,h}$ and $fv_{CH4,h}$ as separate monitoring parameters** **b) Please clarify whether the LFG flow and the methane fraction in the LFG are measured on dry or wet basis;** **c) Please specify the calibration frequency of the electricity meter;** **d) Determination method of FCy is not in compliance with the stipulations of the meth. Please correct the measurement procedure as requested. Alternatively a request for deviation from an approved methodology as per EB 49, Annex 4 needs to be prepared and submitted to UNFCCC.** **CAR remains open.**
Corrective Action #4	7. The description of measurement methods for $t_{O2,h}$ has been clarified in section B.7.1. In addition, the information of the gas analyzer used to monitor w_{CH4} and $t_{O2,h}$ has been included in section B.7.1 10. The statement has been added at the end of STEP 2 in Section B.6.1. a) $FV_{RG,h}$, $fv_{CH4,h}$ and $fv_{CH4,FG,h}$ have been included in section B.7.1 as parameters which require to be monitored; b) The LFG flow and the methane fraction in the LFG are measured on a wet basis. These parameters have been modified in section B.7.1 of the PDD.; c) The calibration frequency of the eletricity meter will be strictly in line with manufacturer specifications. d) The measurement method of the FC_Y has been corrected in both section B.6.1 and B.7.1. Flow meter will be employed to measure FCy as per the "*Tool to calculate project or leakage CO2 emissions from fossil fuel combustion*" -Version 02. As a result, a request of deviation is unnecessary.

General	CAR B4
DOE Assessment #4	7. OK, the description of measurement methods for $t_{O2,h}$ has been improved in section B.7.1 and more precise the information about gas analysers has been included in section B.7.1; 9. OK, statement was duly included in section B.6.1; **a.** OK, parameters have been included in B.7.1. **b.** **For $FV_{RG,h}$ it is said measured in dry basis in the description but wet basis in the measurement method. Please clarify. In addition for parameters $fv_{CH4,h}$ and $FV_{RG,h}$, in the description of measurement methods it is said "*continuously measured on wet basis when the residual gas temperature exceeds 60 degrees*". Is it going to be measured on dry basis if the temperature of LFG is below 60 degrees? Please clarify, rephrase or remove underlined term;** c. OK, section B.7.1 has been modified accordingly; **d.** Section B.7.1 has been revised accordingly. **However, please provide information about the calibration of the flow meter;** **CL remains open**
Corrective Action #5	b) The description of $FV_{RG,h}$ has been corrected to indicate that the measurement is on a wet basis. Also, the following statement has been removed: "when the residual gas temperature exceeds 60 degrees" d) QA/QC procedures of FC,y in section B.7.1 has been modified to include the following information about the calibration of the flow meter: "The flow meter will be calibrated as per manufacturer specifications" .
DOE Assessment #5	b) OK, section B.7.1 has been revised accordingly. d) OK, QAQC is in line with respective tool. All monitoring paramters required by ACM001 version 11 and respective tools which are applicable to the project activity are contained in the Monitoring Plan and the means of monitoring them is feasible and in accordance with the requirements of methodology and tools. All ex-ante calculation values for monitoring parameters defined in chapter B.7.1 are reasonable and conservative. Project expected emission reductions real, measurable and give long-term benefits related to the mitigation of climate change **CAR is closed**

General	CAR B4
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CAR B5		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In B.7.2/Annex 4: 1. It is not necessary to list all monitored parameters, as they are (shall be) described in B.7.1; in addition, the list is not complete and correct. If kept, it must be updated and corrected to be exact in line with the parameters described in B.7.1; 2. Improve Figure 4, indicating the actual parameters which will be measured and respective location and measurement instruments/equipment. Define the lines as LFG, exhaust gases from flare, electricity input and fossil fuel input; 3. Please include description of overall project responsibility as well as responsibilities within the CDM monitoring system; 4. Please provide information about training, maintenance, data management and archiving procedures (including back-up) and data substitution procedures.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	In B.7.2/Annex 4: 1. The list has been completed to be in line with the parameters described in B.7.1; 2. Figure 4 has been updated, indicating the actual parameters which will be measured and respective location and measurement instruments/equipment. 3. Description of overall project responsibility has been included as well as responsibilities within the CDM monitoring system; 4. Information about training, maintenance, data management and archiving procedures (including back-up) and data substitution procedures has been included		

General	CAR B5
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	**1. As the list of the monitored parameters was kept in section B.7.2, parameters $PE_{EC,Y}$, $PE_{FC,Y}$ and $EF_{grid,CM,y}$ must be included, as they are listed in section B.7.1.** **2. Figure 4 shall be revised. Exhaust gases from flare, electricity input and fossil fuel input must be defined in the figure and furthermore, measurement instrument/equipments shall be included.** 3. A description of project management responsibility was included accordingly. Explanations about monitoring manager, project team and internal inspection had been added. 4. Training, maintenance, data management and archiving procedures (further back-up) were correctly detailed in section B.7.2. **CAR B5 remains open.**
Corrective Action #2 **On 01/June/2010**	1. Parameters $PE_{EC,Y}$, $PE_{FC,Y}$ and $EF_{grid,CM,y}$ have been included as part of the list in section B.7.2. 2. Figure 4 includes electricity consumption (point 6), gases from flare (point 13) and fossil fuel input (point 9). Figure 6 has been updated to reflect this. For details on the measurement equipment a line has been added referencing section B.7.1.
DOE Assessment #2 **On 11/June/2010**	1. Parameters $PE_{EC,Y}$, $PE_{FC,Y}$ and $EF_{gridCM,y}$ were included in the end of the list in section B.7.2 as they are monitored parameters. **2. Figure 6 has been updating according corrections done in figure 4. However, even the measurement equipments are evidenced in section B.7.1 they must be included in the figure.** **CAR remains open.**
Corrective Action #3 **On 14/June/2010**	All parameters evidenced in section B.7.1 are included in the figure and the description of parameter W_{CH4} and W_x has been included. We have included a reference on the title for figure 6 for details on the required measuring equipment. Also we included the variable $MG_{PR,y}$ to be monitored, and parameters Wx, $p_{n,j,x}$, and z as per the " *Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site*" version 04.

General	CAR B5
DOE Assessment #3 On 15/June/2010	5. The figure has been updated again and all parameters evidenced in section B.7.1 were included accordingly and as referenced in the respective methodology and tools. However, it shall be revised once some parameters are overlapped (even in normal view, without track change mode activated). 6. Parameters $MGPR_{,y}$, $p_{n,j,x}$ and z shall be excluded from section B.7.1 and B.7.2, as they are not monitored and not applied in the ex post calculations. 7. Relevant regulations for LFG project activities will not be monitored, so it shall be excluded from B.7.2. *8.* Furthermore, in parameters in B.7.1 and B.7.2 shall be included the statement "*data will be kept for 2 years after end of crediting period or last issuance of CERs for thje project activity".* **CAR remains open.**
Corrective Action #4	5. We have changed it of page, but it does not appear as overlapped. 6. Parameters $MGPR_{,y}$, $p_{n,j,x}$ and z have been excluded from section B.7.1 and B.7.2 7. The reference to monitor relevant regulation for LFG project activities has been deleted from section B.7.2 8. The statement "*data will be kept for 2 years after end of crediting period or last issuance of CERs for the project activity"* has been included in sections B.7.1 and B.7.2
DOE Assessment #4	5. The figure is clear now; **6.** Ok, parameters removed but **please delete parameters Wx, $p_{n,j,x}$ and z as they are not required to be monitored. Please revise figure 4 and 6 accordingly;** 7. Ok, reference deleted; 8. Ok, statement added accordingly; **CAR remains open.**
Corrective Action #5	6. Parameters **$p_{n,j,x}$ and z** have been deleted in both Section B.7.1 and Section B.7.2; The item "waste deposited" in figure 4 has been removed; Parameter **Wx, $p_{n,j,x}$ and z** have been deleted from Figure 6.
DOE Assessment #5	OK, PDD has been revised accordingly. It is likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity. Procedures for data management are identified and the QA/QC procedures are appropriate and sufficient to ensure the emission reductions achieved from the project activity can be reported ex-post and verified. **CAR is closed**

General	CAR B5
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL A1		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section A.4.3, please revise the section following guidance in the /GCP/. Please state the baseline scenario and clarify the number of flares.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	Section A.4.3 has been updated accordingly indicating that the baseline scenario is passive venting with no flares. The PDD has been revised to clarify this CL.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	Section A.4.3 was revised according to guidance/GCP/, stating that the baseline scenario is the continuation of the current situation (no gas recovery in the landfill). Furthermore, a list of the equipments involved in the installation of the flare and further equipments was also included. It was also stated that the technology involved is environmentally safe and sound. The equipments and technology involved could be checked by documents review by means of proposals/PRO1//PRO2//EPEP/ and quotations/QUO1//QUO2/, during the site visit. **However, please clarify the number of flares.** **CL remains open**		
Corrective Action #2	Section A.4.3 of the PDD has been updated to further clarify, within the text and list that the flaring system consists of the installation of one enclosed flare.		
DOE Assessment #2 On 09/June/2010	As confirmed by interviews during the site visit and by the proposals and quotations, it was correctly stated in section A.4.3 that just one flare will be installed. **However, section A.4.3 should include a more detailed description about the technology employed in the project activity, according guidance in the /GCP/. List of the description of the scenarios in /GCP/ shall be followed.** **CL remains open**		

General	CL A1
Corrective Action #3 On 22/June/2010	Section A.4.3 of the PDD has been updated to include more detail on the technology employed in the project activity, according to the guidance in the /**GCP/,** including type of flare and collection efficiency of the system. Since the scenario prior to the implementation of the project activity is the same as the baseline scenario, there is no description of installed capacities or modifications, since there are none. The section identifies equipment and systems that will be installed, monitored and their emission sources by the project activity.
DOE Assessment #3 On 29/June/2010	Project description is very general. Please specify: **1. Composition of waste** **2. Whether the leachate evaporator system will be implemented as part of the project activity or independently from it.** **3. Technical data of the equipment of the gas collection system and the flare (e.g. average lifetime, efficiency of the flare etc.).** **4. Background information on the determination of the collection efficiency.** **5. Explanation whether the equipment will be purchased from abroad and whether there is know-how transfer to the host country.** **CL remains open.**

<table>
<tr><th>General</th><th>CL A1</th></tr>
<tr><td>Corrective Action #4</td><td>
1. Composition of waste has been both included in section A.4.3 and updated in ER calculation spreadsheet based on the study provided to the DOE “Caracterização de residues,Getres. September 2010”.;
2. The leachate evaporator system will not be implemented ; Section D.1 has been updated accordingly;
3. Section A.4.3 of the PDD has been revised to include more technical details on the gas collection system and the flare.
4. The collection efficiency has been revised to 40% using the value cited from the prefeasibility study, which is based on the nature of the cover materials and leachate levels, and the resultant effect on LFG collection.
5. The equipment will be purchased from abroad .There is know-how transfer to the host country Brazil. (see table below). A statement has been added in Section A.4.3 of the PDD
<table>
<tr><th>SUPPLIERS</th><th>SERVICES</th><th>COUNTRY</th></tr>
<tr><td>Conestoga-Rovers & Associates (CRA)</td><td>pre-feasibility study</td><td>Canada</td></tr>
<tr><td>Jonh Zinc Company or BIOTECNOGAS S.r.l</td><td>Flare Supplier</td><td>USA / Italy</td></tr>
<tr><td>HSI (Houston Service Industries)</td><td>Blowers</td><td>USA</td></tr>
<tr><td>Landtec</td><td>Gas Analyzer</td><td>USA</td></tr>
<tr><td>Thermal Instruments</td><td>Flow Meter</td><td>UK</td></tr>
<tr><td>SIEMENS</td><td>Panels and PLC Controls</td><td>Germany</td></tr>
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</td></tr>
<tr><td>DOE Assessment #4</td><td>
1. OK, composition of waste was included in section A.4.3 and ER calculation was revised considering results of the study carried out by specialized third party (GESTRE);
2. OK, section D.1 updated accordingly;
3. OK, value used (40%) is the one in the pre-feasibility study prepared in April 2008 by Conestoga-Rivers & Associates for the World Bank and it is considered adequate by the validation team considering site physical conditions and covering materials;
4. OK, section A.4.3 has been revised accordingly;

It is likely that the project will be implemented according to the project description.

<u>CL is closed</u>
</td></tr>
<tr><td>Conclusion
Tick the appropriate checkbox</td><td>
☐ To be checked during the first periodic verification
☒ Appropriate action was taken
☒ Project documentation was corrected correspondingly
☐ Additional action should be taken
☒ The project complies with the requirements
</td></tr>
</table>

General	CL A2		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Please make clear in the PDD information about training and maintenance during the project operation.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	Information in these regards has been included in section B.7.2		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	Information about training and maintenance were included in section B.7.2. Please see CAR B5. **CL is closed.**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CL B1		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.1, please list all tools the methodology draws upon and their version.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	The PDD has been updated accordingly		

General	CL B1
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	All methodologies applied were listed in section B.1: ACM 0001"Consolidated baseline and monitoring methodology for landfill gas project activities." version 11; "Tool for demonstration and assessment of additonality" version 5.2 "Tool to determine project emissions from flaring gases containing methane" version 1 "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" version 1 "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion" version 02-; "Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site"version 04 -. "Tool to calculate the emission factor for an electricity system"version 02. UNFCCC website had been checked; all versions of the methodology and tools are current and valid. **CL is closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL B2		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.2, please list each applicability criteria of ACM001 and the tools utilized and describe why the project activity meets the applicable criteria, providing references and supporting evidences when necessary.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	The PDD has been updated accordingly		

General	CL B2
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	It was listed each applicability criteria of ACM0001 version 11, "Tool to determine project emissions from flaring gases containing methane" version 1, "Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site" version 4 and "Tool to calculate the emission factor for an electricity system". Methodologies and referenced tools and each applicability criteria were checked in UNFCCC website and the validation team could conclude that the project activity corresponds with the criteria listed in section B.2 of the PDD. **However, please include the version of the "Tool to calculate the emission factor for an electricity system".** **CL B2 remains open.**
Corrective Action #2 **On 01/June/2010**	The reference has been added to the text in the PDD for section B.2 to reflect that version 02 of the tool has been applied.

General	CL B2
DOE Assessment #2 On 10/June/2010	As the project will use electricity from the grid, "Tool to calculate the emission factor for an electricity system", version 2[/TEF/] was included in section B.2. Below the assessment of each applicability condition of ACM001 and tools: ***ACM0001 "Consolidated baseline and monitoring methodology for landfill gas project activities" ---Version 11*** *is applicable to landfill gas capture project activities, where the baseline scenario is the partial or total atmospheric release of the gas and the project activities include situations such as:* *(a) The captured gas is flared; and/or* *(b) The captured gas is used to produce energy (e.g. electricity/thermal energy). Emission reductions can be claimed for thermal energy generation, only if the LFG displaces use of fossil fuel either in a boiler or in an air heater. For claiming emission reductions for other thermal energy equipment (e.g. kiln), project proponents may submit a revision to this methodology;* *(c) The captured gas is used to supply consumers through natural gas distribution network.* ACM0001 is applicable to the Project because the baseline scenario is the total atmospheric release of the landfill gas and the project activity as listed in option a) of the methodology, involves the capture of the gas through a blower and the installation of a collection system to flare the landfill gas. **The *"Tool to determine project emissions from flaring gases containing methane"-Version 1*** *is applicable to projects where the residual gas stream contains no other combustible gases than methane, carbon monoxide and hydrogen; and the residual gas stream to be flared shall be obtained from decomposition of organic material (through landfills, bio-digesters or anaerobic lagoons, among others) or from gases vented in coal mines (coal mine methane and coal bed methane).* The project flares the residual gas obtained from decomposition of municipal organic waste and thus the tool is applicable to the project. **The "*Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site" version 05*** *is applicable in cases where the solid waste disposal site where the waste would be dumped can be clearly identified; in this case it is clearly identified at the project site. The second applicability condition states that the tool is not applicable to hazardous wastes* At the project site there are no hazardous wastes, it receives municipal solid waste from the populated section of the municipality of São Gonçalo, Rio de Janeiro; thus the project activity also meets the tool's applicability conditions.

General	CL B2
	The *"Tool to calculate the emission factor for an electricity system" version 02* *is applicable for the purpose of calculating project and leakage emissions in case where a project activity consumes electricity from the grid or results in increase of consumption of electricity from the grid outside the project boundary.* Electricity will be sourced from the grid for the project activity, thus the tool is applicable. **The "*Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion*" *version 2*** is applicable for the purpose of calculating the project CO_2 emissions from the combustion of fossil fuels in cases w here CO_2 emissions from fossil fuel combustion are calculated based on the quantity of fuel combusted and its properties. The projects will use a small quantity of fossil fuel (LPG) for the ignition of the flare only ad then the consumption will be monitored and the the tool is applicable. **The "*Tool to calculate baseline, project and/or leakage emissions from electricity consumption version 1*** *is applicable for the purpose of calculating project emissions in case where a project activity consumes electricity from the grid (Scenario A of Section I of the Tool).* Since electricity will be sourced from the grid the tool is applicable. **CL is closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL B3		
Classification	☐ CAR	☒ CL	☐ FAR

General	CL B3
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.3, please: 1. Include a statement about the project boundary, which is (a) the site where the biogas is captured and destroyed (i.e. the landfill) and (b) as energy is sourced from the grid, it includes all power plants connected to that grid; 2. In the table, baseline emissions from electricity consumption was marked "yes". Please correct it as there is no power consumption related to gas extraction in the baseline scenario; 3. In addition, please revise the figure accordingly, including the landfill site and the grid within the boundary and following guidance in the /GCP/.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	The statement about the project boundary, as per the methodology, has been included. The table has also been updated, along with the diagram as per the Guidelines for Completing the PDD.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	1. An statement about the project boundary was correctly included in section B.3 and it is in accordance with ACM 0001 boundary definition. The boundary of the project activity encompasses the landfill of Itaoca (where the gas is captured and destroyed) and as energy is sourced from the grid, all power plants connected to that grid are also included in the project boundary. 2. Baseline emissions from electricity consumption in table 3 was correctly changed to no, once there is no power consumptions related to gas extraction in the baseline scenario. Now, all sources and GHGs are included in the project boundary in compliance with the applied meth. 3. Figure 4 had been modified according /GCP/, including equipments, flow of mass and the monitored parameters. **CL is closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL B4		
Classification	☐ CAR	☒ CL	☐ FAR

General	CL B4
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.4, please: 1. Follow the Step-wise approach described in ACM001 (there is no need to repeat the same steps in sections B.4 and B.5); 2. Use the names of Alternatives given in ACM001 (LG1, LG2…); 3. Clearly document the outcome of each step; 4. As the outcome of the analysis, include a description of the baseline as given in ACM001.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	In section B.4: 1. The Step-wise approach described in ACM001 has been followed 2. The names of Alternatives given in ACM001 (LG1, LG2…) have been used 3. The outcome of each step has been documented 4.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	1. Steps 1 and 2 and its respective sub-steps were followed according to ACM001 and the "Tool for the demonstration and assessment of additionality" version 5.2 2. The names of alternative were modified in Sub-step 1a according ACM 001. LFG1: correspond to the project activity undertaken without being registered as a CDM project activity; LFG2: correspond to the atmospheric release of the landfill gas or partial capture of landfill gas and destruction to comply with regulations or contractual requirements, or to address safety and odour concerns; LFG3: LFG collection and utilization for power generation or gas supply. 3. The outcome of each step was clearly documented in the end of each sub-step. **4. An outcome of the analysis had not been included in the section. Please revise and correct it.** **Item 4 shall be corrected.** **CL B4 remains open.**
Corrective Action #2 **On 01/June/2010**	4. The outcome of the analysis has been included for section B.4, where LFG2 has been identified as the baseline scenario.

General	CL B4
DOE Assessment #2	4. The outcome of each step has been documented according to the "Tool for demonstration and assessment of additionality[TA/]. According to the analysis done in section B.4 and B.5, all alternatives are compliant with mandatory legislation and regulations. **However, in Sub-step 1a: If alternative 3 (LFG3) is considered as realistic and credible alternative, this scenario needs to be included in step 2 and/or 3 of the additionality assessment. Please note that in this case for this alternative a simply cost analysis could not be applied, because other economic benefits would be generated**; **CL remains open**
Corrective Action #3	The LFG3 is not considered as a plausible option and has been excluded from the alternative baseline scenario. Therefore, a simple cost analysis still applies for the investment analysis. The reasons for eliminating LFG3 as a plausible option has been provided in Sub-step 1a.
DOE Assessment #3	OK, very few landfills in Brazil, even with CDM, actually have generation of electricity with biogas, as this is usually economically viable only at a very large scale sites such as the landfills of the city of Sao Paulo which are CDM projects and have generation of electricity. In addition, as explained in the PDD, Itaoca landfill will be closed and thus the generation of biogas will be declining, which makes the alterantive LFG3 not plausible. Alternative 1 which is the project implemented without CDM is not plausible also as demosntrated in section B.5 through Simple Cost Analysis. Therefor the baseline is indeed LFG2: *Atmosphere release of the landfill gas.* **CAR is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL B5		
Classification	☐ CAR	☒ CL	☐ FAR

General	CL B5
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.5, please: 1. Step 1 is already described in section B.4 (there is no need to repeat it here); 2. The estimated costs of investment, in Sub-step 1a, would be more suitably placed in Sub-step 2b; 3. Provide precise reference and evidence for the investment costs; 4. Reference precisely the statement of CNI in the paragraph just below Table1; 5. Provide precise link/evidence for the Pesquisa Nacional de Saneamento Básico; 6. Provide reference number for each landfill listed in Sub-step 4b; 7. Clearly document the outcome of each step.
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	section B.5: 1. PDD has been updated eliminating a detailed description of Step 1 in Section B.5 2. The estimated costs of investment, have been placed in Sub-step 2b; 3. References and evidence for the investment costs have been provided; 4. 5. The link for the Pesquisa Nacional de Saneamento Básico has been provided; 6. The reference number for each landfill listed in Sub-step 4b has been provided 7.

General	CL B5
DOE Assessment #1 **DOE Assessment #1** *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	1. PDD was update correctly. Step 1 has been removed from section B.5 as it was already described in section B.4. 2. The estimated costs of investment have been correctly placed in sub-step 2b. 3. Source CARBON FINANCE ASSESSMENT MEMORANDUM, World Bank. May 13 2008, pg 14-16, has been given as reference for the investment costs. However, this evidence shall be sent to the validation team. 4. The statement of CNI has been referenced by the link of the source and could be assessed and verified by the validation team. 5. The link for the "Pesquisa Nacional de Saneamento Básico" has been correctly provided and could be checked and verified by the validation team. 6. The reference number of each landfill listed in sub-step 4b was correctly provided as it was verified in unfccc website. **7. The outcome of each step was not documented. Please revise and correct it.** **CL remains open.**
Corrective Action #2 **On 01/June/2010**	7. The outcome of each step has been documented, and the outcome of the analysis added.
DOE Assessment #2 **On 10/June/2010**	7. The outcome of each step has been documented according to the "Tool for demonstration and assessment of additionality /TA/. Please see comment in CL B4 above. However: **a) In Sub-step 2b:** **i. This section includes also elements of a barrier analysis. Please remove them from that section and include them in a barrier analysis or section B4, or remove them altogether; Only financial information related to Simple Cost analysis should remain;** **ii. Different exchange rates have been applied in the simple cost analysis. Please clarify/revise using exchange rates consistent with the investment decision;** **b) In Sub-step 4, please specify whether there are any projects applying the same technology in the country that are not CDM projects** **CL remains open**

General	CL B5
Corrective Action #3 On 20/September/2010	b) i. The content pertinent to barrier analysis has been removed from Sub-step 2b as requested; ii. Exchange rates for Euro /dollar and Real/ dollar have been fixed to the ones published on 20/07/2010 (the starting date of the project activity) in regard to the consistency for the investment decision; In addition, before converting to Euro, all costs have been converted to constant 2010 prices using inflation rates. New file on simple cost analysis sent to the DOE c) More details on common practice have been added in Sub-step 4b of the PDD.
DOE Assessment # 3	a) i. OK, Sub-step 2b has been revised as requested; ii. It is appropriate to use exchange rates consistent with investment decision and also to consider constant 2010 prices using inflation rates. However, some parts of supporting excel sheet that were in English now were presented in Portuguese. **Please present excel in English. In addition please provide supporting document CARBON FINANCE ASSESSMENT MEMORANDUM. Moreover, in Table 4, section 4 of PDD the value for Biogas Plant is not consistent with excel sheet. Please revise.** b) An statement was included in Sub-step 4b that there are no landfills in Brazil with LFG capture and power generations which developed without CDM incentives. The validation team has not identified any landfill project with landfill capture and flaring developed without carbon incentives and it is reasonable to assume that there is not any, as there is no legislation requirements for LFG capture and flaring in Brazil and the investment for this type of project is high and it generates no revenues besides CERs. **CL remains open**
Corrective Action #4	- CLB5 Background financial cost data file has been revised to present all sheets in English - The reference to the CFAM in the PDD has been removed since the evidences for the cost estimates have been provided directly to the DOE. Therefore, there is no need to include the reference to the CFAM in the PDD. - Table 4 in section 4 of the PDD has been revised to match the value for the biogas plant included in the excel sheet. It is to be noted that was a typo, since the total value in the PDD was the same as in the spreadsheet.

General	CL B5
DOE Assessment #4	Financial srpreadsheet has been revised and it is entirely in English now. The reference to the CARBON FINANCE ASSESMENT was removed from PDD. All suporting documents referenced in the excel sheet have been submitted to DOE and values cross-checked. The editorial error in Table 4 has been corrected and it now mataches the values in excel sheet. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☒ Additional action should be taken ☒ The project complies with the requirements

General	CL B6		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	Although an unprotected Excel spreadsheet for the investment costs was provided, it should clearly contain the references for the sources of data for the costs applied, supported by evidences		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	References and supporting documentation sent to the DOE on April, 12, 2010		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	An unprotected Excel spreadsheet has been provided to the validation team. However, it is necessary reference in sheet "Resumo" all values applied, according the background evidence sent to the validation team. And all items, sheets, comments, etc shall be written in English. **CL remains open**		
Corrective Action #2 **On 01/June/2010**	Spreadsheet with references to the evidence, and supporting documentation has been provided.		
DOE Assessment #2 **On 09/June/2010**	An updated spreadsheet was provided to the validation team with the respective evidences/PRO1//PRO2//QUO//EPEP/. However, for conservative assumption, do not round up the values in sheet summary, please apply the same values that are in the respective sheets. Then, correct the value in table 4 from the PDD. **CL remains open**		
Corrective Action #3 **On 14/June/2010**	Values in sheet summary correspond now exactly to the respective sheets. Table 4 from the PDD updated		
DOE Assessment #3 **On 15/June/2010**	See comment in CL B5. **CL remains open**		

General	CL B6
Corrective Action #4	Table 4 in the PDD has been corrected to include non-rounded values
DOE Assessment # 4	Value in Table 4 of PDD now match exactly the values in excel sheet. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL B7		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section B.8, the date shall be updated		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	The PDD has been updated		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	Date in section B.8 was correctly updated to 05/03/2009. **CL is closed.**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CL B8		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	As there are already published updated data (2009) by Brazilian DNA for OM and BM, they must be applied, in Annex 3.		

General	CL B8
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	The calculation has been updated in both ER spreadsheet and PDD, and project emissions numbers have been updated on the PDD as they are lower.
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	The latest available data published by the Brazilian DNA was from year 2009 and it has been used in the ex-ante estimate of ERs. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL C1		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section C.1.1, please reference the starting date. In addition, please put the date in the format DD/MM/YYYY, as required by the Guidelines for completing the PDD.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	The PDD has been revised to clarify this CL.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	Please, update the starting date as during the site visit it was stated that the decision to implement the project will only be taken after registration. In addition, please reference it in section C.1.1. **CL C1 remains open.**		

General	CL C1
Corrective Action #2 On 01/June/2010	We believe there is a misunderstanding about the project start date. At the site visit the project developer thought this to be the date when ERs would start to be generated, but according to CDM Glossary of terms, the project start date is defined as: "(…)the start date shall be considered to be the date on which the project participant has committed to expenditures related to the implementation or related to the construction of the project activity", thus the date has been revised to the date when the first real investment is made, which in this case will be 18/6/2010. A letter from the project developer has been attached to this submission to clear the misunderstanding, and this has been referenced in section C.1.1 of the PDD
DOE Assessment #2 On 09/June/2010	The validation team agrees with the update of the project start date and had reviewed the letter/PSD/ stating the change. As stated in the Guidelines on the demonstration and assessment of prior consideration of CDM/GDAPC/ (EB 49, Annex 22), para 2, for new project activities, if a PDD has been published for global stakeholder consultation before the project activity start date (as this case), a notification informing about the project activity for Host Party DNA or unfccc secretariat is not necessary. **However, it is necessary to send to the validation team any evidence about the contracts that states the project starting date on June 18th 2010.** **CL remains open.**
Corrective Action #3 On 14/June/2010	The draft contract for purchase and transport of clay has been attached to this response
DOE Assessment #3	As the project starting date is in the future, and there is no signed contract stating this date, validation team could check the draft of the contract of clay purchase/PSD/ and its transport/PSD/. As declared by representative of the PP, these contracts will be signed on June 18th 2010. However, the statement "expected date of signature of contract with supplier" shall be included in the referenced date. Furthermore, as the expected date has passed, the contracts shall be submitted to the validation team and referenced as evidence in section C.1.1. **CL remains open.**
Corrective Action #4	Attached to this submission we are providing the the contract of transport of clay, and the first invoice for purchase of clay (20/07/2010). Therefore the staring date has been updated to this date.

General	CL C1
DOE Assessment #4	Please clarify whether the coverage of clay is related to the project activity only or if this measure would be required anyway to close the landfill. If the later is the case the contract would be not appropriate to identify the starting date. **CL remains open.**
Corrective Action #5	The coverage of clay is directly related to the project activity. It is the preliminary step for the proposed project activity. For a dumpsite, it is not obliged for the project participants to pave coverage of clay on the top of the landfill. (The aforementioned delineation has also been added in Section C.1 in regard to consistency)
DOE Assessment #5	OK, according to the concession contract the clay coverage is not required and it has been clarified in the PDD that it will be implemented due to the project activity with the function of avoiding escape of LFG to atmosphere and hence allow a maximum possible rate of desagging efficiency and LFG capture. **CL is closed**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL C2		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	It is necessary to describe in the document how was defined this expected life time of 21 years.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	Although initially the expected lifetime of the project was defined as 21 years, because of the lifetime of the equipment, this number has been changed to 19.25 years. The concession of the dumpsite was granted on August 10, 2004 for an initial period of 15 years, which can be extended 10 more years. Considering that the project starting date is 1 May 2010, the duration of the project activity is 19.25 years. Supporting documentation on the length of the concession contract was sent to the DOE on April 12, 2010		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	Contract of Concession/OLT/ of Itaoca dumpsite has been checked by the validation team. In the 3rd clause (page 2) of the contract is stated that the concession is for a period of 15 years and it can be renewed for more 10 years.. **However, please reference the document in section C.1.2.** **CL C2 remains open.**		

General	CL C2
Corrective Action #2 On 01/June/2010	The document for the contract of the Concession has been referenced in section C.1.2 of the PDD.
DOE Assessment #2 On 09/06/2010	Footnote 6, in section C.1.2, was included regarding the operational life time of the project activity. However, it is necessary to reference the exactly document that reference this life time (Contract of Concession/OLT/). **CL C2 remains open**
Corrective Action #3 On 14/June/2010	It has been included in the footnote the exact document provided to the DOE as an evidence, including the concession number
DOE Assessment #3 On 15/June/2010	The Concession contract/OLT/ (Contrato de concessão PMSG No 001/2004) was referenced accordingly as evidence of the operational lifetime of the project activity in section C.1.2. However, according to /GCP/, the expected operation life time of the project activity shall be described in years and month. Please correct it throughout the document. **CL remains open**
Corrective Action #4	The expected operation life time of the project activity has been expressed in years and months.
DOE Assessment #4	If the landfill concession starting date is 10 August 2004, it is understood that the concession will finish in August 2029 (25 years). If the project will be implemented in 01/01/2011 as reported in section C.2.2.1 and the project operational lifetime project activity is limited by the concession period (08 Aug 2029) then it means that it can operate for more than 28 years. Please clarify. **CL remains open**
Corrective Action #5	The starting date of the project activity is July 20, 2010 as reported in section C.1.1, and the project operational lifetime project activity is limited by the concession period up to 10 Aug 2029). Therefore it can operate only 19 years and 21 days. This explanation has been made clearer on footnote 13 of the PDD.
DOE Assessment #5	OK, text on footnote 13 has been revised and it is clear now how the operational lifetime was defined. It is important to note that the lifetime is also in line with the operational lifetime range given in section A.4.3, as per the equipment manufacturer John Zinc (see footnote 4 in section A.4.3). **CL is closed**

General	CL C2
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL D1		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section D.1, please: 1. Clarify that an EIA is not required by the project activity as Itaoca has been operating for a long time and that a request for a installation license has been submitted to FEEMA; 2. Provide precise reference for the GHG inventory done by CETESB;		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	In section D.1: 1. The clarification has been included 2. The reference has been provided		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	**1.** As Itaoca dumpsite has been operating for a long time, an EIA is not required by the authorities. Validation team could check the installation license request/IL/ submitted to FEEMA and the environmental study done by Arcadis/ES/. **However, please clarify about the installation license in section D.1.** 2. The reference for the GHG inventory done by CETESB were clearly provided and could be verified by the validation team. **CL D1 remains open**		
Corrective Action #2 **On 01/June/2010**	Section D.1 has been modified to clarify the installation license of the project		
DOE Assessment #2 **On 09/June/2010**	Section D.1 has been updated accordingly stating that an installation license had been requested to INEA. The confirmation of receipt of the request/IL/ could be checked during the site visit and could be verified the request for the license to the environmental state agency of the Rio de Janeiro. The environmental authority has not replied yet. Please see FAR D1. **CL is closed**		

General	CL D1
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	CL D2		
Classification	☐ CAR	☒ CL	☒ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section D.2, please clarify in the PDD the licenses necessary for the enterprise.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	The PDD has been updated accordingly		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	It was clarified in section D2 that the only license necessary for the enterprise is the installation license requested to FEEMA (Secretary of the Environment of the State of Rio de Janeiro). The request/IL/ issued on 2008/12/05 was verified during the site visit by the validation team, and all documents/BP//ES//QR//EPEP/ required by FEEMA were also checked during the visit. **CL is closed**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	CL E1

Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section E.1, please include a statement that resolution #7 of CIMGC has been followed. Provide a website address where the PDD in is Portuguese as well as the document required by Annex II of the Resolution is hosted till registration of the project.		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	The PDD has been updated accordingly		

DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	Section E1 was updated correctly. PP followed accordingly resolution #7 of CIMG. Documents required were checked in www.haztec.com.br website. PDD will be published in Portuguese till registraton of the project. **CL is closed.**
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements

General	**CL E2**		
Classification	☐ CAR	☒ CL	☐ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	In section E.3, please clarify "how" the suggestion of FBOMS will be treated by the project developer;		
Corrective Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.* **On 12/Apr/2010**	The PDD has been updated to include comments by FBOMS – Brazilian NGOs Forum.		
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* **On 14/may/2010**	Section E3 was updated. PP correctly justifies that the project activity already follows the requirements of the World Bank, that cover environmental, social and related standards, and the implementation of the Gold Standard provisions will not be required. **CL is closed.**		
Conclusion *Tick the appropriate checkbox*	☐ To be checked during the first periodic verification ☒ Appropriate action was taken ☒ Project documentation was corrected correspondingly ☐ Additional action should be taken ☒ The project complies with the requirements		

General	**FAR D1**		
Classification	☐ CAR	☐ CL	☒ FAR
Description of finding *Describe the finding in unambiguous style; address the context (e.g. section)*	As the definitive installation license had not been issued yet, it will be necessary check it up during the first periodic verification.		

General	FAR D1
Proposed Action #1 *This section shall be filled by the PP. It shall address the corrective action taken in details.*	License will be submitted to DOE during validation
DOE Assessment #1 *The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.*	**Proposed action accepted**
Conclusion *Tick the appropriate checkbox*	☒ To be checked during the first periodic verification ☐ Appropriate action was taken ☐ Project documentation was corrected correspondingly ☐ Additional action should be taken ☐ The project complies with the requirements

5 VALIDATION ASSESSMENT SUMMARY

5.1 General Description of the Project Activity

5.1.1 Participation

LOA

At the present validation stage, the LoA from Brazil and Spain could not be obtained, as a positive validation opinion from a DOE is a pre-requisite of the Brazilian DNA for the issuance of the LoA and the LoA from the host country (Brazil) is a pre-requisite from the Spanish DNA, for the issuance of the LoA of Spain. The Request for Registration will only be submitted after the LoAs from Brazil and Spain are issued.

Project Participants

Project Participants are **Haztec Tecnologia e Planejamento Ambiental S.A**. and **International Bank for Reconstruction and Development (IBRD) as Trustee of the Spanish Carbon Fund (SCF).**

All information provided in section A.3 and Annex 1 of the PDD and in the MoC are consistent.

5.1.2 Contribution to Sustainable Development

As Itaoca was basically an open dump before the new concession contract with PP, by partially managing the site, there are reduced environmental impacts related to uncontrolled leachate contamination and also related to odours that affect the closest communities and surrounding area.

The project will also create jobs during construction and operation.

The national confirmation to the sustainable development will only be confirmed with the LoA issuance by Brazilian DNA, which will only be issued based after conclusion of this Validation Report, as explained in 5.1.1 above.

5.1.3 PDD editorial Aspects

Version 3.2 of the CDM -PDD template has been correctly applied. The PDD has in general been filled in accordance with the PDD Guidelines. Nevertheless several editorial changes were discussed with the PP in order to improve the PDD.

5.1.4 Technology to be employed.

The description of the project in the PDD is complete and accurate. The project activity involves the development of the landfill gas (LFG) collection and flaring potential to avoid emission of methane in the atmosphere. First, the LFG will be collected and then it will reach pre-treatment system, in which the moisture and impurity of landfill gas will be removed. Finally the landfill gas will be transported with the use of a blower, to the enclosed flare for combustion.

The technology employed is environmentally safe and sound and will contribute to climate change mitigation.

5.1.5 Small Scale Projects

Not applicable, the project is not a small scale project.

5.2 Project Baseline, Additionality and Monitoring Plan

5.2.1 Application of the Methodology

The project applies the currently valid version (11) of ACM0001, which also refers to the latest version of the “Tool to determine project emissions from flaring gases containing methane”, version 1. In order to calculate emissions from electricity consumption, the methodology refers to “Tool to calculate baseline, project and/or leakage emissions from electricity consumption”, version 1, which also refers to the version 2 of the “Tool to calculate the emission factor for an electricity system”. In order to calculate emissions from fossil fuel combustion, is applied the “Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion”, version 2. For demonstrating the additionality the applicable approved tool used is the “Tool for demonstration and assessment of additonality”, version 05.2. “Tool to determine project emissions from flaring gases containing methane” version 1 and “Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site” version 4 are also applied to determine project emissions. All methodologies and tools applied are currently valid and approved according to the UNFCCC CDM website. All applicability conditions are met, as described in section B.2 of the PDD, version 4. The project is in line with all requirements and stipulations mentioned in all sections of the applied meth (see also check list question B.1.4 below in the Annex). The project activity is expected to result in some emissions, related to electricity consumption and fossil fuel combustion (small amount for start of the system only).
As this project activity does not consider any equipment transferred from another activity and no existing equipment is transferred to another activity, total leakage is zero.

5.2.2 Project Boundary

The project boundaries (geographic and also related to GHG sources and gases) are correctly given in PDD, as described in section B.3 of the PDD. The meth does not allow for a choice of which GHG sources / sinks are included, and there are not any other sources which are impacted by the project which are not addressed by the applied meth.

5.2.3 Baseline Identification

The description of baseline identification in the PDD is transparent and verifiable. According to the indications of ACM0001, all plausible alternatives were identified in section B.4 of the PDD. The alternatives are the project activity (capture of landfill gas and its flaring and/or its use – LFG1) not undertaken as a CDM project, The business as usual scenario (atmospheric release of the landfill gas – LFG2) and LFG collection and utilization for power generation or gas supply (LFG3). As indicated in section B.4 of PDD, LFG 3 is not a plausible scenario and as demonstrated in section B.5, LFG1 is not financially attractive. Hence the baseline scenario is LFG2 “Atmospheric release of the landfill gas”.

A detailed assessment of the Alternatives is given in Table A-2, Annex 2 below. See also section B.3 of Annex 1 below and the resolution of the findings.

5.2.4 Calculation of GHG Emission Reductions

The calculation of ERs is done as per applied meth. All data not to be monitored were correctly applied and values were cross-checked with public available data or supporting documents and are thus deemed precise and conservative. The values for the monitoring parameters are plausible. The estimation of emission reductions is deemed plausible and conservative, as described in detail in section B.5 of Annex 1 below.

The amount of waste used for calculation ex ante was estimated from a daily average of waste received in the landfill (800 t), for the days that the landfills works (280 days/year)

The composition of the waste was estimated by collecting samples from the dump site and analyzed for an estimative of the existing materials. This study/FS/ was conducted by a third party in the dump site and was verified by the validation team.

During the site visit was evidenced that there was no methane combustion in the baseline, the methane was released in the atmosphere with no control, so it was not considered in the calculation for emission reduction.

For ex ante estimative was considered a value of 40 % for collection efficiency and 90% for the efficiency of the flare. Both values are considered reasonable for a conservative calculation.

5.2.5 Additionality Determination

Consideration of CDM in decision making (if project start before validation)

The reported starting date in section C.1 is 2010-07-20 which is the date when PPs commited to significant expenditures related to the implementation of the project activity, marked by the purchase of Clay to cover the landfill area. It is important to point that such coverage is not required by the concession contract and its only function is to prevent leakage of LFG to the atmosphere, improving the collection efficiency of the project.

Application of methodology / methodological tools

The additionality was justified in section B.5 of the PDD in accordance with the requirements derived from ACM0001 using the "Tool for demonstration and assessment of additionality"-Version 5.2.

Alternatives

The PDD contains a complete list of all realistic alternatives to the project scenario, including the project activity not undertaken as a CDM project activity and the continuation of the status quo. A detailed assessment of the Alternatives is given in Table A-2, Annex 2 below and the resolution of the findings.

Investment analysis

The chosen approach for demonstrating the project's additionality is the simple costs analysis (Option I). This is an appropriate analysis method because the project activity will not receive income from the sale of electricity (the project activity will not export electricity to the grid); the implementation of the project activity will have no benefits other than CDM revenues.

Barrier analysis

No barrier parameters are used for additionality justification; therefore, this section is not applicable.

Common practice analysis

The defined region established in the PDD for comparison with other industries is the host country, and it is appropriate because there are only few existing landfill projects that implemented methane capture and flaring in Brazil. All of the projects in Brazil that implemented installed methane collection and flaring systems, electric generation systems, or evaporator leachate treatment systems, listed in section B.5, of the PDD, do so because of the incentive provided by the CDM. No significant

differences were observed in the projects analyzed. The validation team has not identify any landfill collection and flaring project in Brazil implemented without CDM.

Summary

As described in the PDD and assessed in detail in table A-4 in the Annex 2, the additionality is based on the "Tool for the demonstration and assessment of additionality". According to the common practice analysis, the project activity represents only a small portion of the real scenario of the landfill operation in Brazil, and as demonstrated in the simple cost analysis, a high investment is necessary to implement the project activity, with no income generated apart from sale of CERs. The project is additional.

5.2.6 Monitoring Methodology

The monitoring plan in the PDD is in compliance with the applied monitoring methodology ACM0001 version 11 and it is assessed by the validation team as adequate and feasible. For details see section B.6 of the Annex below and the resolutions of findings above.

5.2.7 Monitoring Plan

The monitoring plan in the PDD covers all parameters which have to be monitored w.r.t. the project boundary in line with monitoring methodology ACM0001 version 11, and the monitoring arrangements are assessed by the validation team as adequate and feasible. For details see section B.6 of the Annex below.

As permitted by the methodology, as a simplified approach PP will only measure the volumetric fraction of methane and consider the difference of 100% as being nitrogen (N_2)

5.2.8 Project Management Planning

The project management planning is appropriate for the purpose of the project monitoring, as described in section B.7.2 of the PDD.

5.2.9 Crediting Period

The choice of the ten years fixed crediting period was unambiguously given in the PDD and corresponding calculation spreadsheet. The crediting period starting date is 01 January 2011, but not before the registration date and that is deemed appropriate.

5.2.10 Environmental Impacts

There are no requirements by the Brazilian legislation for an EIA, once the project had been operating for many years as São Gonçalo's municipality dump site.
However, an installation licence[/IL/] was required for all activities that will be developed in the process of the environmental recovery of the area of the dumpsite and activities for exploration of the landfill gas collection and flaring. See FAR D1.

5.2.11 Comments by Local Stakeholders

Relevant local stakeholders have been invited to comment on the project, as correctly described in section E of the PDD. A summary of comments is also available in the PDD and it was verified by the validation team. No negative comments were received.

6 VALIDATION OPINION

World Bank Group (WB). has commissioned the TÜV NORD JI/CDM Certification Program (CP) to validate the project: "ITAOCA LANDFILL GAS PROJECT" with regard to the relevant requirements of the UNFCCC for CDM project activities, as well as criteria for consistent project operations, monitoring and reporting. UNFCCC criteria include article 12 of the Kyoto Protocol, the modalities and procedures for CDM (Marrakech Accords) and the relevant decisions by COP/MOP and CDM Executive Board

In the course of the pre-validation 5 Corrective Action Requests (CARs) and 16 Clarification Requests (CLs) were raised and successfully closed. In addition 1 FAR has been issued and should be reviewed during the first verification.

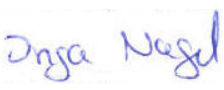
The review of the project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and review of comments by parties, stakeholders and NGOs have provided TÜV NORD JI/CDM CP with sufficient evidence to validate the fulfilment of the stated criteria.

In detail the conclusions can be summarised as follows:

- The project is in line with all relevant host country criteria (Brazil) and all relevant UNFCCC requirements for CDM. At the time of the completion of the validation the LoA is pending. For the Brazilian DNA a positive validation opinion is a prerequisite for the host government approval and thus the LoA could not be considered at the present validation stage. Furthermore, the LoA from the host country (Brazil) is a pre-requisite for the issuance of the LoA by the Spanish DNA.The request for registration will not be made until the LoA from both parties are issued and verified by the validation team.
- The project additionality is sufficiently justified in the PDD.
- The monitoring plan is transparent and adequate.
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 258,869 tCO_2e are most likely to be achieved within the 10 years fixed crediting period (1st January 2011 to 31st December 2020).

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation.

Essen, 2010/10/12



Inga Nagel

TÜV NORD JI/CDM CP

Validation Team Leader

Essen, 2010/10/12

Martin Saalmann

TÜV NORD JI/CDM CP

Final Approval

7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document
/**BP**/	Biogas Project
/**DOE**/	Signed contract with the World Bank Group, International Bank for Reconstruction and Development for the project activity.
/**EEF**/	Efficiency of extraction and flare: - Technical Specification – manufacturer John Zinc - Pre-Feasibility Study for the preparation of landfill gas projects in Latin America and the Caribbean. Itaoca landfill site São Gonçalo, Rio de Janeiro, Brazil. April 2008 -
/**ERPA**/	Emission Reduction purchase agreement between Nova Gerar Ecoenergia Ltda.and International Bank for Reconstruction and Development, as Trustee of Spanish Carbon Fund. Issued on 2008, 19th November.
/**ES**/	Environment Study from Itaoca Landfill. Arcadis Hidro Ambiente S.A. March 2008.
/**IL**/	Installation licence to the landfill gas capture. Process number E 07/202754/2007 to FEEMA – Rio de Janeiro state. Issued on 2008/12/05
/**EPEP**/	Proposal for Preparation of Executive Project and Technical Assistance for the System of Capture and Flaring of the Biogas Produced for the Waste Treatment Center - CTR - Alcântara – Sao Gonçalo – Rio de Janeiro. # 312/00735/09. Issued on May 2009.
/**FS**/	Prefeasibility Study for the preparation of landfill gas projects in Latin America and Caribbean. Ref N. 049664 (5). April 2008.
/**OLT**/	Operational life time evidence. Concession contract between Nova Gerar and São Gonçalo Municipality. Process number 001/2004. Issued on 2004/08/10
/**PDD**/	- Draft Project Design Document named “Itaoca Landfill Gas Project” Version 1. Hosted from 2009/03/05 to 2009/04/03. - Draft Project Design Document named “Itaoca Landfill Gas Project” Version 2, on 2010/04/09. - Project Design Document named “Itaoca Landfill Gas Project” Version 3, on 2010/06/01. - Project Design Document named “Itaoca Landfill Gas Project” Version 4,

Reference	Document
	on 2010/10/01.
/**PSD**/	- Invoice regarding clay purchase, S.S Salles Extração de Argila, 2010-07-10 - Transport of Clay contract between Central de Tratamento de Resíduos Alcântara S.A. and Charles de Oliveira Felizardo. N. 001/2010. Year 2010 - Draft of Clay Contract between Central de Tratamento de Resíduos Alcântara S.A. and Macroaction Construtora e Terraplanagem Ltda. N. 001/2010 year 2010
/**PRO1**/	Proposal for the project installation. Proposal (John Zinc) JZB 511/06 Rev. 01. Issued on 2006/11/30.
/**PRO2**/	Proposal for the project installation. Proposal (John Zinc) JZB 470/06 Rev. 04. Issued on 2006/08/15
/**QUO**/	AFLON quotation PEAD. Reference number 01380/ 09-A. Issued on 2009/05/15. LANDTEC quotation number BR 07109. Issued on 2009/02/27. LANDTEC quotation number BR 12709. Issued on 2009/05/13. Perfurasolo quotation number DVBG 17042009. Issued on 2009/04/17. 3 C Rios Serviços de construções e instalações quotation number 052865. Issued on 2009/04/30.
/**QR**/	- Classification of Residues - Study and Report by GESTRE – University of Rio de Janeiro – September 2010 -
/**SHCP**/	Stakeholder consultation process evidences: • Proof of receipt of invitation letters • Letters from FBOMS and Environmental Department of Rio de Janeiro state.
/**XLS1**/	Investment costs calculation spreadsheets
/**XLS2**/	Emission reduction calculation spreadsheets

Table 7-2: Background investigation and assessment documents

Reference	Document

Reference	Document
/**NBR 8419**/	Brazilian Association of Technical Standards NBR 8419 and ABNT 1984 about landfill operation in Brazil.
/**ACM1**/	ACM0001: Consolidated baseline and monitoring methodology for landfill gas project activities. Version 11 EB 47.
/**CPM**/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)
/**GCP**/	UNFCCC: Guidelines for completing CDM-PDD and CDM-NM
/**GDAPC**/	Guidance on the demonstration and assessment of prior consideration of the CDM. Version 03, EB49, Annex 22.
/**GT**/	Glossary of CDM terms. Version 05 EB 47
/**IPCC-GP**/	IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000
/**IPPC-RM**/	Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual
/**KP**/	Kyoto Protocol (1997)
/**MA**/	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))
/**PDD-T**/	Project Design Document Form (CDM PDD) - Version 03
/**TA**/	Tool for the demonstration and assessment of additionality. Version 5.2 EB 39
/**TEC**/	Tool to calculate baseline, project and/or leakage emissions from electricity consumption. Version 1 EB 39
/**TEF**/	Tool for calculating the emission factor of an electricity system – Version 2 EB 50, Annex 14.
/**TFF**/	Tool to calculate project or leakage CO2 emissions from fossil fuel combustion. Version 2 EB 41
/**TME**/	Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site. Version 4 EB 41
/**TPE**/	Tool to determine project emissions from flaring gases containing methane. Version 01 EB 28

Reference	Document
/**VVM**/	Validation and Verification Manual (Version 1, Annex 3; EB 44)

Table 7-3: Websites used

Reference	Link	Organisation
/**bcb**/	http://www4.bcb.gov.br/pec/taxas/port/PtaxBolOp1.asp?idpai=TXCOTACAO	Central Bank of Brazil
/**dna**/	http://cdm.unfccc.int/DNA/view.html?CID=30	Inter-ministerial commission of climate global change (Brazil DNA)
/**FEEMA**/	http://www.inea.rj.gov.br/index/index.asp	Environmental Department from Rio de Janeiro State
/**ipcc**/	www.ipcc-nggip.iges.or.jp	IPCC publications
/**mct**/	http://www.mct.gov.br	Brazilian Technology and Science Department
/**unfccc**/	http://cdm.unfccc.int	UNFCCC

Table 7-4: List of interviewed persons

Reference	MoI[1]		Name	Organisation / Function
/**IM01**/	V, E	☒ Mr. ☐ Ms	Eduardo Gaiotto	Novagerar Ecoenergia LTDA Project Manager
/**IM01**/	V	☒ Mr. ☐ Ms	Marcelo de Souza Vieira	Itaoca Landfill Operational Manager
/**IM01**/	V	☐ Mr. ☒ Ms.	Lorena A. De Oliveira	Itaoca Landfill Social Assistant

[1)] Means of Interview: (**T**elephone, **E**-Mail, **V**isit)

ANNEX

A1: Validation Protocol

A2: Assessment of Baseline Identification

A3: Assessment of Financial Parameters

A4: Assessment of Barrier analysis

A5: Outcome of the GSCP

A6: Appointment certificates of the team members

ANNEX 1: VALIDATION PROTOCOL

Table A-1: Requirements Checklist

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
A. General Description of Project Activity				
A.1. Approval *The written approval of the parties involved is a mandatory requirement*				
A.1.1. Has the project provided written approvals of all parties involved? (EB 51 Annex 3 §44) *Indicate whether a letter of approval has been received, with a clear reference to the supporting documentation.* *Indicate whether this letter was provided to the DOE by the project participants or directly by the DNA*	At the present validation stage, the LoA from Brazil and Spain could not be obtained as a positive validation opinion from a DOE is a pre-requisite of the Brazilian DNA for the issuance of the LoA and the LoA from the host couthry (Brazil) is a pre-requisite from the Spanish DNA for the issuance of the LoA of Spain. The Request for Registration will only be submitted after the LoAs from Brazil and Spain are issued.	/PDD/ /dna/	OK	OK
A.1.2. Are the approvals issued from orgainsations listed as DNAs on the UNFCCC CDM website? (EB 51 Annex 3 §§ 44, 47, 48, 49 (b), 49 (c), 53) *Indicate the means of validation employed to assess the*	The DNA of Brazil is the Inter-ministerial commission of climate global change, and from Spain is the Spanish Climate Change Office, Ministry of Environment and Rural and Marine. They are listed in the UNFCCC web site as DNA. Nevertheless, please refer to A.1.1	/PDD/ /dna/ /unfccc/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
authenticity, i.e. in case of doubt whether LoA has been verified with the DNA. Further describe which entity submitted the LoA for validation.				
A.1.3. Do the written approvals confim that the corresponding party is a Party to the Kyoto Protocol? (EB 51 Annex 3 §45, (a))	Please refer to A.1.1.	/PDD/ /dna/ /unfccc/	OK	OK
A.1.4. Do the written approvals confim that the participation is voluntary? (EB 51 Annex 3 §45, (b))	Please refer to A.1.1.	/PDD/ /dna/ /unfccc/	OK	OK
A.1.5. Does the written approval from the host country confim that the project contributes to the sustainable development in the country? (EB 51 Annex 3 §45, (c))	Please refer to A.1.1.	/PDD/ /dna/ /unfccc/	OK	OK
A.1.6. Do the written approvals refer to the precise project title in the PDD submitted for registration or an additional specification of the project activity, e.g. PDD version number? (EB 51 Annex 3 §§45 (d), 50)	Please refer to A.1.1.	/PDD/ /dna/ /unfccc/	OK	OK
A.1.7. Are the written approvals unconditional with regard to A.1.3 to A.1.6? (EB 51 Annex 3 §46)	Please refer to A.1.1.	/PDD/ /dna/ /unfccc/	OK	OK
A.1.8. Is the information regarding the project participants listed in section A3 and in Annex 1	*Description:* Yes, the information in section A3 and Annex 1 is consistent.	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
of the PDD internally consistent to each other? (EB 51 Annex 3, § 51)	*Justification of evidences:* The PDD were checked. *Conclusion:* No discrepancies were identified.			
A.1.9. Are all project participants listed in the PDD approved at least by one Party involved? (EB 51 Annex 3, § 51) *Indicate whether the participation of the project participant(s) has been approved by a Party to the Kyoto Protocol.* *Describe the means of validation employed to draw this conclusion.*	Please refer to A.1.1.	/PDD/ /dna/ /unfccc/	OK	OK
A.1.10. Are any other project participants approved but not listed in the PDD? (EB 51 Annex 3, § 52)	Please refer to A.1.1.	/PDD/ /dna/ /unfccc/	OK	OK
A.1.11. Does the DoE have a direct contractual relationship with the PP? (EB 51 Annex 3, §51 and EB 50, Annex 48, §§ 7-9) *Check whether the PPs listed in the published PDD are still listed in the PDD going to be submitted to request for registration.*	*Description:* TUV NORD has a direct contractual relationship with the World Bank Group, International Bank for Reconstruction and Development as Trustee of the Spanish Carbon Fund (PP). *Justification of evidences:* Contract/DOE/ has been checked to guarantee this information. *Conclusion:* No discrepancies were identified.	/PDD/ /DOE/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.2. Contribution to Sustainable Development *The project's contribution to sustainable development is assessed.*				
A.2.1. Has the host country confirmed that the project assists it in achieving sustainable development? (EB 51 Annex 3, §§ 123 – 125) *Contain a statement confirming whether the letter of approval by the DNA of the host party confirmed the contribution of the project to the sustainable development of the Host Party.*	Please refer to A.1.1.	/PDD/ /dna/ /unfccc/	OK	OK
A.2.2. Will the project create other environmental or social benefits than GHG emission reductions? (EB 51 Annex 3, §§ 123 – 125) *Describe the other positive aspects not related to GHG emission reduction on the environment.*	*Description:* The project activity will create some benefits in the local. Water contamination will be minimized by a leachate treatment and the release of the gases will be reduced by the gas collection system. The project activity also will create some job opportunities, once will be necessary to hire some employees to manage the gas collection system. *Justification of evidences:* Section A.2 and D.1 of the PDD lists some benefits of the project other than GHG emission reductions. Furthermore, interview with PP was performed about the benefits of the project activity. *Conclusion:*	/PDD/ /IM01/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	The validation team confirmed that the project have created several benefits, listed above, not related to GHG emissions reduction.			
A.3. PDD editorial aspects *The PDD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.*				
A.3.1. Has the latest version of the PDD form been applied? (EB 51 Annex 3, § 55)	*Description:* Yes. Version 3.2 has been applied which is valid since 2006/07/28. *Justification of evidences:* 2 PDD version 1 was crosschecked with version 3. of the CDM-PDD template. *Conclusion:* Version 3.2 of the Project Design Document Form (CDM-PDD) was used by the PP. The UNFCCC web site was checked accordingly.	/PDD/ /unfccc/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
A.3.2. Has the PDD been duly filled in accordance with the latest guidance(s)? (EB 51 Annex 3, §§ 56, 57)	*Description:* In general the PDD has been duly filled. Minor editorial mistakes were discussed with the PP during site visit. *Justification of evidences:* PDD version 1 was crosschecked with version 7, (EB41/Annex 12) of the CDM-SSC-PDD guidelines. The UNFCCC web site was checked accordingly *Conclusion:* The project complies with the requirements.	/PDD/ /unfccc/	OK	OK
A.4. Technology to be employed *Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The DOE should ensure that environmentally safe and sound technology and know-how is used.*				
A.4.1. Does the PDD contain a clear, accurate and complete project description? (EB 51 Annex 3, §§ 58, 59) *The PDD shall contain a clear description of the project activity which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation.* *Pl. consider esp.* chapters *A.2, A.4.2 and A.4.3 (in case of*	*Description:* No, revision is necessary in section A.4.3. *Justification of evidences:* PDD version 1 was crosschecked with version 7, (EB41/Annex 12) of the CDM-SSC-PDD guidelines. The UNFCCC web site was checked accordingly and section A.4.3 is incomplete.	/PDD/ /GCP/	~~CL A1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
LSC PDD) for assessment. *Describe the process undertaken to validate the accuracy and completeness of the project description.* *Contain the DOE's opinion on the accuracy and completeness of the project description.*	*Conclusion:* **(CL A1)** Please, revise the section following guidance in the /GCP/. Please state the baseline scenario and clarify the number of flares.			
A.4.2. Is this description in accordance with the real situation or (in case of greenfield projects) is it most likely that the project will be implemented acc to the project description?	Please refer to the comments given above in section A.4.1.	/PDD/ /GCP/	~~CL A1~~	OK
A.4.3. In case the project involves alteration of the existing installation or process, is a clear description available regarding the differences between the project and the pre-project situation? EB 51 Annex 3, §§63, 64) *Describe the steps taken to validate this issue.*	Not applicable, the project does not involve alteration of the exiting installation or process.	/PDD/ /IM01/	N/A	N/A
A.4.4. Does the project design engineering reflect current good practices? *Consider the equipment specifications, literature (e.g. EU BREF papers) and professional experiences. Describe the process undertaken to assess the engineering.*	*Description:* Yes, the project designs engineering follows good practices. The technology employed in the project activity is not common in Brazil once there is no legislation requiring the landfill gas collection. *Justification of evidences:* Technical proposal/EPEP/ and Biogas Project/BP/ , which contained the technical specifications and diagrams of the	/PDD/ /IM01/ /EPEP/ /BP/	~~CL A1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	project were checked by the validation team. *Conclusion:* The project design reflects current good practices. Information of the characteristics of the project was checked. However, see CL A1.			
A.4.5. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country? *Describe the process undertaken to assess the state of the art technology.*	*Description:* Yes, the project will utilize advanced technology that is not common employed in Brazil. Technical data, interview with the engineer responsible for the project and experience evaluating others projects in scope 13 were used to evidence this subject *Justification of evidences:* The technology to be implemented will come from a company that has high quality and experience in projects. Proposal/EPEP/ was reviewed by the validation team. *Conclusion:* The validation team had checked relevant information about the technology to be implemented and it is confirmed that the technology is state of the art	/PDD/ /IM01/ /EPEP/ /BP/	OK	OK
A.4.6. Does the project make provisions for meeting training and maintenance needs? *Describe the process undertaken to assess the maintenance and training needs.*	*Description:* The employees responsible for monitoring will be trained (internally or externally) once a year. *Justification of evidences:*	/PDD/ /IM01/	~~CL A2~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	It was evidenced through interview with the PP. *Conclusion:* **(CL A2)** Please make clear in the PDD information about training and maintenance during the project operation.			
A.5. Small scale project activity *It is assessed whether the project qualifies as small-scale CDM project activity*				
A.5.1. Does the project qualify as a small scale CDM project activity as defined in decision 4 / CMP.1 annex II? (EB 51 Annex 3, § 135 (a))	The project does not qualify as small-scale CDM project activity.	/PDD/	N/A	N/A
A.5.2. Does the project apply one of the approved small scale categories and any methodology and tool referred therein? (EB 51 Annex 3, § 135 (b)) *Check, if applicable the expiry dates of the applied methodology. Further, take into consideration the general guidance to the methodologies[1], which provide guidance on equipment capacity, equipment performance, sampling and other monitoring related issues.*	N/A	/PDD/	N/A	N/A
A.5.3. Is the small scale project activity not a	N/A	/PDD/	N/A	N/A

[1] http://cdm.unfccc.int/methodologies/SSCmethodologies/approved.html

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
debundled component of a larger project activity? (EB 51 Annex 3, § 135 (c)) *Describe the steps taken to validate this issue. PI refer to the Compendium of guidance on debundling (EB 36, Annex 27).*				
A.5.4. Is an assessment of the environmental impacts of the proposed SSC CDM project activity required by the host Party? (EB 51 Annex 3, § 135 (d))	N/A	/PDD/	N/A	N/A
B. Project Baseline, Additionality and Monitoring Plan				
B.1. Application of the Methodology				
B.1.1. Does the project apply an approved and applicable CDM methodology and a valid version thereof? (EB 51 Annex 3, §65) *Describe the steps taken to validate this issue.*	*Description:* Yes, the project applies the following methodology and tools: -ACM0001- Consolidated baseline and monitoring methodology for landfill gas project activity. Version 10. -Tool for demonstration and assessment of additonality. Version 5.2 -Tool to determine project emissions from flaring gases containing methane. Version 01 -Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site. Version 04. - Tool to calculate baseline, project and/or leakage emissions	/PDD/ /unfccc/	~~CL B1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	from electricity consumption. Version 1 - Tool to calculate project or leakage CO2 emissions from fossil fuel combustion. Version 02. - Tool to calculate the emission factor for an electricity system. Version 02. *Justification of evidences:* All methodologies and tools were cross checked on UNFCCC website by the validation team and were verified that all are valid version of approved and applicable CDM methodologies *Conclusion:* **(CL B1)** In section B.1, please list all tools the methodology draws upon and their version.			
B.1.2. Is the applied CDM methodology identical with the version available on the UNFCCC website? (EB 51 Annex 3, §§65, 69) *Describe the steps taken to validate this issue.*	*Description:* Yes, the applied methodology is identical with the methodology published in the UNFCCC web site at time of draft validation. *Justification of evidences:* UNFCCC web site was checked accordingly. *Conclusion:* The PP has applied a corrected and valid methodology which is the same as the published in the UNFCCC web site at time of draft validation.	/PDD/ /unfccc/	OK	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
B.1.3. Are all applicability criteria in the methodology, the applied tools or any other methodology component referred to therein fulfilled? (EB 51 Annex 3, §§66 (a), 66 (b), 68, 70, 75) *Describe for <u>each</u> applicability criterion listed in the selected approved methodology the steps taken to assess the information contained in the PDD.*	*Description:* No, section B.2 needs some revision. *Justification of evidences:* PDD and ACM0001 version 10 were crosschecked. *Conclusion:* **(CL B2)** In section B.2, please list each applicability criteria of ACM001 and the tools utilized and describe why the project activity meets the applicable criteria, providing references and supporting evidences when necessary	/PDD/ /ACM0001/	~~CL B2~~	OK
B.1.4. In case one or more applicability criteria have not been met, has the validation team requested clarification to, revision of or deviation from the methodology in accordance with the latest guidelines? (EB 51 Annex 3, §§ 71 -74)	Please, see CL B2.	/PDD/ /ACM0001/	~~CL B2~~	OK
B.1.5. Is the project in accordance to every other stipulation or requirement mentioned in all sections of the methodology? (EB 51 Annex 3, §70) *Describe the steps taken to check whether the proposed project activity meets <u>all the other possible stipulations and</u>*	*Description:* In general, the project is in line with the methodology. *Justification of evidences:* PDD and ACM0001 version 10 were crosschecked. *Conclusion:*	/PDD/ /ACM0001/	~~Not yet OK~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
/or limitations mentioned in all sections of the approved methodology selected.	However, CARs and CLs have to be closed.			
B.2. Project Boundaries *Project Boundaries are the limits and borders defining the GHG emission reduction project*				
B.2.1. Are the project's spatial boundaries (geographical) clearly defined? (EB 51 Annex 3, §§67 (a), 77 – 79) *Provide information on how the validation of the geographical boundary has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.*	*Description:* No, section B.3 needs an intense revision. *Justification of evidences:* PDD, version 7, (EB41/Annex 12) of the CDM-SSC-PDD guidelines and ACM0001 version 10 were crosschecked. *Conclusion:* 1. **(CL B3)** In section B.3, please:Include a statement about the project boundary, which is (a) the site where the biogas is captured and destroyed (i.e. the landfill) and (b) as energy is sourced from the grid, it includes all power plants connected to that grid; 2. In the table, baseline emissions from electricity consumption was marked "yes". Please correct it as there is no power consumption related to gas extraction in the baseline scenario; *3.* In addition, please revise the figure accordingly, including the landfill site and the grid within the boundary and following guidance in the /GCP/.	/PDD/ /GCP/ /ACM0001/	~~CL B3~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
B.2.2. Are all sources and GHGs included in the project boundary as required in the applied methodology? (EB 51 Annex 3, §§67 (a), 77 – 79) *Provide information on how the validation of the GHGs and sources has been performed either based on reviewed documented evidence or by describing what was observed/viewed during a site visit.*	Please, see comment in B.2.1	/PDD/ /GCP/ /ACM0001/	~~CL B3~~	OK
B.2.3. In case the methodology allows to choose whether a source and/or gas is to be included, is the choice sufficiently explained and justified? (EB 51 Annex 3, §§67 (a), 77 – 79) *Confirm if the justification provided by the PPs is reasonable, based on assessment of supporting documented evidence provided by the PPs or by onsite observations.*	*Description:* Yes, the justification of choices is sufficient, however, see comment in B.2.1 *Justification of evidences:* PDD and ACM0001 were crosschecked. *Conclusion:* Please, see comment in B.2.1	/PDD/ /GCP/ /ACM0001/	~~CL B3~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.3. Baseline Identification *The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.*				
B.3.1. What possible baseline scenarios have been considered? (EB 51 Annex 3, §§ 67 (b), 82) *Fill in all alternatives in table A-2.*	*Description:* The following alternatives for baseline scenario have been considered: **Alternative 1**. The business as usual scenario. The landfill gas would continue to be released to the atmosphere as there are no requirements in place that would mandate landfill gas capture and flaring. **Alternative 2**. The landfill operator would invest in landfill gas collection and flaring equipment, but not as part of the CDM. **Alternative 3.** LFG collection and utilization for power generation or gas supply off site. *Justification of evidences:* PDD was crosschecked with the applied and valid methodology.	/PDD/ /ACM0001/	~~CL B4~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	Conclusion: **(CL B4)** In section B.4, please: 1. Follow the Step-wise approach described in ACM001 (there is no need to repeat the same steps in sections B.4 and B.5); 2. Use the names of Alternatives given in ACM001 (LG1, LG2…); 3. Clearly document the outcome of each step; 4. As the outcome of the analysis, include a description of the baseline as given in ACM001.			
B.3.2. Is the list of alternatives complete? (EB 51 Annex 3, §§67 (b), 82) *Describe how it was validated that all alternatives are plausible and no plausible alternative is excluded from the consideration*	☒ All plausible alternative scenarios listed in the approved methodology have been considered. In the course of document review and site visit, it has been validated that no other alternatives which supply comparable outputs and / or services are to be taken into consideration. Thus no plausible scenario has been omitted. ☐ The following alternative scenarios/options have been omitted. Corresponding CAR(s)/CL(s) has /have been issued	/PDD/ /ACM0001/	OK	OK
B.3.3. What has been identified as the baseline scenario? (EB 51 Annex 3, §§80, 81, 85) *Describe the chosen BL scenario, taking into consideration the technology that would be employed and / or the activities*	*Description:* The identified baseline the **Alternative LFG 2**: The business as usual scenario. The landfill gas would continue to be released to the atmosphere as there are no requirements in	/PDD/ /ACM0001/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
that would take place in the absence of the proposed CDM project activity.	place that would mandate landfill gas capture and flaring. *Justification of evidences:* PDD were crosschecked with the applied and valid methodology. *Conclusion:* The baseline was correctly applied in the PDD and in accordance with the methodology.			
B.3.4. Has the baseline scenario been determined according to the methodology? (EB 51 Annex 3, §§81, 86 (e)) *Describe how it is validated that the identification of the most plausible baseline scenario is carried out in accordance with the applied methodology and applied methodological tools. Please refer to table A-2.*	For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2. ☒ The determination has been carried out as per the procedure contained in the applied methodology. ☐ The following CARs / CLs have been identified with respect to the selection of the baseline scenario:	/PDD/ /ACM0001/	OK	OK
B.3.5. Has any plausible alternative scenario been excluded? (EB 51 Annex 3, § 82) *Describe how it is validated that no plausible alternative scenario has been excluded.*	For details of the assessment regarding the evaluation of the baseline scenario pl. refer to table A-2. ☒ No plausible baseline scenario has been excluded. ☐ The following plausible baseline scenarios have been excluded though no adequate justification has been provided for elimination. The following CARs / CLs have been issued:	/PDD/ /ACM0001/	OK	OK
B.3.6. Is the identified baseline scenario reasonable and has the baseline scenario been determined using conservative assumptions	☒ The baseline scenario is reasonable and has been determined using conservative assumptions where possible. Please refer to comments in table A-2 and	/PDD/ /ACM0001/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
where possible, including relevant references and sources? (EB 51 Annex 3, §§ 83 - 86(a)-(c) *Describe whether the choice of the identified baseline scenario is reasonable by validating the key assumptions, calculations and rationales used in the PDD. Describe whether these are listed, relevant and conservatively interpreted in the PDD.*	sections B.3.2 to B.3.5 above. ☐ The following CARs / CLs have been issued because assumptions used in the baseline determination have been assessed to be not conservative			
B.3.7. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations? (EB 51 Annex 3, §§ 84, 86(d)) *Describe whether the PP has shown that all relevant policies and circumstances have been identified and correctly considered in the PDD in accordance with the guidance by the Board. Pl. consider the guidance EB 22 annex 3 (regarding E+ and E- policies).*	*Description:* Yes, the baseline scenario sufficiently takes into account relevant national and/or sectoral politics, once in Brazil there is no legislation/ obligation of gas capture and collection in landfill or dump sites areas. The landfill follows the requirements of NBR 8419 and ABNT 1984, sections 5.1.6.5. *Justification of evidences:* NBR 8419 and ABNT 1984, sections 5.1.6.5. were checked. *Conclusion:* As in Brazil there is no legislation/ obligation of gas capture, is considered that the baseline scenario takes into account relevant national and/or sectoral politics.	/PDD/ /NBR 8419/	OK	OK
B.3.8. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced? (EB 51 Annex 3, § 86 (a) – (c))	*Description:* Yes, all documents and sources referenced in the PDD were checked by the validation team. *Justification of evidences:*	/PDD/ /IM01/	~~CL B4~~ ~~CL B5~~ ~~CL B7~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
Describe whether the documents and sources referred to in the PDD are correctly quoted and clearly referenced.	Interview with the project proponent, document review as well as researches in others projects with scope 13 and the same methodology were reviewed to evaluate the determination of the baseline scenario. *Conclusion:* For an appropriate assessment see CL B4 and CLs below: **(CL B5)** In section B.5, please: 1. Step 1 is already described in section B.4 (there is no need to repeat it here); 2. The estimated costs of investment, in Sub-step 1a, would be more suitably placed in Sub-step 2b; 3. Provide precise reference and evidence for the investment costs; 4. Reference precisely the statement of CNI in the paragraph just below Table1; 5. Provide precise link/evidence for the Pesquisa Nacional de Saneamento Básico; 6. Provide reference number for each landfill listed in Sub-step 4b; 7. Clearly document the outcome of each step. **(CL B7)** In section B.8, the date shall be updated			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.3.9. Does the PDD contain a *verifiable* description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity. (EB 51, Annex 3, §85)	*Description:* The PDD contain a verifiable description about the baseline scenario that is the continuing of the actual scenario: the landfill gas would continue to be released to the atmosphere as there are no requirements in place that would mandate landfill gas capture and flaring. *Justification of evidences:* PDD and ACM0001 were checked accordingly. *Conclusion:* It is verifiable the description of the baseline scenario.	/PDD/ /ACM0001/	OK	OK
B.4. Additionality Determination *The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.*				
B.4.1. Methodology				
B.4.1.1. Does the PDD describe the how the project is additional and does the additionality justification follow the requirements of the applied methodology and/or methodological tools? (EB 51 Annex 3, §§67 (d), 93, 94) *Describe how it is validated that additionality justification is carried out in accordance with the applied methodology*	*Description:* The project additionality is demonstrated by applying the "Tool to demonstration and assessment of additionality". Version 5.2. *Justification of evidences:* The PDD section B.5 was crosschecked with "Tool to demonstration and assessment of additionality". Version 5.2.	/PDD/ /TA/	~~CL B4~~ ~~CL B5~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
and/or applied methodological tools. Further focus your assessment on the reliability and credibility of data, rationales and assumptions, justifications and documentations provided by the PP.	*Conclusion:* Please, refer to CL B4 and CL B5.			
B.4.2. Consideration of CDM before project start				
B.4.2.1. Is the project starting date reported in accordance with the CDM glossary of terms? (EB 51, Annex 3, §103 (a)) *Describe the steps taken to validate this issue.*	*Description:* The reported starting date is in the future, as according to the representatives of the project activity, the date will be the signed contract of clay purchase/PSD/ and its transport/PSD/. As interview with the PP, these contracts will be signed on June 18th 2010. *Justification of evidences:* The draft contract of the clay purchase/PSD/ and its transport/PSD/ were checked. *Conclusion:* The validation team confirms that the starting date of the project activity is in accordance with the CDM glossary of terms, as the date of clay purchase is considered the date on which the PP has committed to expenditures related to the implementation of the project activity. However, see CL below. **(CL C1)** In section C.1.1, please reference the starting date. In addition, please put the date in the format DD/MM/YYYY, as required by the Guidelines for completing the PDD	/PDD/ /PSD/ /PSD/ /GT/ /PSD/	~~CL C1~~	OK
B.4.2.2. In case the project start date is on or after	*Description:*	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
2nd August 2008 has the PP informed the DNA and UNFCCC about the intension to seek CDM status? (EB 51 Annex 3, §§ 98, 99, 100) *Describe whether such a notification has been provided by the project participants within six months of the project activity start date; if NOT it shall be determined that the CDM was not seriously considered.*	As stated in the Guidelines on the demonstration and assessment of prior consideration of CDM /GDAPC/ (EB 49, Annex 22), para 2, for new project activities, if a PDD has been published for global stakeholder consultation before the project activity start date (as this case), a notification informing about the project activity for Host Party DNA or UNFCCC secretariat is not necessary. *Justification of evidences:* Guideline on the demonstration and assessment of prior consideration of CDM was checked accordingly. *Conclusion:* A notification informing about the project activity for Host Party DNA or UNFCCC secretariat is not necessary.	/GDAPC/		
B.4.2.3. In case the project start date is before commencing of validation and 2nd August 2008, was the incentive from the CDM seriously considered and are details given in the PDD? (EB 51 Annex 3, §§ 99, 101) *Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.*	Please, see comment in B.4.2.1.	/PDD/	N/A	N/A
B.4.2.4. How and when was the decision to proceed with the project taken?	Please, see comment in B.4.2.1.	/PDD/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
Describe the steps taken to validate the starting date.				
B.4.2.5. Is the project start date consistent with the available evidences? (EB 51 Annex 3, §101) *Describe the evidence assessed regarding the prior consideration of the CDM (if necessary). Describe whether the evidence to support such consideration is adequately and transparently described in the PDD.*	Please, see comment in B.4.2.1.	/PDD/	N/A	N/A
B.4.2.6. Was the decision to proceed with the project taken by a person which has the authority to do so? (EB 51 Annex 3, §100 (a)) *Describe the steps taken to validate this issue.*	Please, see comment in B.4.2.1.	/PDD/	N/A	N/A
B.4.2.7. How was the CDM involved in the decision making process? (EB 51 Annex 3, § 101) *Describe why CDM was a decisive factor in the decision making process.*	Please, see comment in B.4.2.1.	/PDD/	N/A	N/A
B.4.2.8. Do the evidences provided doubtlessly prove that continuous and real actions were taken in order to secure the CDM status? (EB 51 Annex 3, § 101; EB 49 Annex 22, §7)	Please, see comment in B.4.2.1.	/PDD/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.2.9. Is the gap of documented evidences to secure the CDM status less than 3 years and are the evidences relevant for substantiating the action taken, credible, reliable and complete? (EB 49 Annex 22, §8)	Please, see comment in B.4.2.1.	/PDD/	N/A	N/A
B.4.2.10. Did implementation of the project ceased after its commencement and did implementation recommence after consideration of the CDM? (EB 51 Annex 58, §7) *Describe the reasons for ceasing the project and explain why the incentive from CDM was necessary to recommence the implementation.*	Please, see comment in B.4.2.1.	/PDD/	N/A	N/A
B.4.2.11. Can the CDM involvement in the decision assessed as serious? *Describe whether or not the project would have been undertaken without the incentive of the CDM.* (EB 51 Annex 3, § 103 (b) – (c))	Please, see comment in B.4.2.1. As there is no legislation or contractual regulation enforcing LFG capture and flaring, and the project generates no benefits to the PP besides carbon credits, the revenues from CDM is deemed essential for the implementation of the project.	/PDD/	OK	OK
B.4.3. Identification of alternatives Step 1 (in case of SSC projects pl. Skip steps 1 and 2)				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.4.3.1. Does the list of alternatives contain the status-quo situation, the project not undertaken as a CDM project as well as all other viable means of supplying the outputs or sevices that are to be supplied by the proposed CDM project activity? (EB 51 Annex 3, §§ 104 – 106) *Describe the steps taken to validate this issue on the basis of your local and sectoral knowledge.*	*Description:* All realistic alternatives scenarios had been identified in the baseline scenario according to the valid methodology. Please, refer to Annex 2 (Table A-2). *Justification of evidences:* This could be evidenced through review of the PDD and during the on-site visit assessment of the project. *Conclusion:* Please, see CLs B4 and B5.	/PDD/ /ACM0001/	~~CL B4~~ ~~CL B5~~	OK
B.4.3.2. Have all realistic alternatives been identified to the project? (EB 51 Annex 3, §§ 104 – 106) *Describe whether the list of alternatives is credible and complete. Describe how it is validated that the alternatives are realistic.*	*Description:* Yes, the alternatives contain the status-quo situation and the project not undertaken as a CDM project. *Justification of evidences:* PDD and ACM0001 were checked accordingly. *Conclusion:* Please, see CLs B4 and B5.	/PDD/ /ACM0001/	~~CL B4~~ ~~CL B5~~	OK
B.4.3.3. Do all identified alternatives comply with enforced legislations? (EB 51 Annex 3, §§ 105 (c)) *Describe the steps taken to validate this issue. Refer to the legislations.*	*Description:* The landfill follows Brazilian regulatory requirements relating to landfill operation: NBR 8419 and ABNT 1984, sections 5,1,6.5. Furthermore, installation licence has been required to FEEMA (environmental department form Rio de Janeiro state). *Justification of evidences:*	/PDD/ /IL/ /NBR 8419/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	PDD, NBR 8419 and ABNT 1984, sections 5,1,6.5 and installation licence required have been checked. *Conclusion:* Yes, all alternatives scenarios described in the PDD are in agreement with mandatory laws and regulation.			
B.4.4. Investment analysis Step 2 *In case the investment analysis as per step 2 is chosen to justify the additionality Annex 2 "Assessment of Financial Parameters" has to be used to provide additonal details of the the calculation parameters..*				
B.4.4.1. Does the PDD provide evidence that the project would not be the most economically or financially attractive alternative or economically / financially feasable without the revenues from the sale of CERs? (EB 51 Annex 3, §107)	*Description:* Yes, PDD evidences by a simple cost analysis that the project is not economically attractive compared to the baseline that is the continuation of the current situation and it is not necessary any investment. *Justification of evidences:* Excel spreadsheet was verified. Furthermore, proposals and quotations from different equipment providers were checked. *Conclusion:* The project is not economically feasible without the sale of CERs, however, please, see CL B6 in B.4.4.3.	/PDD/ /XLS1/ /EPEP/ /PRO1/ /PRO2/ /QUO/	~~CL B6~~	OK
B.4.4.2. Is an appropriate analysis method chosen for the project (simple cost analysis,	*Description:* The chosen approach for demonstrating the project's	/PDD/ /TA/	~~CL B5~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
investment comparison analysis or benchmark analysis)? (EB 51 Annex 3, §107, EB 39 Annex 10) *Describe why the selected analysis method is appropriate under consideration of potential revenues and costs, potential project alternatives and potential available benchmark values.*	additionality is the simple costs analysis (Option I). *Justification of evidences:* Tool for the demonstration and assessment of additionality version 5.2 was checked accordingly. *Conclusion:* This is an appropriate analysis method because the project activity will not receive income from the sale of electricity; the implementation of the project activity will have no benefits other than CDM revenue. However, please see CL B5.	/XLS1/		
B.4.4.3. Is a clear, viewable and unprotected Excel spreadsheet available for the investment calculation? (EB 51 Annex 3, §109, EB 51, Annex 58, §8) *Describe the steps taken to validate this issue.*	*Description:* Yes, a clear, viewable and unprotected Excel spreadsheet was available. *Justification of evidences:* Excel spreadsheet was checked accordingly. *Conclusion:* **(CL B6)** Although an unprotected Excel spreadsheet for the investment costs was provided, it should clearly contain the references for the sources of data for the costs applied, supported by evidences	/PDD/ /XLS1/	~~CL B6~~	OK
B.4.4.4. Does the period chosen for the investment analysis reflect the technical lifetime of the project activity or in case a shorter period is chosen, is the fair value of the project	Not applicable. An investment analysis is not applied in this project.		N/A	N/A

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
activity's assets at the end of the investment analysis period (as a cash inflow) included? (EB 51 Annex 3, §108; EB 51 Annex 58 § 3 – 4) *Describe how the technical lifetime / period chosen for calculating financial parameter(s) is reviewed and which documents were utilised in the course of review. Describe furthermore the approach used to check the inclusion of a potential fair value.*				
B.4.4.5. Is the (remaining) technical lifetime of existing or project equipment defined in accordance with the guidance of the *Tool to determine the remaining lifetime of equipment*? (EB 50 Annex 15)	As project activity does not involve the replace of the existing equipment or retrofit of the existing equipment, this item is not applicable.	/PDD/	N/A	N/A
B.4.4.6. Is the fair value calculated in accordance with local accounting regulations (where available) or international best practice? (EB 51 Annex 3, §108; EB 51 Annex 58 §4) *State the accounting regulations applied for calculating the fair value and describe why these are applicable under the project specific circumstances. Describe potential mismatches between regulations and the approach applied for calculating the fair value.*	N/A	N/A	N/A	N/A
B.4.4.7. Is the book value as well as the	N/A	N/A	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
expectation of the potential profit or loss included in the fair value calculation? (EB 51 Annex 3, §108; EB 51 Annex 58 §4)				
B.4.4.8. Are depreciation and other non-cash related items added back to net profits for the purpose to calculate the financial indicator? (EB 51 Annex 3, §108; EB 51 Annex 58 §5)	N/A	N/A	N/A	N/A
B.4.4.9. Is taxation excluded in the investment analysis or is the benchmark intended for post tax comparisons? (EB 51 Annex 3, §108; EB 51 Annex 58 §5)	N/A	N/A	N/A	N/A
B.4.4.10. Were the input values used in the investment analysis valid and applicable at the time of the investment decision? (EB 51 Annex 3, §§108, 111; EB 51 Annex 58 §6) *In case the basis for input values is a Feasibility Study Report (FSR) describe how it has been ensured that the period in time between the finalisation of the FSR and the investment decision is sufficiently short so that it is unlikely that input values would have materially changed. Further confirm the consistency of values in FSR and PDD.*	N/A	N/A	N/A	N/A
B.4.4.11. Is the plant load factor (PLF) chosen in a conservative manner, taking into account that the PLF may be different in the	N/A	N/A	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
framework of demonstrating additionality and calculating the ex-ante ER? (EB 48, Annex 11)				
B.4.4.12. In case of project IRR: Are the costs of financing expenditures (loan repayments and interests) excluded from the calculation of project IRR? (EB 51 Annex 3, §108; EB 51 Annex 58 §9)	N/A	N/A	N/A	N/A
B.4.4.13. In cases where a post-tax benchmark is applied please ensure that actual interest payable is taken into account in the calculation of income tax. (EB 51 Annex 58 §11) *As per the guidance it is recommended to select a pre tax benchmark in order to Describe the steps taken in assessing this requirment.*	N/A	N/A	N/A	N/A
B.4.4.14. In case of equity IRR: Is the part of the investment costs, which is financed by equity considered as net cash outflow and is the part financed by debt excluded in net cash outflow? (EB 51 Annex 3, §108; EB 51 Annex 58 §10)	N/A	N/A	N/A	N/A
B.4.4.15. Is the type of benchmark chosen appropriate for the type of IRR calculated	N/A	N/A	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(e.g. local commercial lending rates or weighted average costs of capital for project IRR; required/expected returns on equity for equity IRR)? (EB 51 Annex 3, § 110; EB 51 Annex 58 §12 – 15) *In case risk premiums are applied precisely describe its suitability to reflect the risks associated with the project activity, considering the project type and market situation.*				
B.4.4.16. Is the benchmark value suitable for the project activity and is it reasonable to assume that no investment would be made at a rate of a lower return than the benchmark? (EB 51 Annex 3, §108; EB 51 Annex 58 §13 – 15) *Describe whether it is reasonable to assume that a lower rate of return would consequently result in the baseline scenario.*	N/A	N/A	N/A	N/A
B.4.4.17. Is it ensured that the project cannot be developed by other developers than the PP? (EB 51 Annex 3, §108; EB 51 Annex 58 §13 – 14) *Describe why the benchmark does not include the subjective profitability expectations or risk profile of the project developer. If applicable assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects.*	N/A	N/A	N/A	N/A
B.4.4.18. Was the benchmark consistently used in	N/A	N/A	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
the past for similar projects with similar risks? (EB 51 Annex 3, §108)				
B.4.4.19. Does the PDD and related spreadsheets contain a sensitivity analyis and does the same contain variation of parameters which may vary throughout the project lifetime, (EB 51 Annex 3, §§108, 109 (e); EB 51 Annex 58 §17 – 18) *Describe relevance of parameters used in the sensitivity analysis as well as their likeliness to vary during the project's lifetime. Parameters which are fixed on the basis of contracts, PPAs etc. may not be subject to variation and not adequate.*	N/A	N/A	N/A	N/A
B.4.4.20. Were only variables that constitute more than 20% of either total project costs or total project revenues subjected to reasonable variation? (EB 51 Annex 3, §108; EB 51 Annex 58 §17)	N/A	N/A	N/A	N/A
B.4.4.21. Have parameters, constituting less than 20% of total project costs or revenues, been identified with potential material impact on the financial parameter?	N/A	N/A	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 51 Annex 3, §108; EB 51 Annex 58 §17) *Describe whether those parameters are considered in the sensitivity analysis?*				
B.4.4.22. Is the range of variation reasonable in the specific context of the project activity, taking into consideration historic trends in the business sector? (EB 51 Annex 3, §108; EB 51 Annex 58 §18) *Describe whether the range of variation is appropriate with focus on historic developments, e.g. price of oil / labour etc., energy potential in the region in question.*	N/A	N/A	N/A	N/A
B.4.5. **Barrier analysis Step 3 or SSC additionality assessment**				
B.4.5.1. Are there any barriers given which have a clear and direct impact on the financial returns of the project? (EB 51 Annex 3, §§ 114, 133, 136) *In case of LSC projects those issues cannot be considered as barriers and shall be assessed in the investment analysis. In case of SSC projects the same fundamentals as for LSC projects shall apply, i.e. the assessment of the investment barrier according to EB 51 Annex 58.*	Not applicable as PP chose only Investment Analysis.	/PDD/	N/A	N/A
B.4.5.2. Are the barriers described risk related (e.g technology failure, other performance related risks)?	Not applicable as PP chose only Investment Analysis.	/PDD/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
(EB 51 Annex 3, §§ 115, 133, 136) *Are there other barriers or barriers due to prevailing practice existent which would have led to higher emissions?*				
B.4.5.3. Has the unavailabilty of means of finance for the proejct been described and adequately substantiated? Do evidences doubtlessly prove that the financing of the project was assured only due to the benefit of the CDM? (EB 51 Annex 3, §§ 115, 136, EB 50 Annex 13, §9)	Not applicable as PP chose only Investment Analysis.	/PDD/	N/A	N/A
B.4.5.4. How is it justified and evidenced that the barriers given in the PDD are real? (EB 51 Annex 3, § 115 (a))	Not applicable as PP chose only Investment Analysis.	/PDD/	N/A	N/A
B.4.5.5. How is it justified that one or a set of real barriers prevent(s) the implementation of the project activity and do not prevent the implementation of at least one of the alternatives? (EB 51 Annex 3, § 115 (b))	Not applicable as PP chose only Investment Analysis.	/PDD/	N/A	N/A
B.4.5.6. Does the review of relevant background information on the nature of the company(ies) and entitiy(ies) involved in the financing and implementation of the project sufficiently justify that the barriers	Not applicable as PP chose only Investment Analysis.	/PDD/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
related to the lack of access to capital, technologies and skilled labour are real? (EB 50 Annex 13, §4)				
B.4.5.7. Has it been demonstrated in an objective way how the CDM alleviates each of the identified barriers to a level that the project is not prevented anymore from occurring by any of the barriers? (EB 50 Annex 13, §5)	Not applicable as PP chose only Investment Analysis.	/PDD/	N/A	N/A
B.4.5.8. Would provision of additional financial means lead to the mitigation of the barrier(s) demonstrated? (EB 50 Annex 13, §7) *Describe why provision of additional financial means would not lead to mitigation of the barrier(s) demonstrated and hence analysing the project's additionality within the framework of an investment analysis is inappropriate. .*	Not applicable as PP chose only Investment Analysis.	/PDD/	N/A	N/A
B.4.6. Common practice analysis Step 4 (in case of SSC projects skip this step)				
B.4.6.1. Is the defined region for the common practice analysis appropriate for the technology/industry type? (EB 51 Annex 3, § 119 (a)) *Describe why the project activity is not common practice in a*	*Description:* The defined region established in the PDD for comparison with other industries is the host country. *Justification of evidences:*	/PDD/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
transparent and unambiguous manner. If a region other than the entire host country is chosen, describe why this region is more appropriate.	PDD was checked accordingly. *Conclusion:* This approach is appropriate because there are only few existing landfill projects that implemented methane capture and flaring in Brazil. In order to have an appropriate sample the whole country will be considered			
B.4.6.2. To what extent similar projects have been undertaken in the relevant region? (EB 51 Annex 3, § 119 (b))	*Description:* Only a few existing Brazilian landfills have installed methane collection and flaring systems, electric generation systems, or evaporator leachate treatment systems. The majority of landfills operate with natural emissions of methane to the atmosphere through concrete wells. All of the projects in Brazil that implemented this technology, listed in section B.5, page 12 of the PDD, do so because of the incentive provided by the CDM. *Justification of evidences:* Projects were checked in UNFCCC website. No other similar projects have been identified by the validation team in the host country which are not CDM projects. *Conclusion:* No discrepancies were found.	/PDD/ /unfccc/	OK	OK
B.4.6.3. In case similar projects are identified, are there any key differences between the proposed project and existing or ongoing projects and what kind of differences are	*Description:* All similar projects observed were CDM projects and although there are differences between them the overall	/PDD/ /unfccc/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
observed? (EB 51 Annex 3, § 119 (c))	context is similar. *Justification of evidences:* Projects were checked in unfccc website. *Conclusion:* All similar activities are developed under CDM. No significant discrepancies were found.			
B.5. Ex-Ante Calculation of GHG Emission Reductions *It is assessed whether the ex-ante calculations of project emissions, baseline emissions, leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified. Furthermore calculation of emission reductions shall be assessed.*				
B.5.1. Are the equations applied correctly according to the applied approved methodology? (EB 51 Annex 3 §§67 (c), 88, 89, 91) *Describe clearly the steps taken to assess whether the methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. Further take into consideration that all estimates of the baseline emissions can be replicated using the data*	☐ The equations applied for calculation are correctly applied according to the approved methodology. ☒ The following mistakes have been identified in this context: *Description:* Some mistakes were identified in section B.6.1. *Justification of evidences:*	/PDD/ /ACM0001/	~~CAR B1~~ ~~CAR B3~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
and parameter values provided in the PDD.	Section B.6.1. from PDD was checked accordingly. *Conclusion:* **(CAR B1)** Section B.6.1 needs intense revision considering the Guidelines for completing the PDD, ACM 001 and the tools it draws upon, as follows: 1. For more overall clarity, please clearly indicate the separation of each section (e.g. with a title in bold for **Baseline Emissions**, **Ex-ante** and **Ex-Post** approach for $MD_{project,y}$, **Project Emissions**, **Grid Calculation**, etc); 2. When several terms of an equation are equal to zero, please include a simplified equation (e.g. equation of BE_y; equation of $MD_{project,y}$ in ex-post approach); 3. For $MD_{project,y}$, please include the complete equation given in ACM 001 and then use the simplified one ($MD_{project,y} = MD_{FLARE,y}$); 4. Invert the order of equations (5) and (6); 5. In the ex-ante approach, please include the efficiency of the extraction (as required by ACM001, version 11, page 11, second paragraph); 6. In the ex-ante approach, please include the efficiency of the flare, to estimate the ER in a conservative way (as not 100% of the estimated methane emissions will be destroyed by the flare); 7. For parameter $MD_{project,y}$, please correct the name for			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	"methane destroyed by the project" (not "would be destroyed", as this description applies to $MD_{BL,y}$); 8. Please revise the description of $BE_{CH4,SWDS,y}$ as it is not appropriate to the specific case of the project activity; 9. As since 2004, the landfill has been somehow controlled and covered with soil, parameter OX shall be 0.1, to be conservative; 10. Please remove the option of default value for the flare efficiency in STEP 6, page 21; 11. Please exclude GWP_{CH4} from Table in page 22, as it is not a constant, but reviewed at the beginning of each crediting period and shall be in B.6.2; In addition, please name and number the table; 12. In Project emissions, please add the equation and description of parameters for the calculation of $PE_{EC,y}$; 13. In Project Emissions, please clarify that there will be consumption of fossil fuels, and add the corresponding equation and description of parameters according to the respective tool; 14. Please add a brief description of the methodological choices followed by the Brazilian DNA for the calculation of the combined margin emission factor for the grid.			

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	(CAR B3) In section B.6.3 please apply the values to the equations described in B.6.1, clearly documenting each step in a way that the calculation can be reproduced and following the Guidelines for Completing the PDD. In addition, please adjust the years in the tables (also in section B.6.4), according to the starting date of the crediting period given in section C.2.1.1. Moreover, a clear, transparent and unprotected spread sheet in English shall be provided.			
B.5.2. In case the methodology allows for different methodological choices, are the equations applied properly justified and have they been used reflecting the other methodological choices (i.e. baseline identification)? (EB 51 Annex 3 §§ 89, 90) *Assess the correct selection and application of methodological choices. Describe whether proper justification has been provided (based on the choice of the baseline scenario, context of the project activity and other evidence provided) and whether the correct equations have been used reflecting the relevant methodological choices.*	*Description:* The only methodological choice in ACM 0001 relates the estimation of the adjustment factor. As no methane is destroyed in the baseline, as it was evidenced during the on site inspection of the project, this choice is not applicable. *Justification of evidences:* PDD and ACM0001 version 10 were checked accordingly. *Conclusion:* No discrepancies were found.	/PDD/ ACM0001/ /IM01/	OK	OK
B.5.3. Have conservative assumptions been used when calculating the project emissions? (EB 51 Annex 3 §§ 89, 90) *Describe clearly the steps taken to assess whether all the assumptions and data used by the PP are listed in the PDD including references and sources and are conservatively*	Please, refer to CAR B1 raised.	/PDD/ /ACM0001/	~~CAR B1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
interpreted in the PDD.				
B.5.4. Does the implementation of the project activity lead to GHG emissions within the project boundary which are expected to contribute more than 1% of the overall expected average annual emission reductions, which are not addressed by the methodology? (EB 51 Annex 3, §76)	*Description:* There are no GHG emissions within the project boundary that are not addressed in the applied methodology ACM0001. The project activity, as required by the applied methodology and the referenced tools, considers emissions from electricity consumption ($PE_{EC\ y}$) and from fossil fuel combustion ($PE_{FC\ j\ y}$). *Justification of evidences:* PDD and ACM0001 were checked accordingly. Furthermore, during the site visit inspection, review of technical data and interviews performed with representatives. Itaoca dump site responsible for the project confirmed that no other source of GHG emissions apart from the above mentioned was identified. *Conclusion:* All GHG emission within the project boundary was considered.	/PDD/ /ACM0001/ /IM01/ /TEC/ TFF/	OK	OK
B.5.4.1. Has a plant load factor (PLF) been defined ex-ante and considered for determination of baseline emissions? (EB 48 Annex 11, §§ 1, 3, 4) *Describe why the PLF is conservative in the framework of calculating emissions reductions and whether the PLF is the same in the framework of demonstrating additionality by applying the*	As this project is not related to renewable energy generation, this question is not applicable.	/PDD/	N/A	N/A

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
investment analysis. Note, in order to be conservative in both cases the PLF may be different.				
B.5.5. Are all data sources and assumptions appropriate and parameters which remain fixed throughout the crediting period correct, applicable to the project and will lead to a conservative estimation of emission reductions? (EB 51 Annex 3, § 90) *Describe clearly the steps taken to assess whether the values used for the fixed parameters are considered reasonable, correct and applicable in the context of the project activity. Check esp. chapter 6.2 of the PDD.*	*Description:* No, section B.6.2 needs some correction. *Justification of evidences:* PDD and ACM0001 were checked accordingly. *Conclusion:* **(CAR B2)** In section B.6.2 please: 1. Use the tables given in the PDD template version 3.1 and include values applied with respective sources for all parameters; 2. **Regulatory requirements relating to landfill operation**: please include the actual regulations (NBR 8419 and ABNT 1984, sections 5.1.6.5); 3. **Adjustment factor**: please exclude as there is no baseline destruction of methane *ex-ante* therefore this is not applicable; 4. Include **all parameters** used in the calculation of BE_{CH4} (which are not fixed default values): MCF, OX, DOC_f, DOC_j (organic and paper), k_j; 5. Include **parameters** Wx; Pn,i,x.	/PDD/ /ACM0001/	~~CAR B2~~	OK
B.5.6. Are all ex-ante calculation values for monitoring parameters (as defined as per	☐ All "Values of data to be applied for the purpose of calculating expected emissions reductions" are considered to be reasonable, applicable and	/PDD/ /ACM000	~~CAR B4~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
chapter B.7.1) reasonable? (EB 51 Annex 3, § 90) *Describe clearly the steps taken to assess whether the values used for the monitoring parameters are considered reasonable, applicable and conservative in the context of the project activity*	conservative. ☒ The following mistakes have been identified in this context: **(CAR B4)** Section B.7.1, intense revision is needed considering the Guidelines for completing the PDD and the ACM 001 and the tools it draws upon, as follows: 1. Use the tables given in the PDD template version 3.1 and include values applied with respective sources (and corresponding evidences) for all parameters; 2. Do NOT copy paste the text from the methodology or tools only, but rather fill in the tables leaving only the text applicable to the project activity; 3. Frequency of measurement for all parameters should be included; 4. Please include the parameters: $EF_{grid},OM_{,y}$; $EF_{grid},BM_{,y}$; $EC_{PJ,y}$; FC_y; 5. $LFG_{total,y}$ and $LFG_{flare,y}$, please adjust the description of the measurement procedures to be in line with guidance in ACM001, version 11: “average value in a time interval not greater than an hour shall be used in the ER calculations” ; in addition clarify that there will be only one flare; 6. $PE_{flare,y}$; it is not measured, but calculated as per the “tool to determine project emissions from flaring gases containing methane”;	1/		

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
	7. W_{CH4}; $t_{O2,h}$ and $fv_{CH4,FG,h}$: specify the type of gas analyzer; 8. $PE_{EC,y}$: remove the statement in data unit that the EF is established ex-ante; it is not measured, but calculated; 9. $F_{vi,h}$: revise the table, as the text has been copied paste and also as the simplified approach will be used, the parameter will be calculated based on W_{CH4}, not measured; 10. PE: clarify what it refers to (presumably $PE_{EC,y}$, but it is already included); 11. Regulatory requirements: delete, as it is not monitored regularly, but verified at the renewal of the crediting period; 12. Calibration should be better described (average leak flow rate).			
B.5.7. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change. *Describe the steps taken to validate this issue.*	Several CARs have been raised and have to be closed out before forming an opinion. Please refer to the CARs and comments in items above.	/PDD/ /ACM0001/	~~CAR B1~~ ~~CAR B2~~ ~~CAR B3~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
B.6. Monitoring of Emission Reductions *It is assessed whether the monitoring plan is appropriate for the project activity and in line with the applied methodology.*				
B.6.1. Are all monitoring parameters required by the applied methodology contained in the monitoring plan? (EB 51 Annex 3, §§ 67 (e), 120, 122 (a) , 123) *Assess whether all applicable parameters listed in the methodology are included in the monitoring plan.* *Pl. check further whether the selection of parameters not to be monitored (section B.6.2) is appropriate and in line with the applied methodology.* *In case of different approaches can be chosen acc. to the methodology assess whether the selection of parameters is justified and correct.*	*Description:* No, section B.7.1 needs intense revision. *Justification of evidences:* PDD and ACM0001 version 10 were checked accordingly. *Conclusion:* Please, refer to CAR B4 in item B.5.5.	/PDD/ /ACM0001/	~~CAR B4~~	OK
B.6.2. Are the means of monitoring of all parameters contained in the monitoring plan feasible and in accordance with the requirements of the applied methodology? (EB 51 Annex 3, § 122 (a), 122 (b), 123) *Assess whether the provided information for all parameters w.r.t.*	*Description:* No, section B.7.1 needs intense revision. *Justification of evidences:* PDD and ACM0001 version 10 were checked accordingly. *Conclusion:* Please, refer to CAR B4 in item B.5.5.	/PDD/ /ACM0001/	~~CAR B4~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
a) *Label (name of the data / parameter)* b) *data unit* c) *description* d) *source of data* e) *measurement equipment / method / procedure* f) *monitoring frequency* g) *QA/QC procedures* *are appropriately described and in compliance with the requirements of the methodology..*				
B.6.3. Have all means of implementing the monitoring plan, e.g. equations necessary for ex-post emission reduction calculation, been described clearly and in line with the methodology? (EB 51 Annex 3 122 (b), 123) *Check whether all necessary equations have been provided in the PDD. Pl. consider that ex-post and ex-ante calculations might be different.* *Please consider that additional equations might be necessary to calculate auxiliary parameters.*	*Description:* No, section B.7.1 needs intense revision. *Justification of evidences:* PDD and ACM0001 version 11 were checked accordingly. *Conclusion:* Please, refer to CAR B4 in item B.5.5.	/PDD/ /ACM0001/	~~CAR B4~~	OK
B.6.4. Is it likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity?	*Description:* Section B.7.2 needs some revision for a better assessment. *Justification of evidences:* PDD and ACM0001 version 10 were checked accordingly.	/PDD/ /ACM0001/	~~CAR B5~~	OK

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
(EB 51 Annex 3 123 (c)) *Assess whether the described monitoring arrangements are sufficient and realistic to enable a thorough monitoring. Pl. consider also special monitoring conditions, e.g. downtimes of monitoring equipment etc.*	*Conclusion:* **(CAR B5)** In B.7.2/Annex 4: 1. It is not necessary to list all monitored parameters, as they are (shall be) described in B.7.1; in addition, the list is not complete and correct. If kept, it must be updated and corrected to be exact in line with the parameters described in B.7.1; 2. Improve Figure 4, indicating the actual parameters which will be measured and respective location and measurement instruments/equipment. Define the lines as LFG, exhaust gases from flare, electricity input and fossil fuel input; 3. Please include description of overall project responsibility as well as responsibilities within the CDM monitoring system; 4. Please provide information about training, maintenance, data management and archiving procedures (including back-up) and data substitution procedures.			
B.6.5. Are the QA/QC procedures appropriate sufficient to ensure the emission reductions achieved from the project activit can be reported ex-post and verified? (EB 51 Annex 3 123 (b)) *Please consider the description given in section B.7.2.*	*Description:* Sections B.7.1 and B.7.2 need some revision for a better assessment. *Justification of evidences:* PDD and ACM0001 version 10 were checked accordingly.	/PDD/ /ACM0001/	~~CAR B4~~ ~~CAR B5~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
Describe which QA/QC provisions are considered. Address Quality Management System provisions, calibration and maintenance of equipment. Address further any review procedures.	*Conclusion:* Please refer to CAR B4 and B5 above.			
B.6.6. Are procedures identified for data management? (EB 51 Annex 3 123 (b)) *Check whether appropriate provisions are considered for data management including responsibilities, what records to keep, storage area of records and how to process performance documentation* *Check further the data archiving provisions for the project activity and ensure that provisions are made to archive data for the whole crediting period + 2 years.*	*Description:* Sections B.7.1 and B.7.2 need some revision for a better assessment. *Justification of evidences:* PDD and ACM0001 version 11 were checked accordingly. *Conclusion:* Please refer to CAR B4 and B5 above.	/PDD/ /ACM0001/	~~CAR B4~~ ~~CAR B5~~	OK
C. Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*				

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
C.1. Is the project's starting date clearly defined and evidenced? (EB 51 Annex 3, §98) *Check whether the starting date is correct. Apply the definition of the project starting date as per the "Glossary of CDM terms".*	*Description:* The reported starting date is in the future, as according to the representatives of the project activity, the date will be the signed contract of clay purchase/PSD/ and its transport/PSD/. As interview with the PP, these contracts will be signed on June 18th 2010. *Justification of evidences:* The draft contract of the clay purchase/PSD/ and its transport/PSD/ were checked. *Conclusion:* The validation team confirms that the starting date of the project activity is in accordance with the CDM glossary of terms, as the date of signature of the clay purchase contract is considered the date on which the PP has committed to expenditures related to the implementation of the project activity. However, see CL below. **(CL C1)** In section C.1.1, please reference the starting date. In addition, please put the date in the format DD/MM/YYYY, as required by the Guidelines for completing the PDD.	/PDD/ /PSD/ /PSD/ /GT/ /PSD/	~~CL C1~~	OK
C.2. Is the project's operational lifetime clearly defined and evidenced? *Check whether the project lifetime is correctly defined. Consider the guidance on the assessment of investment analysis (annex to the additionality tool).* *Check in case of phased implementation this has been*	*Description:* Yes. The project's operational life time was defined by the contract concession between Nova Gerar and São Gonçalo Municipality. The estimated operational life time of the project activity is 19.14 years and the contract informs the landfill concession of 15 years renewable for more 10 years.	/PDD/ /OLT/	~~CL C2~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
reflected throughout the whole PDD incl. the financial assessment, if applicable.	*Justification of evidences:* Concession contract/OLT/ could be verified during the on site visit. *Conclusion:* **(CL C2)** It is necessary to describe in the document how was defined this expected life time of 21 years.			
C.3. Is the start of the crediting period clearly defined and reasonable? *Check whether the envisaged starting date of the crediting period is realistic, taking into consideration the times needed for validation and registration.*	*Description:* The starting date of the first renewable period is 2011/01/01. *Justification of evidences:* PDD was checked accordingly. *Conclusion:* This date is realistic and reasonable.	/PDD/ /IM01/	OK	OK
D. Environmental Impacts *Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the DOE.*				
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)? (EB 51 Annex 3, §§ 130 – 132) *Check the host party regulations, regarding EIA.*	*Description:* There are no requirements by the Brazilian legislation for an EIA, once the project had been operating for many years as São Gonçalo's municipality dump site. However, an installation licence was required for all activities	/PDD/ /IL/ /ES/	~~CL D1~~ ~~CL D2~~ ~~FAR D1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	that will be developed in the process of the environmental recovery of the area of the dumpsite and activities for exploration of the landfill gas collection and flaring. *Justification of evidences:* It could be verified the installation licence required and furthermore an Environment Study from Itaoca Landfill done Arcadis Hidro Ambiente S.A. was presented to the validation team. *Conclusion:* **(CL D1)** In section D.1, please: 1. Clarify that an EIA is not required by the project activity as Itaoca has been operating for a long time and that a request for a installation license has been submitted to FEEMA; **2.** Provide precise reference for the GHG inventory done by CETESB. **(CL/ FAR D2)** In section D.2, please clarify in the PDD the licenses necessary for the enterprise.			
D.1.2. In case an Environmental Impact Assessment (EIA) is requested by the host party, has it been carried out and if applcable duly approved? (EB 51 Annex 3, §§ 130 – 132) *Check the EIA and its approval, if applicable.*	*Description:* As justified in D.1.1, an EIA was not required. However, as a requirement of the installation licence, an environmental study of the area was done to raise the environmental impacts that had occurred during the landfill past operation time. São Gonçalo's dump site will be enclosed by Nova Gerar and environmental sanitation actions will be carried out	/PDD/ /IL/ /ES/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	to mitigate the negatives impacts of the dump site operation time. *Justification of evidences:* Environment Study from Itaoca Landfill done Arcadis Hidro Ambiente S.A. was presented and verified to the validation team. *Conclusion:* No discrepancies were found.			
D.1.3. Has an analysis of the environmental impacts of the project activity been sufficiently described and in line with the host party environmental legislation? (EB 51 Annex 3, §§ 129 – 131) *Check the PDD (section D). Check whether the project will create any adverse environmental effects.* *Check the relevant national environmental legislation.*	*Description:* São Gonçalo dump site was built with no environmental management actions and has been operating for many years in the same way. As a requirement of the concession agreement, the dump site will finish operation and the waste disposal will be transferred to another place, which will then be, in fact a well managed sanitary landfill with, as opposed to the previous situation of Itaoca, which could be classified as a non-managed dump site. Some environmental and social actions have already been done in the area in order to try reducing the impacts caused by the incorrect landfill management (e.g. covering with soil, recirculation of leachate, etc) As described in the PDD, the project activity (by collecting and flaring landfill gas) will reduce some environmental effects of uncontrolled releases: - removing the risks of toxic effects in the local;	/PDD/ /ES/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	- reduction of the nitrogen oxide production, release of organic compounds and amounts of toxic materials (as mercury and dioxins); - reduction of the leachate by an evaporator treatment system that may be installed in the area to mitigate the groundwater and surface water contamination , - minimizing the risks of fire or explosions, landfill gas migration, dust, odour, pests, vermin, unsightliness, and litter. As negative impacts, there will be some noise increase in the local, associated with the leachate evaporator system. *Justification of evidences:* PDD and Environmental Study were checked. *Conclusion:* As a whole it can be assessed that the project will have an overall very positive impact, as the un-managed dump-site of Itaoca will be closed and to a certain extent the accumulated impacts of decades of bad management will be mitigated and a new managed landfill site will receive the waste generated by the city of Sao Gonçalo			
D.1.4. Are transboundary environmental impacts considered in the analysis? (EB 51 Annex 3, §§ 130 – 132) *Check the documents and local official sources / expertise*	*Description:* As required by the installation licence, an environmental study of the area was made considering the project impacts. The main transboundary environmental impacts affected by	/PDD/ /ES/	OK	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
regarding transboundary environmental impacts.	the landfill past operational time are the air pollution and water contamination. As part of the concession terms, the landfill will cease operations and the air pollution will be reduced by the gas collection and flaring system that will be installed in the project site. *Justification of evidences:* PDD and Environmental Study were checked. *Conclusion:* Transboundary environmental impacts were considered in the analysis.			
E. Stakeholder Comments *The DOE should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.*				
E.1. Have relevant local stakeholders been invited to consultation prior to the publication of the PDD? (EB 51 Annex 3, § 127) *Check by means of document review and interviews with local stakeholders if and when a local stakeholder consultation process has been carried out.*	*Description:* Yes, the following local entities received a letter explaining about the project activity: • Municipal Administration of São Gonçalo – Rio de Janeiro; • Municipal Secretariat of Environment of São Gonçalo – Rio de Janeiro;	/PDD/ /IM01/ /SHCP/ /mct/	~~CL E1~~	OK

Checklist Item (incl. guidance for the validation team)	Validation Team Comments (justification and substantiation of information, data and evidences)	Ref.	Draft Concl.	Final Concl.
	• Municipal Legislation Chamber of São Gonçalo, Rio de Janeiro; • Rio de Janeiro State Foundation of Engineering and Environment; • Public Ministry of Rio de Janeiro State; • Brazilian NGOs Forum; • Estruturar – Cooperative of scavengers Itaoca – São Gonçalo- Rio de Janeiro; • ABES – Brazilian Association of Sanitary and Environment Engineering; • Federal Public Ministry of Rio de Janeiro. *Justification of evidences:* It could be verified during the on site visit the invitations of the mentioned local stakeholders. *Conclusion:* **(CL E1)** In section E.1, please include a statement that resolution #7 of CIMGC has been followed. Provide a website address where the PDD in is Portuguese as well as the document required by Annex II of the Resolution is hosted till registration of the project.			

Checklist Item (incl. guidance for the validation team)	**Validation Team Comments** (justification and substantiation of information, data and evidences)	**Ref.**	**Draft Concl.**	**Final Concl.**
E.2. Can the local stakeholder consultation process be assessed as adequate? (EB 51 Annex 3, § 128 (a) – 128 (c)) *Describe what assessment steps have been undertaken to assess the adequacy of the stakeholder consultation process. Give a final opinion on the adequacy.* *Please consider the following requirements in this context:* *(a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited;* *(b) The summary of the comments received as provided in the PDD is complete;* *(c) The project participants have taken due account of any comments received and have described this process in the PDD.*	*Description:* Yes, the stakeholder consultation was made by letters inviting comments with the executive summary of the project that were sent to the local stakeholders mentioned above. The consultation process was done accordingly resolution #1 and #7 of CIMGC. (Brazilian Inter-ministerial Commission of Global Climate Change) *Justification of evidences:* The validation team reviewed the proof of receipt of the letters sent to stakeholders and the comments that were received. *Conclusion:* No negative comments were received, however see CL below. **(CL E2)** In section E.3, please clarify “how” the suggestion of FBOMS will be treated by the project developer;	/PDD/ /IM01/ /SHCP/ /mct/	~~CL E2~~	OK

ANNEX 2: ASSESSMENT OF BASELINE IDENTIFICATION

Table A-2: Assessment of Baseline Identification (EB 51 Annex 3, §§ 82 – 85)

☐	Baseline is not identified
☒	Assessment of baseline see below

Baseline Alternatives identified	Inline with the Methodology?	Eliminated	Reasons for elimination / non-elimination from list of alternatives	Evidence used	DOE Assessment	
					Appropriateness of elimination	Assessment of validation team (results and means of assessment)

Alternative 1 The landfill operator would invest in landfill gas collection and flaring equipment, but not as part of the CDM. (LFG1 as methodology ACM0001 – See CL B4)	☒	☒	According to the investments costs in section B.5 sub-step 1A, this alternative is not economically attractive to be realized without the incentive of carbon credits, once there are no regulations or incentives to capture and flare LFG in Brazil.	/PDD/ /XLS1/ /NBR 8419/ /PRO1/ /PRO2/ /QUO/ /EPEP/	☒	As mentioned in alternative 1, in Brazil there is no legislation that obligates the capture of the landfill gas. The release in the atmospheric is common practice that does not implies in fines. Proposals/PRO1//PRO2/ and quotations/QUO/ for many technology providers were verified by the validation team, that could conclude that it is an expensive technology which requires high investment to implement and imply in operation costs and that brings no incentives without the CERs revenues, being therefore a not economically attractive alternative for the PP. The elimination of this alternative is assessed as appropriate.
Alternative 2 The business as usual scenario. The landfill gas would continue to be released to the atmosphere as there are no requirements in place that would mandate landfill gas capture and flaring. (LFG2 as methodology – See CL B4)	☒	☐	This alternative is not eliminated, since atmospheric release of LFG is the current common practice in Brazil. There are no legal requirements or any current planning for a legislation to capture and combust greenhouse gases produced by landfills in Brazil. Brazilian regulatory requirements relating to landfill operation (NBR 8419 and ABNT 1984, sections 6.1.6.5) don't refer to landfill gas capture. .	/PDD/ /IM01/ /NBR 8419/ /unfccc/	☐	It was checked by the validation team and it can be confirmed that there is no legislation that obligates the greenhouse gas capture in landfills in Brazil. NBR 8419 and ABNT 1984 were also verified and there is no mention about LFG collection obligation. It was also checked others projects in Brazil with the same methodology in unfccc website ("SANTECH – Saneamento e Tecnologia Ambienatl LTDA – SANTEC-Resíduos landfill gas emission reduction Project Activity" – Ref. number 1908 and Terrestre Ambiental Landfill Gas Project – Ref. Number 1133). Combined with the analysis of these projects and the experience of the validation team, it can be concluded that common practice in Brazil is the release of the LFG in the atmosphere. So, the non-elimination of this alternative is assessed as correct.

Alternative 3 LFG collections and utilization for power generation or gas supply off site.	☒	☒	There are no regulations or incentives to capture and flare landfill gas or for the utilization of the landfill gas to produce power due to the isolation of the project site and challenges associated with both electricity distribution and connection to the central grid. Since no LFG will be used for generation of electricity or heat energy for export to a grid and/or to a nearby industry or used on-site, this alternative is not a realistic and credible alternative.	/PDD/ /unfccc/ /OLT/	☒	This type of project is only viable for larger scale projects, which usually consider an increasing volume of garbage, the opposite case of Itaoca, where the generation of biogas is declining because the site will be deactivated at the end of this year, as part of contract concession/OLT/. Furthermore, as observed in some projects in Brazil that applies the same methodology ("SANTECH – Saneamento e Tecnologia Ambienatl LTDA – SANTEC- Resíduos landfill gas emission reduction Project Activity" – Ref. number 1908 and Terrestre Ambiental Landfill Gas Project – Ref. Number 1133), the common baseline scenario is the release of the landfill to the atmosphere. So the elimination of this alternative is assessed as approriate

ANNEX 3: ASSESSMENT OF FINANCIAL PARAMETERS

Table A-3: Assessment of Financial Parameters (EB 51 Annex 3, §§110, 111, 113/ in case financial parameters stem from FSR §112,)

☐	No financial parameters are used for additionality justification
☒	Assessment of all financial parameters see below

Parameter	Value applied	Unit	Source of Information (please indicate document and page)	Reference	DOE ASSESSMENT		
					Correctness of value applied	Appropriateness of information source	Comment
Exchange Rate	2.29	Euro per R$	Webiste of the Central Bank o Brazil	/bcb/ /XLS1/	☒	☒	The source of the exchange rate is the Central Bank of Brazil. The value could be checked directly from the website of the bank. The date used is the date of investment decision, as reported in C.1.1, which is 2010-07-20.
Exchange Rate	1.29	Euro per US$	Website of the Central Bank o Brazil	/bcb/ /XLS1/	☒	☒	The source of the exchange rate is the Central Bank of Brazil. The value could be checked directly from the website of the bank. The date used is the date of investment decision, as reported in C.1.1, which is 2010-07-20.
Inflation Rate - Brazil	2006 1.20 2007 1.14 2008 1.08 2009 1.04 2010 1.00	%	Website of the Central Bank o Brazil	/bcb/ http://www.bcb.gov.br/?indicators /XLS1/	☒	☒	The source is the Central Bank of Brazil. The value could be checked directly from the website of the bank. The inflation rate is used to convert all project cost to constant 2010 costs, in order to be consistent with the date of investment decision, which is 2010-07-20 as reported in C.1.1.

Inflation Rate - USA	2006 1.08 2007 1.05 2008 1.01 2009 1.01 2010 1.00		Bureau of Labor Statistics of the US Dept of Labor	http://www.bls.gov/cpi/cpi_dr.htm#2007 /XLS1/	☒	☒	The source is the Bureau of Labor Statistics of the US Dept of Labor. The value could be checked directly from the website of the bank. The inflation rate is used to convert all project cost to constant 2010 costs, in order to be consistent with the date of investment decision, which is 2010-07-20 as reported in C.1.1.
Pipelines and wellheads	354,895.19	€	- Proposal LANDTEC Annex 5 (wellheads) - Proposal AFLON Annex 6 (tubes) - Proposal DRILL Annex 7 (Services)	/QUO/ /XLS1/	☒	☒	The value used as pipelines and well heads investment were evidenced in the documents: Annex 5 – LANDTEC, Annex 6 – AFLON tubos and Annex 7 – DRILL Services which are quotations come from different manufactures and were provided to the validation team. Values converted to constant 2010 prices using the exchange rates and inflation rates above as clearly seen in the supporting excel sheet
Biogas plant (blowers, chillers, flares, manifolds and others)	958,228.56	€	-Proposal John Zinc- Annex 2 (Equipment) -Proposal John Zinc Annex 3 (Assembly) - Proposal LANDTEC (Annex 4)	/PRO1/ /PRO2/ /QUO/ /XLS1/	☒	☒	The value used as biogas plant investment includes flares, blower system, installation of both, monitoring system of the flare emission and small parts and other costs. These values were evidenced in the documents: Annex 2 – Proposta JZ Equipamentos, Annex 3 – Proposta JZ Montagem and Annex 4 – LADTEC Eficiencia. . Values converted to constant 2010 prices using the exchange rates and inflation rates above as clearly seen in the supporting excel sheet
Engineering expenses	125,222.82	€	Proposal CRA Annex 8	/QUO/ /XLS1/	☒	☒	The value used as engineering expenses design and project costs. This value was evidenced in the documents: Annex 8 – Proposta CRA. Quotation was provided to the validation team on 12/04/2010.

							Values converted to constant 2010 prices using the exchange rates and inflation rates above as clearly seen in the supporting excel sheet
Total Investment cost	**1,438,346.58**	**€**	Sum of the values above	/XLS1/ See above	☒	☒	As clearly evidenced in the supporting excel sheet, this value is the sum of the previous values. It is widely known that LFG collection and flaring projects require significant investment, as it can be confirmed in by looking into many registered CDM projects with ACM 001. Even if the value was 10 times lower, as the project applies a Simple Cost Analysis, the conclusion of the financial analysis and demonstration of additionality would not be different, as the project generates no economic benefits than the revenues from CERs.

ANNEX 4: ASSESSMENT OF BARRIER ANALYSIS

Table A-4: Assessment of Barrier Analysis (EB 51 Annex 3, § 117)

☒	No barrier parameters are used for additionality justification
☐	Assessment of barriers see below

Kind of Barrier (invest, tech, other)	Description of Barrier	Evidence used	Assessment of validation team	
			Appropriateness of information source	Explanation of final result
			☐	

ANNEX 5: OUTCOME OF THE GSCP

Table A-5: Outcome of the Global Stakeholder Consultation Process

(§§ 41, 42 VVM Version 1)

☒	No comments were received during the global stakeholder consultation period
☐	Comments were received during the global stakeholder consultation period. The comments (in unedited form) and the consideration/response of the validation team are presented below:

Comment No.:	Comment by:	Inserted on:	Subject	Comment *)	Response validation team *)	Conclusion (incl. CARs CLs or FARs)

*) In case clarifications have been requested by the validation team corresponding rows shall be added

ANNEX 6: APPOINTMENT CERTIFICATES OF TEAM MEMBERS

TÜV NORD Certification

TÜV NORD CERT GmbH • P.O. Box 10 32 61 • 45032 Essen • Germany

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Our/ Your Reference	Contact	Direct Dial	Date
	E-Mail: rwinter@tuv-nord.de	Phone: -3329 Fax: -2139	14.04.2010

Authorization for Technical Areas / Sectoral Scopes

Dear Mr. Schubert,

According to the requirements as specified in the TÜV NORD JI/CDM CP directives and the proven technical experience you are authorized for technical areas / sectoral scopes as follows:

Sectoral Scope	Technical Area	Basis for authorization	Date of Authorization
1	U – Ren. Biomass	2002-01 – 2007-10: University of Duisburg-Essen, research assistant at the department waste and waste water environmental engineering.	2010-02-09
1*	S – Ren. Hydro	TÜV NORD JI/CDM CP VVC project activity: 09/359 09/479	2010-04-14
1*	T – Ren. Wind	TÜV NORD JI/CDM CP VVC project activity: 08/060 08/299	2010-04-14
13	N – Waste Management	2002-01 – 2007-10: University of Duisburg-Essen, research assistant at the department waste and waste water environmental engineering.	2010-02-09
13	AD – Waste Water Treatment	2002-01 – 2007-10: University of Duisburg-Essen, research assistant at the department waste and waste water environmental engineering.	2010-02-09

* Extension of technical areas within sectoral scopes

Best regards,

Dipl.-Ing. Rainer Winter
Head of TÜV NORD JI/CDM Certification Program

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Account No.: 0407995900
BIC (SWIFT-Code): DEUTDEDE
IBAN-Code: DE 26 3607 0050 0407 9959 00

TÜV NORD

CERTIFICATE OF APPOINTMENT

Ms. Inga Nagel

born on 1971-12-12

satisfies the requirements as specified in the TÜV NORD JI/CDM CP directives and is hereby appointed as

TÜV NORD JI/CDM Assessor

For the following scopes: 1, 8, 13, 14, 15

The present appointment will terminate on 2012-01-15

Certification registration No. 09 01 01 - 45

Essen, 2009-01-16

Head of TÜV NORD JI/CDM Certification Program
of TÜV NORD CERT GmbH

CERTIFICATE OF APPOINTMENT

Ms. Alexandra Nebel

born on 1980-07-25

satisfies the requirements as specified in the TÜV NORD JI/CDM CP directives and is hereby appointed as

TÜV NORD CDM Assessor

The present appointment will terminate on 2012-11-19

Certification registration No. 09 11 08 - 95

Essen, 2009-11-20

Head of TÜV NORD JI/CDM Certification Program of TÜV NORD CERT GmbH

CERTIFICATE OF APPOINTMENT

Mr. Ricardo Ribeiro Lopes

born on 1972-11-03

satisfies the requirements as specified in the TÜV NORD JI/CDM CP directives and is hereby appointed as

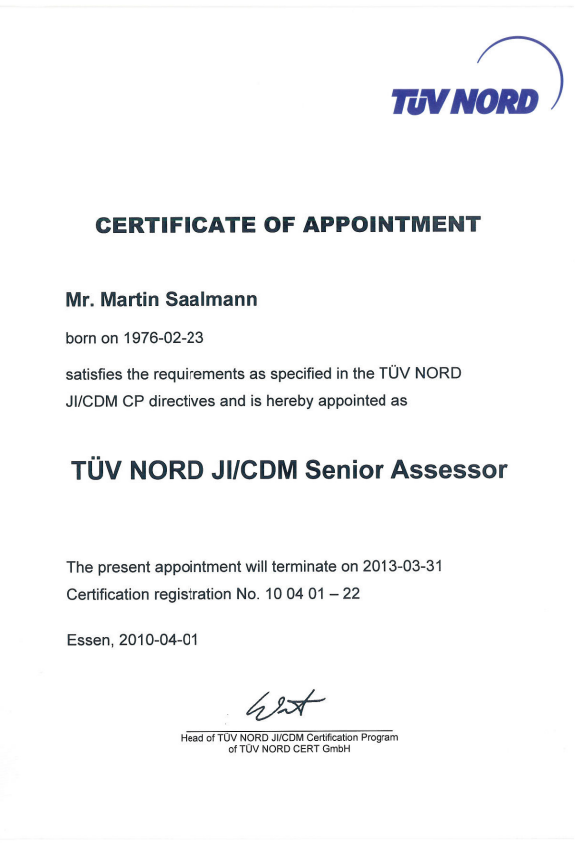
TÜV NORD CDM Expert

The present appointment will terminate on 2012-11-16

Certification registration No. 09 11 05 - 77

Essen, 2009-11-17

Head of TÜV NORD JI/CDM Certification Program of TÜV NORD CERT GmbH



CERTIFICATE OF APPOINTMENT

Mr. Martin Saalmann

born on 1976-02-23

satisfies the requirements as specified in the TÜV NORD JI/CDM CP directives and is hereby appointed as

TÜV NORD JI/CDM Senior Assessor

The present appointment will terminate on 2013-03-31

Certification registration No. 10 04 01 – 22

Essen, 2010-04-01

Head of TÜV NORD JI/CDM Certification Program of TÜV NORD CERT GmbH

TÜV NORD Certification

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Our / Your Reference | Contact: E-Mail: winter@tuv-nord.de | Direct Dial: Phone: -3329, Fax: -2139 | Date: 09.02.2010

Authorization for Technical Areas / Sectoral Scopes

Dear Mr. Winter,

According to the requirements as specified in the TÜV NORD JI/CDM CP directives and the proven technical experience you are authorized for technical areas / sectoral scopes as follows:

Sectoral Scope	Technical Area	Basis for authorization	Date of Authorization
1	G – Energy Industry	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 4) 2003-09 – 2005-06: Fraunhofer Institut Umwelt-, Sicherheits-, Energietechnik UMSICHT, Oberhausen/Germany, research assistant. (evidences 10, 15)	2010-02-09
1	K – Fuel switch	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 4) 2003-02 - 2003-05: Fraunhofer USA Center for Energy and Environment, Pittsburg/USA, project member (evidence 9)	2010-02-09
1	S – Ren. Hydro	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 5)	2010-02-09
1	T – Ren. Wind	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 5)	2010-02-09
1	U – Ren. Biomass	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 4) 2003-09 – 2005-06: Fraunhofer Institut Umwelt-, Sicherheits-, Energietechnik UMSICHT, Oberhausen/Germany, research assistant. (evidences 10, 7, 11) 2005-09 – 2005-11: Institute of Process Engineering, Chinese Academy of Sciences, Beijing/China, Project Member. (evidence 6) 2003-02 - 2003-05: Fraunhofer USA Center for Energy and Environment, Pittsburg/USA, project member (evidence 9)	2010-02-09
1	V – Ren. Geothermal	2003-09 – 2005-06: Fraunhofer Institut Umwelt-, Sicherheits-, Energietechnik UMSICHT, Oberhausen/Germany, research assistant. (evidences 10)	2010-02-09
1	W – Ren. Solar	2003-09 – 2005-06: Fraunhofer Institut Umwelt-, Sicherheits-, Energietechnik UMSICHT, Oberhausen/Germany, research assistant. (evidences 10) 2005-09 – 2005-11: Institute of Process Engineering, Chinese Academy of Sciences, Beijing/China, Project Member. (evidence 6)	2010-02-09

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2	H – Distribution Power	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, PDD UNFCCC 2#16) 2003-09 – 2005-06: Fraunhofer Institut Umwelt-, Sicherheits-, Energietechnik UMSICHT, Oberhausen/Germany, research assistant. (evidences 10, 15)	2010-02-09
2	I – Distribution Heat	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 5) 2003-09 – 2005-06: Fraunhofer Institut Umwelt-, Sicherheits-, Energietechnik UMSICHT, Oberhausen/Germany, research assistant. (evidences 10, 15)	2010-02-09
3	E – EE households	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 6) 2005-09 – 2005-11: Institute of Process Engineering, Chinese Academy of Sciences, Beijing/China, Project Member. (evidence 6)	2010-02-09
4	F – EE industry	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 3, 4, 5, 7)	2010-02-09
5	J – Distribution and treatment gas	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 3, 5, PDD UNFCCC 2#16)	2010-02-09
13	AD – Waste Water Treatment	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 3, 5)	2010-02-09
13	N – Waste Management	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 3, 5, PDD UNFCCC 2#16) 2003-09 – 2005-06: Fraunhofer Institut Umwelt-, Sicherheits-, Energietechnik UMSICHT, Oberhausen/Germany, research assistant. (evidences 10, 15)	2010-02-09
15	A – Agriculture	2005-09 – 2009-09: CIM-Integrated Expert with Environmental Science Research & Design Institute of Zhejiang Province, Hangzhou/China, Junior Advisor for energy saving and cleaner production. (evidences 12, 13, 3, 5, 9)	2010-02-09

* Extension of technical areas within sectoral scopes

Best regards,

Dipl.-Ing. Rainer Winter
Head of TÜV NORD JI/CDM Certification Program