



**Validation Report**

**Aurá Landfill Gas Project**

**CDM.Val0355**

**May 26th, 2006**

**SGS Climate Change Programme**  
SGS United Kingdom Ltd  
SGS House  
217-221 London Road  
Camberley Surrey  
GU15 3EY  
United Kingdom



---

# ANNEX 1

## REPORT ON COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

---

### Aurá Landfill Gas Project

**Project No.** CDM.Val0355

**Date:** 26/05/2006



---

## ANNEX 2

# LIST OF DOCUMENTS ATTACHED

---

### Aurá Landfill Gas Project

**Project No.** CDM.Val0355

**Date:** 26/05/2006

- /1/ Annex 1: Report on Comments by Parties, Stakeholders and NGOs
- /2/ Annex 2: Comprehensive list of documents attached
- /3/ Annex 2: List of persons interviewed
- /4/ Annex 4: Validation Protocol (UK.AU4.CDM.Val0355)
- /5/ Annex 5: Overview of findings (UK.Findings.CDM.VAL0355)
- /6/ Annex 6: Answers from local assessor
- /7/ Annex 7: Validation Report (UK.AR6.CDM.VAL0355)
- /8/ Annex 8: Modalities of communication
- /9/ Letter of Approval from the Government of Brazil
- /10/ Letter of Approval from the Government of United Kingdom

## **1 INTRODUCTION**

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall make invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This report describes this process for this particular project.

## **2 PROJECT DETAILS**

### **2.1 Project title**

Aurá Landfill Gas Project.

### **2.2 Description of how and when the PDD was made publicly available**

The Project Design Documents and its annexes were made publicly available from 02 Dec 2005 until 31 Dec 2005 on the website

<http://cdm.unfccc.int/Projects/Validation/view.html?ProjectId=G38C8XGV4USLRM0I6FB6PPL6J537FW&OE=SGS-UKL> and comments were invited through the UNFCCC CDM homepage.

## **3 COMMENTS RECEIVED**

### **3.1 Description of how comments were received and made publicly available**

Comments could be submitted through a web interface or by email or fax.

As per procedures on public availability of the CDM project design documents and for receiving comments as referred to in paragraphs 40b and 40c of the CDM modalities and procedures, any received comments are displayed from the end of the 30 days commenting period, at the website listed in section 2.2.

### **3.2 Compilation of all comments received**

Follow the comments received during 30 days commenting period:

#### **Comment I:**

As in Brazil, public auction is required for public entities to contract services, concessions, partnerships, and other, is absolutely necessary to provide answers to several questions that are not clear regarding "Aurá Landfill Gas Project", as follows:

1. In which date was the public auction that contracted CONESTOGA-ROVERS & ASSOCIADOS Engenharia S/A?
2. What is the type of the contract? Services Provider, concession, partnership or other?

3. What were the contract conditions established for remunerating CONESTOGA-ROVERS & ASSOCIADOS Engenharia S/A?
4. In which date was the public auction that established a partnership, or contracted BGC International?
5. What is BGC International role as project participant and what are the remunerating basis and criteria for remunerating on this contract?
6. How does Belém Municipality intend to commercialize its CERs ?
7. Is it clear for the municipality that they are not authorized by local legislation to commercialize CERs prior to its emissions?
8. As it's a public landfill, it's mandatory having public information regarding all procedures and assure it is in compliance to local laws.
9. Must be on the web site, not only the PDD, the Auction documents and contracts signed between the players involved.

#### **Comment II:**

1. The PDD informs that there are no public funds in the project. As the landfill is public (Belém Municipality), and it is understood that no public auction was carried out, what are the criteria applied for selecting the companies involved in the project? How the participants (companies) will be remunerated?

## **4 EXPLANATION OF HOW COMMENTS HAVE BEEN TAKEN INTO ACCOUNT**

#### **Answer for comment I:**

1. In which date was the public auction that contracted CONESTOGA-ROVERS & ASSOCIADOS Engenharia S/A?

There was no public auction for this project. Local authorities have confirmed that a public auction was not necessary.

2. What is the type of the contract? Services Provider, concession, partnership or other?  
The contract is a concession to the rights for the biogas.

3. What were the contract conditions established for remunerating CONESTOGA-ROVERS & ASSOCIADOS Engenharia S/A?

Revenue for Conestoga-Rovers & Associados Engenharia S/A will be generated solely from the sale of certified emission reductions (CERs). No public money will be used in any fashion to remunerate Conestoga-Rovers & Associados Engenharia S/A. Belém Municipality will not provide money to the project but will receive a royalty based on the CERs.

4. In which date was the public auction that established a partnership, or contracted BGC International?

There was no public auction for this project.

5. What is BGC International role as project participant and what are the remunerating basis and criteria for remunerating on this contract?

BGC International is involved as an Annex I party participant and is involved in the CER transaction associated with the project.

6. How Belém Municipality intend to commercialize its CERs ?

Conestoga-Rovers & Associados Engenharia S/A will commercialize CERs from the project and Belém Municipality will receive a royalty for each CER.

7. Is it clear for the municipality that they are not authorized by local legislation to commercialize CERs prior to its emissions?

Belém Municipality will not commercialize the CERs. Conestoga-Rovers & Associados Engenharia S/A will commercialize CERs from the project and is fully cognizant of the international legislation regarding certification of CERs.

8. As it's a public landfill, it's mandatory having public information regarding all procedures and assure it's compliance to local laws.

The project participants will undertake a public consultation session with the local municipality in January 2006. All required stakeholders will be invited and the required advertisements will be delivered beforehand. Additionally, the project participants will complete the documentation required by the host country with respect to environmental and labour laws.

9. Must be on the web site, not only the PDD but, Auction documents and contracts signed between the players involved.

Contracts are not necessary components of the PDD, but will be reviewed by a Designated Operational Entity (DOE) during the validation process to ensure that the requirements for a CDM project activity are met. Conestoga-Rovers & Associados Engenharia S/A will provide these documents to the DOE as part of the validation process and the results of the DOE assessment will be available in the validation report, which will be publicly posted on the UNFCCC website.

#### **Answer for comment II:**

.

Local authorities confirmed that no public auction was required for the project. The landfill belongs to the Municipality. Revenue for Conestoga-Rovers & Associados Engenharia S/A will be generated solely from the sale of certified emission reductions (CERs). No public money will be used in any fashion to remunerate Conestoga-Rovers & Associados Engenharia S/A. Belém Municipality will not provide money to the project but will receive a royalty based on the CERs



---

## ANNEX 3

Overview of documentation that has  
been reviewed and list of persons  
interviewed

---

# AURÁ LANDFILL GAS PROJECT

**Project No.** CDM.Val0355

**Date:** 26/05/2006



This document is an Annex to the validation report for CDM project activity registration. It gives overview of documentation that has been reviewed and names of persons that have been an interviewed as part of the validation.

#### List of documents reviewed

- /1/ Project Design Document, Aurá Landfill Gas Project, version 01, 24 November 2005; version 02, 7 March 2006; version 03, 23 May 2006.
- /2/ Approved consolidated baseline methodology ACM0001 - "Consolidated baseline methodology for landfill gas project activities" (Version 2, 30 September 2005).
- /3/ Approved consolidated monitoring methodology ACM0001 - "Consolidated monitoring methodology for landfill gas project activities" (Version 2, 30 September 2005).
- /4/ Tool for the demonstration and assessment of additionality (28 November, 2005).

#### List of persons interviewed

	Name and position	Company name	Date interviewed
/1/	Guy L. Treadwell / Project Manager	CRA - Conestoga-Rovers & Associates	14 December 2005
/2/	Carlson Cabral / Project Coordinator	CRA - Conestoga-Rovers & Associates	14 December 2005
/3/	Jeancarlo Antunes Azevedo / Project Technician	CRA - Conestoga-Rovers & Associates	14 December 2005

## Annex 4 - Validation Protocol

This validation protocol is designed to ensure that the project meets the requirements for CDM projects that are detailed in paragraph 37 of the CDM modalities and procedures. Each requirement is covered in a separate table. The following requirements are discussed in this protocol:

Requirement	Description	
Participation requirements	The participation requirements as set out in Decision 17/CP.7 need to be satisfied	Covered in table 1
Baseline and monitoring methodology	The baseline and monitoring methodology complies with the requirements pertaining to a methodology previously approved by the Executive Board	Baseline methodology is covered in table 2 Monitoring methodology is covered in table 4
Additionality	The project activity is expected to result in a reduction in anthropogenic emissions by sources of greenhouse gases that are additional to any that would occur in the absence of the proposed project activity	Covered in table 3
Monitoring plan	Provisions for monitoring, verification and reporting are in accordance with relevant decisions of the COP/MOP	Covered in table 5
Environmental impacts	Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party;	Covered in table 6
Comments by local stakeholders	Comments by local stakeholders have been invited, a summary of the comments received has been provided, and a report to the designated operational entity on how due account was taken of any comments has been received;	Covered in Table 7
Other requirements	The project activity conforms to all other requirements for CDM project	Covered in Table 8

## ANNEX 5 - FINDINGS OVERVIEW

### FINDINGS FROM VALIDATION OF AURÁ LANDFILL GAS PROJECT – CDM.VAL0355

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.

Description of table:

Type	Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Please note that this is an open list and more findings may be added as validation progresses.

Date:08/12/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
1	CAR	No letter of approval from an Annex I country (UK) has been provided.	1.1
Date: February 15, 2006 [Comments] CRA Comments: One of the required documents to apply for UK approval is the host country letter of approval from the Brazilian DNA. CRA will apply for the UK DNA letter of approval as soon as the Brazilian DNA issues its letter of approval.			
Date: 15/03/2006 [Acceptance and close out] CAR 1 remains outstanding until we receive the letter from UK DNA.			

Date:08/12/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
2	CAR	No letter of approval by host country (Brazil) has been submitted to the validator, this will only be obtained on delivery of a validation report.	1.2
Date: December 16, 2005 [Comments] CRA Comments: CRA will be able to obtain a letter of approval from the Brazilian DNA after receiving the validation report. The validation report is a required component of the host country approval application package in Brasil.			
Date: 15/03/2006 [Acceptance and close out] Send the validation report to DNA. CAR 2 was cancelled.			

Date:08/12/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
3	CAR	No stakeholders has been consulted. (in process)	7.1, 7.1,

			7.5
Date: February 15, 2006 [Comments] CRA Comments: The stakeholders were invited to comments in January, 2006 (letters). A meeting with local organizations as part of stakeholder consultation process for this project took place on February 1, 2006. A description of the meeting, a list of attendees and a summary of issues raised is provided in an updated version of the Project Design Document.			
Date: 15/03/2006 [Acceptance and close out]: The PDD was updated with this new information and evidences. CAR 3 was closed out.			

Date:08/12/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
4	CAR	The project need to send the letter to stakeholders according "Resolution #1 (2003/09/11) Brazil".	7.3
Date: February 15, 2006 [Comments] CRA Comments: CRA has sent letters to all stakeholders specified in "Resolution #1 (2003/09/11) Brasil" to participate in the public meeting and request stakeholders comments. The public meeting for this project has been completed.			
Date: 15/03/2006 [Acceptance and close out]: The PDD was updated and the letters sent to stakeholder (in January,2006) were verified. CAR 4 was closed out.			

Date:14/12/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
5	NIR	The agreement between CRA and Belem Municipality is not available to be verified during the validation process.	Table 12
Date: 10/03/2006 [Comments] The front page and signing page of the contract is sent to SGS by e-mail. CRA will make available the agreement between CRA and the municipality of Belem at its Sao Paulo office for review.			
Date: 15/03/2006 [Acceptance and close out]: The document was verified. The contract is documented evidence that there is a specific agreement between CRA and Belém Municipality for the development of the LFG project. NIR 5 was closed out.			

Date:14/12/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
6	NIR	A list of equipment to be purchased and installed is not available during the validation process for checking purposes.	Table 12
Date: 10/03/2006 [Comments] A list of key equipment for the LFG collection system is provided by e-mail; it consist of Blowers; Flare unit (installed with flame arrestor, propane pilot system, flame scanner, temperature control dampers, purge blower, and thermocouples); Programmable logic controller (PLC); Flow meters; Gas analyzer; Data acquisition system; Remote alarm transmission system; Uninterruptable power supply (UPS); Condensate pump stations; Condensate handling station; and Heat and flame detectors.			
Date: 15/03/2006 [Acceptance and close out]: The list was sent and verified. It is consistent to the project design. NIR 6 was closed out.			

Date:14/12/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
7	NIR	The project implementation schedule is not available during the verification process.	Table 12
Date: 10/03/2006 [Comments]. The project start up is scheduled for November 1st, 2006. Design activities have started in late 2005.			
Date: 15/03/2006 [Acceptance and close out]: A detailed table was presented, including each stage of the project and dates (43440 Belém Project Schedule.pdf). NIR 7 was closed out.			

Date:14/12/2005

Raised by:Fabian/Aurea

No.	Type	Issue	Ref
8	NIR	Clarify how the amount of energy required to operate the collection system is calculated.	2.5
Date: 10/03/2006 [Comments]. Section E.2 of the PDD provides an estimate for electrical consumption of 37 kWh. This is the estimate for the electricity consumption associated with the mechanical and electrical components of the gas plant required to draw and process an LFG flow ranging from 2,452 cfm (4,166 m <sup>3</sup> /h) in 2006 to 2,523 cfm (4,287 m <sup>3</sup> /h) in 2016. Monthly electrical bills charged to the project will be monitored and considered as the actual energy consumption for the project. The annual electrical consumption of 327 MWh/year was calculated based on 8,760 hours of operating time per year for an hourly energy consumption of 37 kWh.			
Date: 15/03/2006 [Acceptance and close out]: Verified the PDD, version 2. The information provided is acceptable. NIR 8 was closed out.			

#### Observations:

- *Regarding social aspects of the project, ie waste pickers, how they will be accommodated.*

The Municipality of Belém has plans to improve the quality and effectiveness of recycling activities currently conducted by waste pickers at the Aurá Landfill. CRA is willing to assist the Municipality of Belém, providing technical expertise and CRA international experience in similar situations to implement an organized recycling program customized to the local conditions. Specific details of this program will be developed concurrently with the development of the project system.

- *Regarding project management, ensure implementation of the procedures for monitoring, measurements and reporting since the project start the operation..*

CRA has prepared a Design Brief for the project, and once the detailed design is completed, CRA will prepare a tailored Operating & Maintenance Manual.

activities in relevant decisions by the COP/MOP and the Executive Board.

Small sale projects and AR projects have specific requirements, which are covered in Table 9-11. Small scale SSC projects have special requirements, which might deviate from the requirements of other CDM projects. These requirements are tested in table 9. Please note that some questions in table 9 overlap with questions in the other tables. Where the questions in table 9 contradict or overlap questions elsewhere in the checklist, the questions in table 9 shall prevail. For the validation of small scale projects, assessor is required to address the questions in table 9 first before starting with the questions in the other tables.

Further remarks on the use of this document:

- text in *italic blue* is meant as guidance for the assessor
- MoV = Means of Verification, DR= Document Review, I= Interview

This protocol should be adapted as required. For example, if the project is not a small scale project or an AR project, some tables can be deleted.

**Table 1 Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, Letters of Approval and UNFCCC website) All CDM project activities**

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.  <i>To this end, the DNA of an Annex 1 Party shall submit a letter of approval consistent with the requirements of Annex 6 to EB 16. This also requires that the non-host party has nominated a DNA</i>	DR	PDD	No Letter of Approval from an Annex I (UK) has been provided.  One of the required documents to apply for UK approval is the host country letter of approval from the Brazilian DNA. CRA will apply for the UK DNA letter of approval as soon as the Brazilian DNA issues its letter of approval.	CAR 1	

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
<i>to the UNFCCC</i>					
<p>1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily</p> <p><i>To this end, the DNA of a Non-Annex 1 Party shall submit a letter of approval consistent with the requirements of Annex 6 to EB 16, also confirming that the project contributes to sustainable development. This also requires that the host party has nominated a DNA to the UNFCCC</i></p>	DR	PDD	<p>No Letter of Approval by host country (Brazil) has been submitted to the validator, this will only be obtained on delivery of a validation report.</p> <p>CRA will be able to obtain a letter of approval from the Brazilian DNA after receiving the validation report. The validation report is a required component of the host country approval application package in Brasil.</p> <p>CAR 2 was cancelled.</p>	CAR 2 Send the validation report to DNA	
<p>1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects</p> <p><i>Check UNFCCC website for most recent list – some countries could be excluded from participation if they have failed to fulfil other inventory and reporting requirements</i></p>	DR	PDD	<p>Yes, Brazil – date of ratification 23-August-2002</p> <p>UK – – date of ratification 31 - May - 2002</p>	Ok	Ok
<p>1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario</p> <p><i>To this end, the project shall correctly apply approved baseline and monitoring methodologies. See Table 4 below</i></p>	DR	PDD ACM 0001	<p>Yes, The current practice at Aurá landfill is to allow the uncontrolled release of LFG into the atmosphere. The collection and destruction of the methane in the project activity will reduce GHG emissions. ACM001 is correctly applied.</p>	Ok	Ok

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
<p>1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available</p> <p><i>These will have resulted from the publishing of the PDD during the validation process. Note that regular and SSC projects are to be displayed for 30 days, "normal" AR projects are to be displayed for 45 days</i></p>	DR	UNFCCC site	<p>PDD publicly available until 31 December 2005.</p> <p><a href="http://cdm.unfccc.int/Projects/Validation/view.html?ProjectId=G38C8XGV4USLRM0I6FB6PPL6J537FW&amp;OE=SGS-UKL">http://cdm.unfccc.int/Projects/Validation/view.html?ProjectId=G38C8XGV4USLRM0I6FB6PPL6J537FW&amp;OE=SGS-UKL</a></p> <p>The comments received are presented in Annex 1 of the validation report.</p>	Ok	Ok
<p>1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance</p> <p><i>See Table 8 below. Note requirements for regular and AR projects are different</i></p>	DR	PDD	Yes.	Ok	Ok
<p>1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA</p>	DR	PDD	No ODA has been provided for this project.	Verify	Ok
<p>1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?</p>			N/A		
<p>1.9 Does the project meet the additional requirements detailed in:</p>			N/A		



REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects					
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment. <i>Project Documentation should be complete and should also reflect information presented in the course of the validation assessment so this information is available to other stakeholders. Alternatively, information provided will need to be discussed in detail in the validation report.</i>	DR	PDD	The current version is used.	Ok	Ok
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner? <i>All information must be verified, this includes all the default factors and parameters used in the calculations. For example for a Landfill Gas project, all factors used in the calculation of the Methane Correction Factor should be discussed and verified</i>	DR	PDD	Yes.	Ok	Ok

**Table 2 Baseline methodology (ies) (Ref: PDD Section B and E and Annex 3 and AM) Normal CDM projects only**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<i>The project will need to apply an approved baseline and monitoring methodology to each part of the project. As part of the validation, check if the selected approved methodology(ies) have been correctly applied. See Tables 9 and 11 for guidance on identifying the correct methodology for SSC and SSC AR</i>					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<p><i>projects. The determination of the additionality of the project is part of the methodology but is covered in table 4</i></p> <p><i>Using the WORD version of the PDD and a copy of the approved methodology(ies) undertake a section by section / line by line check of the PDD against the methodology. Answer all questions in this table to ensure that all parts of the methodology have been addressed. Highlight any deviations in the PDD and save using track changes mode. Compile the findings into UK.Findings.CDM. Submit the PDD as part of the validation report.</i></p> <p><i>The methodology must be applied exactly as defined. Every parameter must be checked including formulas and the application of the formulas to calculate emissions and emission reductions (check spreadsheets if applicable). Check data sources – references to documents must be publicly available and cited fully in the PDD – a general web address is not sufficient.</i></p> <p><i>More than one methodology can be applied if the project consists of several activities. If this is the case, answer the questions below for each activity and methodology.</i></p>					
2.1 Does the project meet all the applicability criteria listed in the methodology	PDD ACM 0001	DR	Yes. ACM 0001 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 the situation where the captured gas is flared (as mentioned in item (a) of the methodology.	Ok	Ok
2.2 Is the project boundary consistent with the approved methodology	PDD ACM 0001	DR	Yes. The project boundary is the site of the project activity where the gas is captured and destroyed. It is consistent with ACM 0001	Ok	Ok
2.3 Are the baseline emissions determined in accordance with the methodology described	PDD ACM 0001	DR	Yes. ACM 0001 defines that project proponents should provide an ex ante estimate of emissions reductions, by projecting the future GHG emissions of the landfill using verifiable methods.  The total methane emissions in the absence of the project activity are estimated based on the waste tonnage of the landfill using a United States Environmental Protection Agency (USEPA) first-order kinetic model for landfill gas.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.4 Are the project emissions determined in accordance with the methodology described	PDD ACM 0001	DR	<p>Yes.</p> <p>As described in the PDD, the landfill gas not captured by the landfill gas collection and flaring system cannot be monitored, as this emission is diffused over the landfill. The amount of landfill gas collected and destroyed by combustion can be monitored using a flow meter. Project emissions are thus comprised of the quantity of methane collected and not flared due to flaring inefficiency, and this amount is subtracted from the measured amount of collected methane (expected efficiency is upwards of 99.99%).</p> <p>In addition, ACM0001 defines that possible CO2 emissions should be accounted as project emissions. The electricity required for the operation of the project activity should be accounted and monitored. Project proponents should account for CO2 emissions by multiplying the quantity of electricity required with the CO2 emissions intensity of the electricity displaced (CEFelectricity,y).</p> <p>It was considered in Aurá project.</p>	Ok	Ok
2.5 Is the leakage of the project activity determined in accordance with the methodology described	PDD ACM 0001	DR	<p>No leakage effects need to be accounted under ACM 0001</p> <p>Emissions from electricity consumption is calculated and subtracted from the project emissions reductions. Clarify how the amount of energy required to operate the collection system is calculated.</p> <p>Information was sent and included in the PDD version 2.</p>	NIR 8	Ok
2.6 Are the emission reductions determined in accordance with the methodology described	PDD ACM 0001	DR	<p>Yes.</p> <p>ACM 0001 defines that the emission reduction achieved by the project activity during a given year “y” (ERy) is the difference between the amount of methane actually</p>	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			destroyed during the year (MDproject,y) and the amount of methane that would have been destroyed during the year in the absence of the project activity (MDreg,y) 3, times the approved Global Warming Potential value for methane (GWPC <sub>H4</sub> ). - Electricity and thermal energy emission reductions do not apply to the project Aurá.		

**Table 3 Additionality (Ref: PDD Section B3 and AM) Normal CDM projects only**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<i>The project is results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario. Additionality will need to be determined in accordance with the relevant section of the approved methodology. Information provided to support the claims of additionality will need to be verified</i>					
3.1 Does the PDD follow all the steps required in the methodology to determine the additionality	PDD ACM 0001	DR	ACM0001 methodology requires the use of the “Tool for the demonstration and assessment of additionality”. It was used in the PDD.	Ok	Ok
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	PDD ACM 0001	DR	Yes. The five steps were clearly described and demonstrated in the PDD (section B.3)	Ok	Ok
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	PDD ACM 0001	DR	Yes, from doc review.	Ok	Ok
3.4 Is it demonstrated/justified that the project activity itself is not a	PDD ACM	DR	Yes , from doc review.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
likely baseline scenario	0001				

**Table 4 Monitoring methodology (PDD Section D and AM) Normal CDM Projects only**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<p><i>The project will apply an approved monitoring methodology to each part of the project. As part of the validation, check if the selected approved methodology(ies) have been correctly applied. See Tables 9 and 11 for guidance on identifying the correct methodology for SSC and SSC AR projects.</i></p> <p><i>Using the WORD version of the PDD and a copy of the approved methodology(ies) undertake a section by section / line by line check of the PDD against the methodology. Answer all questions in this table to ensure that all parts of the methodology have been addressed. Highlight any deviations in the PDD and save using track changes mode. Compile the findings into UK.Findings.CDM. Submit the PDD as part of the validation report.</i></p> <p><i>The methodology must be applied exactly as defined. Every parameter must be checked including formulas and the application of the formulas to calculate emissions and emission reductions (check spreadsheets if applicable). Check data sources – references to documents must be publicly available and cited fully in the PDD – a general web address is not sufficient..</i></p> <p><i>More than one methodology can be applied if the project consists of several activities. If this is the case, answer the questions below for each activity and methodology.</i></p>					
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	PDD ACM 0001	DR	Yes. ACM 0001 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 where the captured gas is flared (the case of Aurá project).	Ok	Ok
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology	PDD ACM 0001	DR	No monitoring of baseline emissions is required; monitoring methodology is based on the direct measurement of the quantity of LFG captured, collected and destroyed by the LFG management system.	Ok	Ok
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring	PDD ACM	DR	Yes.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
methodology	0001				
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	PDD ACM 0001	DR	No leakage needs to be accounted.  CO2 emissions resulting from electricity consumption was accounted and deducted from the emission reductions.	Ok	Ok
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology	PDD ACM 0001	DR	Yes.	Ok	Ok

**Table 5 Monitoring plan (PDD Annex 4) Normal CDM Project activities only**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<i>In addition to the application of the monitoring methodology, the PDD should contain a monitoring plan in Annex 4. The content of the monitoring plan should be validated based on the questions below</i>					
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts  <i>It is checked that choices of indicators are reasonable and complete to monitor sustainable performance over time.</i>	PDD	DR	Yes, see annex 4 of the PDD.	Ok	Ok
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data	PDD	DR	Yes.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
concerning environmental, social and economic impacts?					
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	Yes.	Ok	Ok
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	Yes.	Ok	Ok
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	Yes.	Ok	Ok
5.2 Project Management Planning <i>It is checked that project implementation is properly prepared for and that critical arrangements are addressed.</i>	PDD	DR			
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	DR/I	Yes. To be confirmed by local assessor. Verified during site visit.	Verify	Ok
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and	PDD	DR	Yes, PDD section D.4	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
reporting clearly described?					
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	DR/I	Yes, PDD section D.4 and Annex 4. To be confirmed by local assessor.	Verify	Ok
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR/I	No. In case of flare downtime for maintenance or other reasons, the landfill gas would not be collected / combusted, and would be released to the atmosphere. This scenario would be equivalent to the baseline scenario, where the LFG produced at the landfill would undergo uncontrolled release to the atmosphere.	Verify	Ok
5.2.5 Are procedures identified for calibration of monitoring equipment?	PDD	DR/I	Yes. Specific calibration procedures are dependent on the actual equipment selected; however calibration of the equipment is required on a regular basis to ensure the quality and validity of the data.  It is not implemented yet, but there is a plan for preparing an operation manual and procedures, including calibration.	Verify	Ok
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR/I	It is not implemented yet, but there is a plan for preparing an operation manual and procedures, including maintenance of equipment.	Verify	Ok
5.2.7 Are procedures identified for monitoring, measurements and reporting?	PDD	DR	All data collected will be recorded for the permanent record. Both electronic and hard copies of the data will be maintained for auditing purposes, and for use in the calculation of CERs.	Verify	Ok



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.2.8 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR/I	Procedures are not implemented yet, but there is a plan for preparing an operation manual and procedures (see PDD section D.4 and Annex 4).	Verify	Ok
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR/I	Procedures are not implemented yet, but there is a plan for preparing an operation manual and procedures (see PDD section D.4 and Annex 4).	Verify	Ok
5.2.10 Are procedures identified for review of reported results/data?	PDD	DR	Yes. See item above	Ok	Ok
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	DR/I	Yes. To be confirmed by local assessor. See item above	Verify	Ok
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	DR/I	Yes.	Ok	Ok
5.2.13 Are procedures identified for corrective actions in order to provide for more	PDD	DR	Yes (section 3, annex 4)	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
accurate future monitoring and reporting?					

**Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation) Normal CDM Project Activities only**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<i>Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party</i>					
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	Yes.	Ok	Ok
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR	To be confirmed by local assessor. There are no requirements for an environmental impact assessment. There are expected to be no significant environmental impacts due to the project activity	Verify	Ok
6.3 Will the project create any adverse environmental effects?	PDD	DR	To be confirmed by local assessor. No adverse impact was identified.	Verify	Ok
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	No significant environmental impacts expected.	Verify	Ok
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	No significant environmental impacts detected.	Verify	Ok
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	Verify license(s). Verified the Previous license LP n° 0002/2006, 3 March 2006 issued by SEMMA (Municipal Environmental Agency).	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Verified the Installation license LI n°0001/2006, 15 March 2006 issued by SEMMA (Municipal Environmental Agency).		

**Table 7 Comments by local stakeholders (Ref PDD Section G) All CDM Project Activities**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<i>Project developers need to invite comments by local stakeholders and a summary of the comments received should be provided. The project developer will need to show that due account was taken of any comments that have been received</i>					
7.1 Have relevant stakeholders been consulted?	PDD	DR	No.  The stakeholder consultation process for this project took place on February 1, 2006. A description of the meeting, a list of attendees and a summary of issues raised is provided in an updated version of the PDD.  CAR 3 was closed out.	CAR 3	Ok
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	No stakeholder consultation.  Consultation was carried out in January, 2006. Letters were sent in local language with a project summary.	Refer to CAR 3	Ok
7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	PDD	DR	No, the project need to send a letter to stakeholders according "Resolution #1 (2003/09/11) Brazil".  CRA has sent letters to all stakeholders specified in "Resolution #1 (2003/09/11) Brasil" to participate in the public meeting and request stakeholders comments. The public meeting for this project has been completed.  Letter sent in 18 <sup>th</sup> January 2006 (as documented evidences verified).  CAR 4 was closed out.	CAR 4	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	<p>No.</p> <p>After the consultation process, the comments received are reported in the PDD. The comments received concerning the project activity were positive and supportive.</p> <p>A specific question was raised about the contribution of the project to technology transfer. A further participant requested that more technical information regarding the project activity be disseminated</p> <p>CAR 3 was closed out.</p>	Refer to CAR 3	Ok
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	<p>No, in process.</p> <p>After the consultation process, the comment received relating to further information regarding the project technology will be addressed and the following options will be contemplated:</p> <ul style="list-style-type: none"> <li>• A pamphlet describing the project technology will be produced and distributed to interested stakeholders;</li> <li>• An information package containing drawings and specifications detailing the project technology will be produced and kept at the Sites and be available for public information; and</li> <li>• After the commissioning of the system, a program will be developed to provide tours of the flaring system and to provide further explanation of the technology.</li> </ul> <p>CAR 3 was closed out.</p>	Refer to CAR 3	Ok

**Table 8 Other requirements All CDM project activities**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<b>8.1 Project Design Document</b> <i>The project needs to correctly complete a Project Design Document, using the current version and exactly following the guidance – note that regular, SSC, AR and AR SSC each use different PDD templates, but to date, the ARSSC PDD is not available</i> <i>Obtain a copy from the CDM website, and a copy of the guidance to accompany the PPD. See Tables 9 and 11 for guidance on how to find the correct version of the PDD guidance for SSC and SSC AR projects. Perform a section by section / line by line check on the contents of the PDD.</i> <i>In a WORD version of the PDD, use track changes mode to note any deviations (however minor) from the PDD. Save this document with tracked changes showing and append it to the Validation report as evidence of the auditing process. Compile a list of the differences in UK.Findings.CDM. Split these into Editorial and Substantive comments. Editorial issues can be listed on one CAR; substantive findings can be listed as individual findings</i>					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	Yes, no changes have been observed.	Ok	Ok
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	PDD	DR	Yes.	Ok	Ok
<b>8.2 Technology to be employed</b> <i>COP 10 Re-emphasized that clean development mechanism project activities should lead to the transfer of environmentally safe and sound technologies and know-how. The validator should ensure that environmentally safe and sound technology and know-how is used.</i>					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	Yes. There are other CDM projects using similar technology.	Ok	Ok
8.2.2 Does the project use state of the art technology or would the	PDD	DR	To combust the LFG, an enclosed flare with full process controls and instrumentation will also be constructed and	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
technology result in a significantly better performance than any commonly used technologies in the host country?			operated. Verify the documentation and plans, because the project will be implemented in 2006. Verified the LFG construction schedule (December 2005 – November 2006).		
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	It is expected not.	Ok	Ok
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR/I	All continuously measured parameters (LFG flow, CH <sub>4</sub> concentration, flare temperature, and flare operating hours) will be recorded electronically.  As described on the PDD, during the operational phase, there will be new jobs created locally for duties related to operations and maintenance, landscaping, plumbing, monitoring and security personnel. These people will be fully trained by CRA on their duties and tasks.  CRA will conduct a training and quality control program to ensure that good management practices are ensured and implemented by all project operating personnel in terms of record-keeping, equipment calibration, overall maintenance, and procedures for corrective action. An operations manual will be developed for the operating personnel.	Ok	Ok
<b>8.3 Duration of the Project/ Crediting Period</b> <i>It is assessed whether the temporal boundaries of the project are clearly defined.</i>					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Section C.1.1 – starting date 1 November 2006. Section C.1.2 – lifetime 10 years 0 months.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.3.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Yes, section C.2.2.2 – fixed crediting period: 10 years.	Ok	Ok
8.3.3 Does the project's operational lifetime exceed the crediting period	PDD	DR	No.	Ok	Ok

**Table 9 Additional requirements for SSC project activities only – N/A**

**Table 10 Additional requirements for AR projects – N/A**

**Table 11 Additional requirements for SSC AR projects – N/A**

**Table 12 Additional information to be verified by local assessors / site visit**

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<p><i>Key assumptions and data presented in the PDD must be verified, usually by local assessors or during a site visit. Where the baseline is constructed from historic emissions data, a site visit by an Assessor or Lead Assessor will be necessary; where the baseline is constructed from an economically attractive course of action, a local assessor may be sufficient. Where the baseline uses 48c (measure of best practice) any combination of Assessor / Lead Assessor / Local Assessor and Expert may be required.</i></p> <p><i>During the line by line review of the PDD, identify all statement / facts / assumptions / variables etc that need to be verified. List them below and then ensure that the team verifies the data and provides references / supporting documentation where necessary.</i></p> <p><i>The list may be quite long therefore avoid repetition.</i></p>					
Confirmation of the existence of an	Visit	DR/I	It is not available during site visit	NIR 5	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
agreement between CRA and Prefeitura Municipal de Belém.			City Hall of Belém, Agreement between the City of Belém and Conestoga Rovers & Associados Engenharia S/A, 04 October 2005.  From this document CRA can design, build, commission and operate a plant for the capture and flaring of landfill gas at the Aurá Landfill.		
Verify technical responsible for the project.	Visit	DR	CRA is the technical responsible as described in the PDD and verified during site visit.	Ok	Ok
Verify list of equipment and infrastructure documentation.	Visit	DR Site visit/I	It was not available during site visit  The project developer sent a document with a list of key equipments.	NIR 6	Ok
Verify plant of the landfill and project.	Visit	DR Site visit	Verified the landfill during site visit; in addition, an aerial photo of the site were provided.	Ok	Ok
Verify condition of the landfill like described in the PDD.	Visit	Site visit	Verified during site visit that the landfill is open and receiving waste, some cells are under construction.	Ok	Ok
Verify implementation schedule of the project.	Visit	DR	It was not available during site visit  The project developer sent the LFG construction schedule.	NIR 7	Ok
Verify organization chart of the project.	Visit	DR	The organizational structure and functions were explained by CRA representatives interviewed during site visit.	Ok	Ok
Confirm that there are no current regulation requiring removal of methane for safety considerations	Visit	DR	Verified that there no legal requirement and the environmental agency does not require any burning of methane for safety purposes.	Ok	Ok



References consulted during Ground Truthing and brief summary of content / significance [please try to obtain a hard copy where ever possible]:

Ref no.	Title (full bibliographic reference if possible)	Brief note on content / significance	Hard copy (Y/n)
1	Equipment list provided by email from CRA.	List of key equipments.	Y
2	LFG Construction schedule Aurá Landfill site Belém, Brasil (Dec 2005 – Nov 2006).		Y
3	City Government of Belém Agreement between The City of Belém and Conestoga-Rovers & Associados Engenharia S/A, 04 October 2005.	The Agreement object of which is to design, build, commission and operate a plant for the capture and flaring of landfill gas at the Aurá Landfill.	N
4	Previous license number 0002/2006, 3 March 2006 issued by SEMMA (Municipality environmental agency)	Previous license for the landfill gas project.	Y
5	Installation license number 0001/2006, 15 March 2006 issued by SEMMA (Municipality environmental agency)	Installation license for the landfill gas project.	Y
6	Aerial photo	Aerial photo of the Aurá landfill.	Y

Individuals interviewed during Validation and Ground Truthing [name, position and contact details, plus a brief summary of points discussed]

Date met	Name	Position	Contact details	Brief note on subject of interview
14 December 2005	Guy L. Treadwell	Project Manager	CRA – Conestoga-Rovers & Associates	Technical information about the project, operational structure and PDD issues.

			<a href="mailto:gtreadwell@croworld.com">gtreadwell@croworld.com</a>	
14 December 2005	Carlson Cabral	Project Coordinator	CRA - Conestoga-Rovers & Associates <a href="mailto:ccabral@croworld.com">ccabral@croworld.com</a>	Environmental license, contracts and stakeholder meeting.
14 December 2005	Jeancarlo Antunes Azevedo	Project Technician	CRA - Conestoga-Rovers & Associates	Information about the project.

- o0o -



## Annex 6 - Local assessment checklist

### Aurá Landfill Gas Project (CDM.VAL 0355)

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document. It serves as a “reality check” on the project. It is to be completed by SGS Brazil.

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Confirmation of the existence of an agreement between CRA and Municipality of Belém.	City Hall of Belém, Agreement between the City of Belém and Conestoga Rovers & Associados Engenharia S/A, 04 October 2005.  From this document CRA is authorized to design, build commission and operate a plant for the capture and flaring of landfill gas at the Aurá Landfill.	Visit/DR/I	No
Verify technical responsible for the project.	CRA is the technical responsible as described in the PDD and verified during site visit.	Visit/DR	No
Verify list of equipment and infrastructure documentation.	The project developer sent a document with a list of key equipments.	Visit/DR/I	No
Verify plant of the landfill and project.	Verified the landfill during site visit and an aerial photo of the landfill were provided.	Visit/DR	No
Verify condition of the landfill like described in the PDD.	Verified during site visit that the landfill is open and receiving waste, some cells are under construction.	Visit	No
Verify implementation schedule of the project.	The project developer sent the LFG construction schedule.	Visit/DR	No
Verify organization chart of the project.	The organizational structure and functions were explained by CRA representatives interviewed during	Visit/DR	No



Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
	site visit.		
Confirm that there are no current regulation requiring removal of methane for safety considerations	Verified that there no legal requirement and the environmental agency don't require any removal of methane for safety.	Visit/DR	No