VALIDATION REPORT

Uaná Energias Renováveis S/A.

CDM Project Paragominas

SGS Climate Change Programme
SGS United Kingdom Ltd
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Date of Issue:	**Project Number:**
07/08/2009	CDM.VAL2179
Project Title:	
CDM Project Paragominas	
Organisation:	**Client:**
SGS United Kingdom Limited	Uaná Energias Renováveis S/A.
Publication of PDD for Stakeholders Consultation	
Commenting Period:	23/08/2008 – 21/09/2008
First PDD Version and Date:	Version 01, 01/08/2008
Final PDD Version and Date:	Version 03, 31/07/2009

Summary:

Uaná Energias Renováveis S/A has commissioned SGS to perform the validation of the project: CDM Project Paragominas.

Methodology used: AMS ID and AMS IIIE.

Version and Date: version 13 (EB36) and version 15.1 (EB36) respectively.

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The report is based on the findings of document reviews, the stakeholder consultation process and responses from the project participants to the findings raised in this report.

The report and the annexed validation describes a total of 5 findings which include:

- 2 Corrective Action Requests; and
- 3 New Information Requests.

All findings have been closed out satisfactorily and the project will be recommended to the CDM Executive Board with a request for registration.

At time of the validation, no Letter of Approval from the host country had been provided. The Letter of Approval will be signed when the DNA of Brazil receives and analyses the validation report.

A new version 03 of the PDD was issued on 31/07/2009 to correct typos requested by the Brazilian DNA and to include the information about the previous license issued. Consequently the validation report was revised to reflect the new version of the PDD. The changes in version 3 of the PDD do not affect the validation report.

Subject:		
CDM Validation		
Validation Team:		
Fabian Gonçalves – Lead Assessor		☒ No Distribution (without permission from the Client or responsible organisational unit)
Technical Review:	**Trainee Technical Reviewer:**	
Date: 02/02/2009 to 20/03/2009 Name: Irma Lubrecht	Name: N/A	☐ Limited Distribution
Authorised Signatory:		
Name: Date:		☐ Unrestricted Distribution

Revision Number:	**Date:**	**Number of Pages:**
0	28-01-2009	53
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1.1	07-08-2009	53

Abbreviations

AMS	Approved Small Scale Methodology
ANEEL	Agencia Nacional de Energia Elétrica (Brazilian Agency of Power Electricity).
BNDES	Banco Nacional de Desenvolvimento Econômico e Social
CAR	Corrective Action Request
CCEE	Câmara de Comercio de Energia Elétrica
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
COP	Conference of Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
ER	Emissions Reduction
GHG	Greenhouse Gas
GWP	Global Warming Potencial
IETA	International Emissions Trading Association
IRR	Internal Rate of Return
MCF	Methane Correction Factor
MCT	Ministério da Ciência e Tecnologia
MOP	Meeting of Parties
MP	Monitoring Plan
NIR	New Information Request
ONS	Operador Nacional do Sistema
PDD	Project Design Document
PPA	Power Purchase Agreement
PP	Project Participants
SCDE	Sistema de Coleta de Dados de Energia Elétrica
SCL	Sistema de Contabilização e Liquidação
SEMA	Secretaria de Estado de Meio Ambiente
SGS	Société Générale de Surveillance
SWDS	Solid Waste Disposal Site
TJLP	Taxa de Juros de Longo Prazo
UNFCCC	United Nation Framework Convention on Climate Change
WACC	Weight Average Cost of Capital

Table of Content

Annexes:

1. Validation Opinion

SGS United Kingdom Ltd has been contracted by Uaná Energias Renováveis S/A to perform a validation of the project: CDM Project Paragominas in Brazil.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM) and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

SGS reviewed the project design documentation, using a risk based approach and conducted follow-up interviews.

By the supply of clean electricity to the Brazilian grid through the implementation and operation of wood waste Paragominas thermo electrical plant the project activity will result in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria. The project correctly applies methodologies AMS ID and AMS IIIE versions 13 and 15.1. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be 262,568 tCO2e over a 7 years crediting period, averaging 37,509 tCO2e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

The project will hence be recommended by SGS for registration with the UNFCCC.

Signed on Behalf of the Validation Body by Authorized Signatory

Signature:

Name:

Date:

2. Introduction

2.1 Objective

Uaná Energias Renováveis S/A has commissioned SGS to perform the validation of the project: CDM Project Paragominas with regard to the relevant requirements for CDM project activities. 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 relevant UNFCCC and host country 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 of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

2.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

2.3 GHG Project Description

The project consists in supplying clean electricity to the Brazilian grid through the implementation and operation of wood waste thermo electrical plant, located in the city of Paragominas, state of Pará, with an installed capacity of 8.0 MW and the avoidance of methane production through the use of the wastes from sawmills in the region which would have been disposed off. Paragominas project will consume about 86,400 tons of wood residues per year, which will be provided by sawmills and furniture production companies in the of the region.

The project Paragominas will provide a new alternative in relation to the destiny of residues from sawmills in the region, which will attenuate and may even solve part of the environmental and social problems resulting from the lack of management of the residues. Through the project implementation, the production of methane from the decomposition of wood residues will be avoided and CO2 emissions will be prevented, once the project will avoid the fossil fuel generation of electricity.

CDM Paragominas Project will use one of the most renowned technologies of biomass energetic, which is direct combustion. Combustion is the transformation of chemical energy from fuels in heat through the reaction of its composing elements with the oxygen provided. In the case of CDM Paragominas Project, a boiler model TH40/42 will be used, with a capacity of production of 40 t/h work pressure of 42 kgf/cm² and steam temperature of 400ºC.

2.4 The Names and Roles of the Validation Team Members

Name	Role	Affiliate
Fabian Gonçalves	Lead assessor	SGS Brazil

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

A site visit is usually required to verify assumptions in the baseline.

A site visit was performed and the results are summarized in a separate checklist as Annex 1.

The lead assessor was involved to confirm the statements in the PDD through review of documents direct contacts with project participants.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	Ref ID	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements are linked to checklist questions the project should meet.	Lists any references and sources used in the validation process. Full details are provided in the table at the bottom of the checklist.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). New Information Request (NIR) is used when the validation team has identified a need for further clarification.

The completed validation protocol for this project is attached as Annex A.1 to this report

3.3 Findings

As an outcome of the validation process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **New Information Request (NIR)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR).** A CAR

is issued, where:

I. mistakes have been made with a direct influence on project results;
II. validation protocol requirements have not been met; or
III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 0). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

3.4 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

4. Validation Findings

4.1 Participation Requirements

Brazil is listed as the non-Annex-I Party, has ratified the protocol on 23rd August 2002 and is allowed to participate http://maindb.unfccc.int/public/country.pl?country=BR.

There is no Annex I Party involved at this time in the project activity.

No letter of approval was issued by Brazil (report should be sent to DNA).

4.2 Project Design

The title "CDM Project Paragominas" identifies the unique CDM project activity. The information presented in the PDD is available and can be confirmed through documents and references provided during validation assessment. Ref. 8 and 10 are related to the board meeting and constitution of Uaná Energias Renováveis SA. Ref.9 is the map of the project location. Ref.11 is the document sent to environmental agency to obtain the previous license. All information provided is in compliance with actual situation presented in the PDD.

Brazil is the Party involved in the project.

The project participants are the following entities:

- Uaná Energias Renováveis S/A.
- Enerbio Consultoria Ltda.

The project is located in the municipality of Paragominas in the northeast of Pará, 310 km from the capital of the state, Belém.

NIR #1: PDD version 1 presents several geographical coordinates for the project location. The correct coordinates that identify the unique location of the project activity should be used.

PDD version 2 presents the correct geographical coordinates for the project location, South 02º 59'03.6" and West 47º 22'18.1". NIR #1 was closed out.

The project will use biomass as fuel that would be left to decay in open skies and generates energy from renewable sources. It is expected to use the best technology available. The project is not implemented yet and initial training and maintenance efforts will be necessary before operation.

No public funding is being used for the project activity. There is no Annex I Party participating in the project activity.

4.3 Eligibility as a Small Scale Project

The project is not a fragmentation of a large scale project activity. Verified that there is no other project registered or in validation by the same project participant, in the same region, category or technology. The project activity is not a bundle of several small scale activities.

Project activity uses approved simplified methodologies AMS ID, version 13 and AMS IIIE, version 15.1:

- AMS ID: the project qualifies as small scale because the installed capacity of the thermal plant is 8MW, below the limit of 15MW for type I projects. Verified the document sent to SEMA to request the previous license of the project. This document presents the installed capacity of the plant, 8MW. Equipments that will installed: turbine with 80000kW and generator with 10000kVA (equivalent to 8MW).

NIR #2: According to the "validation document" verified during site visit the thermal capacity of the project is correct but the calculation should be provided as evidence. The document provided during validation assessment presents the thermal capacity of the project and PDD version 2 presents how it was calculated. NIR #2 was closed out.

- AMS IIIE: the project qualifies as small scale because the thermal capacity is below the limit of 45MW and will not exceed 60ktCO2e of emission reductions per year. Installed capacity of 8MW *

fuel consumption of .5kg/kWh = 12MWth. The type and category of the project is correctly selected, ID and IIIE in accordance with information provided and PDD version 2. The most recent versions of the methodologies are being used.

4.4 Baseline Selection and Additionality

Project boundary encompasses the physical and geographical site of the renewable generation source, the location of the waste wood plant of Paragominas Project.

For category III.E the project boundary is the physical and geographical site where the solid waste would have been disposed or methane emission occurs in absence of the project. Also the distances between then, where the transportation of wastes and combustion residues occurs.

Resolution nº 8 of the Brazilian DNA defined that the National Interconnected System must be considered as a unique system and that this configuration is valid for calculating the emission factor of CO2 used to calculate the emission reduction of greenhouse gases in CDM Projects connected to the national grid. The baseline scenario is that in the absence of the project activity, residues of wood would be left to decay in the project boundary and methane would be emitted to the atmosphere. Through the project implementation the emission of methane will be avoided and organic waste will be used to generate electricity.

The determination of the baseline is transparent using available data. The project component related to the generation of renewable energy connected to the grid is the kWh produced by the renewable generating unit multiplied by an emission coefficient.

For the component related to the avoidance of methane, the baseline emissions represent the amount of methane which, in the absence of the project activity would be generated through disposal at a solid waste disposal site and calculation is based on a first order decay model.

The PDD has been published for global stakeholder consultation before the project start date. This is an evidence that CDM was seriously considered. Besides that the CDM was considered before validation. Verified the constitution board meeting of the company, 31/10/2007, Uaná Energias Renováveis S/A. On 27/05/2008 it was presented a new board meeting where the CDM is considered in order to viable the project implementation.

Annex A of the Appendix B of the Simplified Modalities and Procedures to Small Scale CDM Project Activities was used to demonstrate additionality. The following alternative scenarios were presented:

The continuity of the current situation, with electricity being generated by the current grid and residues being disposed off in open dumps. The construction of new diesel power plants in the state of Pará. The implementation of project without incentives from CDM.

To support the barrier analysis it is important to explain the Brazilian electrical sector, and the energetic matrix in the state of Pará, where the project is located (see explanation in the prevailing practice barrier).

NIR #3: The financial spreadsheet with evidence of the assumption used should be provided. Also the spreadsheet with WACC calculation with respective assumptions and evidences and sensitivity analysis. Pending assumption: operational costs, maintenance costs, investment, t/h, internal electricity consumption, transmission losses, etc. The financial spreadsheet was provided with equity IRR, sensitivity analysis and benchmark used. Also the evidence for the following assumptions was provided: operational cost, maintenance cost, investment, energy tariff and other parameters used in the financial analysis. NIR #3 was closed out.

Barrier Analysis:

- Financial Barrier.

The equity Internal Rate of Return (IRR) compared with Brazilian Governmental Bond2 - BRL 2008 (benchmark) was presented to demonstrate that the project activity is not financial attractive or feasible.

The benchmark used is the 21 years Brazilian Governmental Bond 2 BRL 2008 plus a conservative risk premium for the project documented by official publicly available data. This governmental bond is 10.68% (http://www.tesouro.fazenda.gov.br/english/public_debt/downloads/informes/Emissao_Global_BRL2028_eng.pdf). The risk premium according to BNDES bank the direct spread for investments related to renewable

energy is 0.9% per year (source: http://www.bndes.gov.br/infraestrutura/default.asp). Also there is the credit risk but it was not considered in the benchmark.

Benchmark considered in the financial analysis 10.68% + 0.9% = 11.58%. Verified that the estimated revenue is based on the estimated energy price multiplied by the energy generation (based on the "First Auction for Alternative Sources of Energy" (Ref.17). The conservative value of R$150/MWh (Ref.17) was used in the analysis.

Verified that the investment is based on the technical proposal prepared by KROMA company (NºK280 08R02, 05/11/2008). The loan costs consider that the direct spread for thermal generation TJLP + 0.9% per year (source: http://www.bndes.gov.br/infraestrutura/default.asp). The TJLP is 6.25% per year +0.9% = 7.15% plus the estimate minimum spread of commercial banks of 2.1%/year.

The estimated operational and maintenance costs (Ref.17 and 20) were provided and represent the operation, consumables, fuel, fuel transportation, maintenance, insurance, ANEEL tax and others.

The financial spreadsheet was provided with IRR, sensitivity analysis and benchmark used. Also the evidence for the following assumptions was provided: operational cost, maintenance cost, investment, energy tariff and other parameters used in the financial analysis.

The investment analysis presented in the PDD and provided to DOE is the official document used by Uaná (Paragominas project) in the decision to implement the project activity. The values used in the investment analysis are considered valid and applicable at the time of the investment decision taken by the project proponent. The results of the analysis was recalculated by a financial expert and confirmed that is correct. The assumptions used and the spreadsheet with formula were checked by the assessment team. Considering the data presented and references and according to the cash flow the equity IRR is 2.83% which is lower than the benchmark of 11.58%. The project is not financial attractive.

Verified the sensitivity analysis where the main variables affecting the IRR were analyzed. The analysis considering the variation of +5% to +10% in the price of the electricity (the only revenue of the project activity), and -5% to -10% in the total investment and operational costs. The maximum IRR after sensitivity analysis is 10.83%.

The result of the sensitivity analysis was that even varying -/+10% the IRR is still lower than the benchmark.

- Prevailing Practice.

Within the Brazilian energetic matrix hydro plants are responsible for 74.07% of the installed capacity and thermo plants are responsible for 21.52% of the installed capacity. Fuel used in thermo plants in Brazil consists of 75.79% fossil fuel and 20.09% biomass. Considering only the plants that use biomass, 25 projects in the country use wood residues as fuel to generate energy and the installed capacity of these projects represents 4.93% of the thermal capacity in the country. According to the Decennial Plan for Electric Energy Expansion for the period of 2006-2015 there is no expectation for the installation of biomass power plants in the northern region where the project is located. Analyzing only the state of Pará where the project is located, there are 54 thermoelectric power plants in operation and only two make use of wood residues as fuel and these are not located in the municipality of Paragominas. Source of data: http://www.aneel.gov.br/area.cfm?idArea=15&idPerfil=2.

Through the information provided in the PDD and references consulted (see above paragraph) the conclusion is that the thermo electrical energy generation in the state of Pará using biomass is composed of approximately 1% of the capacity and can not be considered a common practice and does not receive any kind of incentive from the government.

The final opinion of the barrier analysis is that the project activity attends the methodologies and small scale requirements and can be considered additional.

According to the barriers presented and considering the Brazilian electrical sector. The baseline scenario is the continuation of current practice: energy generation by the existent grid with fossil fuel plants and biomass being left to decay at sawmills.

4.5 Application of Baseline Methodology and Calculation of Emission Factors

The baseline emissions of the component related to the energy generation is the kWh produced by the project multiplied by the grid emission factor. The baseline emissions of the component related to the methane avoidance is the amount of methane which, in the absence of the project would be generated through disposal at a solid waste disposal site. The project emissions, related to category III.E, are calculated: $PE_y = PE_{y,comb} + PE_{y,transp} + PE_{y,power}$

Just emissions related to transportation will be considered, the other components are zero. Leakage is not applicable.

All ex-ante parameters are considered in PDD version 2. The following parameters were considered:

- Model correction factor to account for model uncertainties;
- Oxidation factor;
- Fraction of methane in the SWDS;
- Fraction of degradable organic carbon that can decompose;
- Methane correction factor;
- Fraction of degradable organic carbon (by weight) of the wood residue;
- Decay rate for wood residue;
- CO2 emission factor from fuel use due to transportation.

Ex-ante data are derived from the Tool to determine methane emissions avoided from disposal of waste a solid waste disposal site.

The approved methodologies have being correctly applied:

ERtotal = ERID + ERIIIE

ERID = BEy = EGy* EFgrid,CM,y

ERIIIE = BEy – PEy

CAR #4: The revised CER spreadsheet with formulas, considering the correct generation and the most recent emission factor should be provided. Copy of the CER spreadsheet with formulas was provided, considering the applicable emission factor, correct generation according to the documents provided during validation assessment. CAR #4 was closed out.

The project reduces emissions as a result of the displacement of generation from fossil fuel thermal plants that would have otherwise been delivered to the interconnected grid and through the avoidance of methane of the wood residue that would be left to decay. The projection is in line with indicated crediting period.

4.6 Application of Monitoring Methodology and Monitoring Plan

The parameters presented in PDD version 2 are consistent with AMS ID version 13 and AMS IIIE version 15.1. The monitored parameters are according to the required methodology:

- Electricity supplied by the project activity to the grid;
- Ex-post emission factor will be calculated by MCT with ONS data;
- Fraction of methane captured at the SWDS;
- Global Warming Potential (GWP) of methane;
- Total Amount of organic waste prevented from disposal;
- Quantity of waste combusted;
- Average truck capacity for waste transportation;
- Average incremental distance for waste transportation;
- Quantity of combustion and gasification residues;
- Average truck capacity for waste transportation;
- Average distance for residues transportation.

The project will carry out an annual census through the data made available by official entities of the region or through data elaborated through studies ordered by it, about the percentage of residues used in Paragominas Project. The monitored data will be manual or automatically checked by third party and project participant.

CAR #5: The monitored parameters do not present quality assurance and quality control. There are parameters that are missing in PDD version 1. Revised PDD version 2 presents the quality assurance and quality control for the monitored parameters. The QA/QC is considered reasonable to each motoring parameter of the project. CAR #5 was closed out.

Electricity will be continiously measured and monitored by the supervisory system of the plant. Ex-post emission factor will be calculated by MCT with ONS data.

The project will use a mechanical scale and internal registration to monitor the quantity of biomass that will be used. The average truck capacity will be monitored by project participants.

The average incremental distance for waste transportation will be monitored by project participants.

The authority and responsibilities are clearly described in PDD section B.7.2 according to the actual project planning (it is important to explain that the project activity is not implemented yet).

Uaná Energias Renováveis is the operator and owner of the project. Enerbio Consultoria is responsible for monitoring data and for project emission reductions calculation, responsible for the development of periodic monitoring reports. Operation and Maintenance staff is responsible for activities related to the plant's operation and maintenance. Electric Power Commercialization Chamber (CCEE) is responsible for implementation, operation and maintenance of SCDE, to enable the collection of electric energy's data for the use of Accounting and Settlement System (SCL). Calibration Outsourced Agent will be hired according the legal requirements of Brazil to make calibration of the measurement equipments.

According to section B.7.2 of the PDD there are two data collection channels in each measurement point. One channel is used by the company for direct collection and the other one is used by CCEE for data validation. The operation and maintenance staff is responsible for obtaining data directly from the meters. The operation and maintenance staff is also responsible for generating, at each month in the first working day, the spreadsheets with the generation data. Calibration will follow what was described on the document elaborated by ONS – Sub module 12.3 - Maintenance of the measurement system for billing. Mechanical scale will be calibrated periodically, according to national quality standards.

4.7 Choice of the Crediting Period

The prevision during validation assessment was 02/01/2009 (contracts and construction start) and could be later depending on the issuance of installation license and ANEEL authorization.

Operational lifetime is 20 years.

Assumed renewable crediting period. First crediting period of 7 years.

4.8 Environmental Impacts

The project is in the initial phase. Verified the previous license protocol number 397217 sent to the environmental agency SEMA on 19/09/2008, published in the "Diário official" nº31258 on 19/09/2008. The Previous License LP 006/2009 was issued on 12/03/2009 by SEMMA. The necessity of an environmental impact assessment will be made by the environmental agency SEMA when analyzing the documentation sent on 19/09/2008 to obtain the previous license.

4.9 Local Stakeholder Comments

Copy of the letters sent to local stakeholders and delivery receipts were provided. Letters were sent in local language. The PDD in Portuguese was made available to local stakeholders. The project follows the Brazilian DNA Resolution Nº 7.

The following stakeholders were consulted:

- City Hall of Paragominas;
- Municipal Assembly of Paragominas;
- Paragominas Secretary of Environment;
- UMAMP (Municipal Union of Residents Association of Paragominas);
- State Secretary of Environment;
- Federal Attorney of Public Interest;
- State of Pará Attorney of Public Interest;

- Brazilian Fórum of NGO's and Social Movements for Environment and Development.

No comment received during local stakeholder consultation.

5. Comments by Parties, Stakeholders and NGOs

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 invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

5.1 Description of How and When the PDD was Made Publicly Available

The Project Design Document for this project was made available on the SGS website http://cdm.unfccc.int/Projects/Validation/DB/JBBB2JCVM8ICSS65TT6Z5VWJC4UQLW/view.html and was open for comments from 23/08/2008 until 21/09/2008. Comments were invited through the UNFCCC CDM homepage.

5.2 Compilation of all Comments Received

Comment Number	Date Received	Submitter	Comment
0			

5.3 Explanation of How Comments Have Been Taken into Account

No comments received.

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
29/09/2008	Eduardo Baltar	Consultant/Enerbio	PDD, additionality, local stakeholder, calculations, monitoring plan.
29/09/2008	Jose Romero	Director/Uaná Energias	Project implementation, additionality, monitoring plan, environmental issues, licenses, authorization.

7. Document References

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

/1/ PDD: CDM Project Paragominas.

Version 1, 01/08/2008.

Version 2, 18/11/2008.

Version 3, 31/07/2009.

/2/ Methodology AMS ID version 13.

/3/ Methodology AMS IIIE version 15.1.

/4/ Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site, version 4.

/5/ Tool to calculate an emission factor for an electricity system, version 1.1.

/6/ Pending LoA

/7/ MoC

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

/8/ Institution board meeting of the company, 31/10/2007, Uaná Energias Renováveis S/A.

/9/ Map with location of the project activity, November 2007.

/10/ Board meeting, 27/05/2008 related to CDM consideration.

/11/ Document sent to SEMA to request the previous license of the project where Uaná Energias Renováveis S/A request the installation of a thermal power plant in the city of Paragominas/PA, 02/09/2008.

/12/ Technical Report “Levantamento Quantitativo dos Resíduos de Madeira” made by the City Hall of Paragominas – Environmental Secretary on 19/09/2007.

/13/ Local stakeholder consultation (letters and delivery receipts).

/14/ Previous license protocol number 397217 sent to the environmental agency SEMA on 19/09/2008 and LP 006/2009.

/15/ Financial analysis clarification/ debt report of National Treasury.

/16/ Baseline data clarification.

/17/ Financial clarification.

/18/ CER spreadsheet.

/19/ Financial spreadsheet.

/20/ Technical proposal Nº K280 08R02, 05/11/2008.

/21/ Technical clarification from EG Rendeiro.

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A.1 Annex 1: Local Assessment

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document for CDM Project Paragominas.

It serves as a "**reality check**" on the project that is completed by a local assessor from SGS Brazil.

Issue	**Findings**	**Source/Means of Verification**	**Further Action / Clarification / Information Required?**
Document to confirm that Uaná Energias Renováveis S/A is the owner of Paragominas project.	Verified the document sent to SEMA to request the previous license of the project where Uaná Energias Renováveis S/A request the installation of a thermal power plant in the city of Paragominas/PA. Verified the constitution board meeting of the company, 31/10/2007, Uaná Energias Renováveis S/A. On 27/05/2008 it was presented a new board meeting where the CDM is considered in order to viable the project implementation. The CDM consideration is not an issue in this project because the validation started before starting date of the project activity. Besides that the CDM was considered before validation.	Site visit/Ref. 8, 10, 11	No
Document to confirm the 8MW installed capacity.	Verified the document sent to SEMA to request the previous license of the project where Uaná Energias Renováveis S/A request the installation of a thermal power plant in the city of Paragominas/PA. This document presents the installed capacity of the plant, 8MW. Equipments that will installed: turbine with 80000kW and generator with 10000kVA (equivalent to 8MW).	Site visit/Ref. 11	No

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
How was defined that Paragominas project will consume about 86,400t of wood residue per year.	The document sent to environmental agency to obtain the license describes the consumption of 86,400t wood residue per year. This value is based in the technical characteristics of the equipments and net calorific value of the biomass. The thermal power plant is not subjected to seasonal conditions. It is expected a regular generation using almost the maximum installed capacity, considering the technical and maintenance stops.	Site visit/Ref. 11, 12	No
Copy of the technical research carried on September 2007 to quantify the monthly volume of wood residue in the region.	Verified the Technical Report "Levantamento Quantitativo dos Resíduos de Madeira" made by the City Hall of Paragominas – Environmental Secretary on 19/09/2007. This technical report defines the companies in the region that produces biomass (wood residue) and the annual availability. The data presented in the PDD and documents provided are in accordance with the official technical report.	Site visit/Ref. 12	No
Copy of all letters sent for local stakeholder and ARs.	Copy of the letters sent to local stakeholders and delivery receipts were provided. Letters were sent in local language. The PDD in Portuguese was made available to local stakeholders. The project follows the Brazilian DNA Resolution Nº 7.	Site visit/Ref. 13	No
Check evidence for the geographical coordinates.	Only one geographic coordinates should be used. NIR 1 was raised.	Site visit/Ref. 1	The PDD version 2 presents the correct geographic coordinates for the project location, South 02º 59'03.6" and West 47º 22'18.1". NIR 1 was closed out.

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
Check evidence for the following data in order to calculate the thermal capacity: NCV = 11,635kJ/kg Fuel = 1.5kg/kWh Thermal production = 17,452kJ/kWh Thermal capacity = 12MWth	According to the "validation document" verified during site visit the thermal capacity of the project is correct but the calculation should be provided as evidence. NIR 2 was raised. Thermal capacity: Installed capacity of 8MW * fuel consumption of .5kg/kWh = 12MWth	Site visit/Ref. 1, 11	The document provided during validation assessment presents the thermal capacity of the project and the PDD version 2 presents how it was calculated. NIR 2 was closed out.
Check equipments specification: boiler, energy meter, generator.	Verified the document sent to SEMA to request the previous license of the project where Uaná Energias Renováveis S/A request the installation of a thermal power plant in the city of Paragominas/PA. This document presents the installed capacity of the plant, 8MW. Equipments that will installed: turbine with 80000kW and generator with 10000kVA (equivalent to 8MW). The energy meter will follow the recommendation of the local energy concessionary and the Energy Chamber.	Site visit/Ref. 11	No
Check spreadsheet with baseline emissions calculation.	Copy of the spreadsheet with baseline emissions calculation was provided and presents the correct estimative according to the evidences provided and PDD.	Site visit/Ref. 1, 18	No
Check spreadsheets with financial analysis and benchmark.	Copy of the spreadsheet with financial analysis was provided.	Site visit/Ref. 19	No

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
Check evidence of all assumptions in the financial spreadsheet and benchmark.	The financial spreadsheet with evidence of the assumption used should be provided. Also the spreadsheet with WACC calculation with respective assumptions and evidences and sensitivity analysis. Pending assumption: operational costs, maintenance costs, investment, t/h, internal electricity consumption, transmission looses, etc. NIR 3 was raised.	Site visit/Ref. 1, 19	The financial spreadsheet was provided with equity IRR, sensitivity analysis and benchmark used. Also the evidence for the following assumptions was provided: operational cost, maintenance cost, investment, energy tariff and other parameters used in the financial analysis. NIR 3 was closed out.
How MCF parameter was defined as 0.8? Check the condition of unmanaged solid waste disposal sites.	The MCF parameter was defined as 0.8 because the source of residue is the suppliers located in the region. The residue is stored in the suppliers company. The residue does not come from a controlled landfill. The conclusion is that the residue comes form unmanaged solid waste disposal site located in the project boundary.	Site visit/Ref. 12	No
Check evidences of the climatic conditions at the SWDS site (temperature, precipitation). Long term averages based on statistical data shall be used. Provide references.	According to the City Hall of Paragominas website the climatic conditions are (www.paragominas.pa.gov.br / http://www.inteligentesite.com.br/modelos/modelo71/conteudo.asp?ID=471&IDLINK=4348): Tropical with Mean Annual Temperature of 25ºC, Mean Annual Precipitation between 2,250mm and 2,500mm.	Site visit/Ref. 1	No

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
Check CER calculation, provide spreadsheet.	The revised CER spreadsheet with formulas, considering the correct generation and the most recent emission factor should be provided. CAR 4 was raised.	Site visit/Ref. 18	Copy of the CER spreadsheet with formulas was provided, considering the applicable emission factor, correct generation according to the documents provided during validation assessment. CAR 4 was closed out.
Check monitoring plan: procedures, responsibilities, etc.	The monitored parameters do not present quality assurance and quality control. There are parameters that are missing in the PDD version 1. CAR 5 was raised.	Site visit/Ref. 1	The revised PDD presented the quality assurance and quality control for the monitored parameters. The QA/QC are considered reasonable to each motoring parameter of the project. CAR 5 was closed out.
Check starting date of the project activity.	At the time of the site visit it was confirmed that the project activity does not started. The project participant is working in order to obtain the required licenses. The prevision during validation assessment was 02/01/2009 (contracts and construction start) and could be latter depending on the issuance of installation license and ANEEL authorization.	Site visit/Ref. 1	No
Check how was defined the lifetime of 20 years. Provide evidence.	The lifetime of the equipments are 20 years and can be higher depending on the periodic maintenance.	Site visit/Ref. 20	No
Check environmental license.	Verified the previous license protocol number 397217 sent to the environmental agency SEMA on 19/09/2008, published in the “Diário official” nº31258 on 19/09/2008.	Site visit/Ref. 14	No

Annex 2: Validation Protocol

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

Requirement	Reference	Comments	Conclusion
1. All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	Marrakech Accords, CDM Modalities §30	Brazil is listed as the non-Annex-I Party, has ratified the protocol on 23rd August 2002 and is allowed to participate http://maindb.unfccc.int/public/country.pl?country=BR	Y
2. 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.	Marrakech Accords, CDM Modalities §29 and §30	There is no Annex I Party involved at this time in the project activity.	Y
3. 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	Marrakech Accords, CDM Modalities §29 and §30 Kyoto Protocol Art. 12.2, Marrakech Accords, CDM Modalities §40a	No letter of approval was issued by Brazil (report should be sent to DNA).	Pending
4. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available	Marrakech Accords, CDM Modalities, §40	PDD publicly available: 23 Aug 08 - 21 Sep 08 http://cdm.unfccc.int/Projects/Validation/DB/JBBB2JCVM8ICSS65TT6Z5VWJC4UQLW/view.html No comments received	Y
5. The project design document shall be in conformance with the UNFCCC SSC PDD format		It follows the CDM- PDD template version 03.	Y

Requirement	Reference	Comments	Conclusion
6. The project participants shall submit a letter on the modalities of communication (MoC) before submitting a request for registration	EB-09 F_CDM_REG form	Project Participant will provide the document after the validation approval.	Pending
7. 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?		NA	NA

Table 2 PDD

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A. General Description of Project Activity					
A.1. Project Title					
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	1	DR	Yes, the title "CDM Project Paragominas" identifies the unique CDM project activity.	Y	Y
A.1.2. Are there an indication of a revision number and the date of the revision?	1	DR	Yes, PDD version 2, 18/11/2008.	Y	Y
A.1.3. Is this in consistency with the time line of the project's history?	1	DR	Yes, the PDD version and date are Ok.	Y	Y
A.2. Description of the Project Activity					
A.2.1. Is the description delivering a transparent overview of the project activities?	1	DR	Yes, the information presented in the PDD is available and can be confirmed through documents and references provided during validation assessment.	Y	Y
A.2.2. Is all information provided in compliance with actual situation or planning?	1, 8, 9, 10, 11	DR	Yes, Ref. 8 and 10 are related to the board meeting and constitution of Uaná Energias Renováveis SA. Ref.9 is the map of the project location. Ref.11 is the document sent to environmental agency to obtain the previous license. All information provided is in compliance with actual situation presented in the PDD.	Y	Y
A.2.3. Is all information provided consistent with details provided in further chapters of the PDD?	1	DR	Yes, the information provided is consistent with PDD version 2.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A.3. Project Participants					
A.3.1. Is the table required for the indication of project participants correctly applied?	1	DR	Yes. Brazil is the Party involved in the project. The project participants are the following entities: • Uaná Energias Renováveis S/A. • Enerbio Consultoria Ltda.	Y	Y
A.3.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1	DR	Yes, the same project participants are listed in section A.3 and Annex 1 of the PDD.	Y	Y
A.4. Technical Description of the Project Activity					
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1	DR	The project is located in the municipality of Paragominas in the northeast mesoregion of Pará, 310 km from the capital of the state, Belém. NIR 1: The PDD version 1 presents several geographic coordinates for the project location. The correct coordinate that identify the unique location of the project activity should be used. The PDD version 2 presents the correct geographic coordinates for the project location, South 02º 59'03.6" and West 47º 22'18.1". NIR 1 was closed out.	~~NIR 1~~	Y
A.4.2. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	8, 11	DR	Verified the document sent to SEMA to request the previous license of the project where Uaná Energias Renováveis S/A request the installation of a thermal power plant in the city of Paragominas/PA. Verified the constitution board meeting of the company, 31/10/2007, Uaná Energias Renováveis S/A.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A.4.3. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance and is the explanation how the project will reduce greenhouse gas emission transparent and suitable?	1	DR	The project will use biomass as fuel that is environmentally safe technologies, which otherwise would be left to decay in open skies and still generates energy from renewable sources.	Y	Y
A.4.4. Does the project design engineering reflect current good practices?	1	DR	It is expected to use the best technology available.	Y	Y
A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?	11	DR	Verified the document sent to SEMA to request the previous license of the project where Uaná Energias Renováveis S/A request the installation of a thermal power plant in the city of Paragominas/PA.	Y	Y
A.4.6. 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?	1	DR	It is expected to use the best technology available.	Y	Y
A.4.7. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1	DR	No, it is not expected to be substituted during crediting period.	Y	Y
A.4.8. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	1	DR	The project is not implemented and initial training and maintenance efforts will be necessary before operation.	Y	Y
A.4.9. Does the project make provisions for meeting training and maintenance needs?	1	DR	The project is not implemented and initial training and maintenance efforts will be necessary before operation.	Y	Y
A.4.10. Is a schedule available on the implementation of the project and are there any risks for delays?	11	DR	The schedule of project implementation is available and was sent to the environmental agency.	Y	Y
A.4.11. Is the table required for the indication of projected emission reductions correctly applied?	1	DR	Yes, according to the PDD template and guidelines.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
A.5. Public Funding					
A.5.1. Does the information on public funding provided conform with the actual situation or planning as presented by the project participants?	1	DR	No public funding is being used for the project activity.	Y	Y
A.5.2. Is all information provided consistent with details provided by further chapters of the PDD (in particular annex 2)?	1	DR	No public funding is being used for the project activity.	Y	Y
A.5.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance	1	DR	There is no Annex I Party participating of the project activity.	Y	Y
A.6. Debundling					
A.6.1. Is the small-scale project activity a debundled component of a large scale project activity	www.unfccc.int / www.mct.gov.br	DR	The project is not a fragmentation of a large scale project activity. Verified that there is not other project registered or in validation by the same project participant, in the same region, category or technology.	Y	Y
A.6.2. If the project is a debundled component of a larger project, does the larger project fall within the limits for small-scale CDM project activities	1	DR	Not applicable, the project is not a debundled component of a larger project.	Y	Y
B. Baseline and Monitoring Methodology					
B.1. Choice and Applicability					
B.1.1. Is the project using an approved simplified methodology?	1, 2, 3	DR	Project activity using approved simplified methodologies AMS ID, version 13 and AMS IIIE, version 15.1.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.1.2. Does the project activity qualify as small scale project?	1, 2, 3	DR	AMS ID: the project qualifies as a small scale because the installed capacity of the thermal plant is 8MW, below the limit of 15MW for type I projects. Verified the document sent to SEMA to request the previous license of the project. This document presents the installed capacity of the plant, 8MW. Equipments that will installed: turbine with 80000kW and generator with 10000kVA (equivalent to 8MW). NIR 2: According to the "validation document" verified during site visit the thermal capacity of the project is correct but the calculation should be provided as evidence. The document provided during validation assessment presents the thermal capacity of the project and the PDD version 2 presents how it was calculated. NIR 2 was closed out. AMS IIIE: the project qualifies as a small scale because the thermal capacity is below the limit of 45MW and will not exceed 60ktCO2e per year. Installed capacity of 8MW * fuel consumption of .5kg/kWh = 12MWth	~~NIR 2~~	Y
B.1.3. Is the category(ies) of the project activity correctly identified in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities?	1, 2, 3	DR	The type and category of the project is correct selected, ID and IIIE in accordance with information provided and PDD version 2. Also the most recent versions of the methodologies are being used.	Y	Y
B.1.4. Is the project activity a bundle of several small scale activities and if so does it contain any sub-bundles	1	DR	The project activity is not a bundle of several small scale activities.	Y	Y
B.1.5. If the project activity is a bundle of several small scale activities, does the sum of the total bundle (including any subbundles) fall within the limits for small scale projects	1	DR	Not applicable. The project activity is not a bundle of several small scale activities.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.1.6. If the project activity is a bundle of several small scale activities, has the form with information related to the bundle been submitted and is it correctly used	1	DR	Not applicable. The project activity is not a bundle of several small scale activities.	Y	Y
B.2. Project Boundary					
B.2.1. Has the project boundary of the project activity been based on the guidance of the applicable project category?	1	DR	Project boundary encompasses the physical and geographical site of the renewable generation source. The location of the waste wood plant of Paragominas Project. For category III.E the project boundary is the physical and geographical site where the solid waste would have been disposed or methane emission occurs in absence of the project. The itineraries between then, where the transportation of wastes and combustion residues occurs. In the absence of the project, the residues would be disposed in sawmills of the Paragominas City according table 3 of PDD version 2.	Y	Y
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with EB guidance and the underlying methodology?	1	DR	Resolution nº 8 of the Brazilian DNA defined that the National Interconnected System must be considered as a unique System and that this configuration is valid for calculating the emission factor of CO2 used to calculate the emission reduction of greenhouse gases in CDM Projects connected to the national grid.	Y	Y
B.2.3. Are the project's spatial boundaries (geographical) and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	1	DR	Yes, project boundaries clearly defined in the PDD version 2.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.3. Identification of the Baseline					
B.3.1. Does the PDD discuss the identification of the most likely baseline?	1	DR	The baseline scenario is that in the absence of the project activity, residues of wood would be left to decay in the project boundary and methane would be left to the atmosphere. By the project implementation the emission of methane will be avoided and organic waste will be used to generate electricity to the grid.	Y	Y
B.3.2. Is the discussion and determination of the chosen baseline transparent and supported by the available data?	1	DR	The determination of the baseline is transparent using available data. The project component related to the generation of renewable energy connected to the grid is the kWh produced by the renewable generating unit multiplied by an emission coefficient. For the component related to the avoidance methane, the baseline emissions represent the amount of methane which, in the absence of the project activity would be generated through disposal at a solid waste disposal site and calculation is based in a first order decay model.	Y	Y
B.3.3. Is conservativeness addressed in the way of identifying the baseline?	1	DR	Yes, the baseline selected provides for a conservative determination of the emission reductions.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.4. Additionality					
B.4.1. Is the discussion on additionality and the evidence provided consistent with the starting date of the project	1	DR	The CDM consideration is not an issue in this project because the validation started before starting date of the project activity. Besides that the CDM was considered before validation. Verified the constitution board meeting of the company, 31/10/2007, Uaná Energias Renováveis S/A. On 27/05/2008 it was presented a new board meeting where the CDM is considered in order to viable the project implementation. Annex A of the Appendix B of the Simplified Modalities and Procedures to Small Scale CDM Project Activities was used to demonstrate additionality.	Y	Y
B.4.2. Is the discussion on additionality based on a comparison with realistic and credible alternatives?	1	DR	The following alternative scenarios were presented: The continuity of the current situation, with electricity being generated by the current grid and residues being disposed in open dumps. The construction of new diesel power plants in the state of Pará. The implementation of project without incentives from CDM.	Y	Y
B.4.3. Does the discussion on additionality take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	1, 11, 12	DR	The discussion takes into account the relevant national policies. It is important to explain the Brazilian electrical sector, and the energetic matrix in the state of Pará, where the project is located. The Brazilian energetic matrix hydro plants are responsible for 74.07% of the installed capacity	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
			and thermo plants are responsible for 21.52% of the installed capacity. The fuel used in thermo plants in Brazil are 75.79% fossil fuel and 20.09% biomass. Considering only the plants that use biomass, 25 projects in the country use wood residue as fuel to generate energy and the installed capacity of these projects represents 4.93% of the thermal capacity in the country. According to the Decennial Plan for Electric Energy Expansion to the period of 2006-2015 there is no expectation to the installation of biomass power plants in region North where the project is located. Analyzing only the state of Pará where project is located there are 54 thermoelectric power plants in operation and only two make use of wood residues as fuel and they are not located in the municipality of Paragominas. Source of data: http://www.aneel.gov.br/area.cfm?idArea=15&idPerfil=2; http://www.aneel.gov.br/area.cfm?idArea=15&idPerfil=2.		
B.4.4. Has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives?	1, 15, 16, 17, 19, 20	DR	NIR 3: The financial spreadsheet with evidence of the assumption used should be provided. Also the spreadsheet with WACC calculation with respective assumptions and evidences and sensitivity analysis. Pending assumption: operational costs, maintenance costs, investment, t/h, internal electricity consumption, transmission looses, etc. The financial spreadsheet was provided with equity IRR, sensitivity analysis and benchmark used. Also the evidence for the following assumptions was provided: operational cost, maintenance cost,	~~NIR 3~~	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
			investment, energy tariff and other parameters used in the financial analysis. NIR 3 was closed out. Barrier analysis: - Financial barrier. The equity Internal Rate of Return (IRR) compared with Brazilian Governmental Bond2 - BRL 2008 (benchmark) was presented to demonstrate that the project activity is not financial attractive or feasible. The benchmark used is the 21 years Brazilian Governmental Bond 2 BRL 2008 plus a conservative risk premium for the project documented by official publicly available data. This governmental bond is 10.68% (http://www.tesouro.fazenda.gov.br/english/public_debt/downloads/informes/Emissao_Global_BRL2028_eng.pdf). The risk premium according to BNDES bank the direct spread for investments related to renewable energy is 0.9% per year (source: http://www.bndes.gov.br/infraestrutura/default.asp). Also there is the credit risk but it was not considered in the benchmark. Benchmark considered in the financial analysis 10.68% + 0.9% = 11.58%. Verified that the estimated revenue is based on the estimated energy price multiplied by the energy generation (based on the first auction for alternative sources, Ref.17). The conservative value of R$150/MWh was used in the analysis. Verified that the investment is based in the technical proposal prepared by KROMA (NºK28008R02, 05/11/2008). The loan costs consider		

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
			that the direct spread for thermal generation TJLP + 0.9% per year (source: http://www.bndes.gov.br/infraestrutura/default.asp). The TJLP is 6.25% per year +0.9% = 7.15% plus the estimate minimum spread of commercial banks of 2.1%/year. The estimated operational and maintenance costs (Ref.17 and 20) was provided and represents the operation, consumables, fuel, fuel transportation, maintenance, insurance, ANEEL tax and others. Considering the data presented and references and according to the cash flow the equity IRR is 2.83% which is lower than the benchmark of 11.58%. The project is not financial attractive. Verified the sensitivity analysis where the main variables affecting the IRR were analyzed. The analysis considering the variation of +5% to +10% in the price of the electricity (the only revenue of the project activity), and -5% to -10% in the total investment and operational costs. The maximum IRR after sensitivity analysis is 10.83%. The result of the sensitivity analysis was that even varying -/+10% the IRR is still lower than the Benchmark. - Prevailing practice. The Brazilian energetic matrix hydro plants are responsible for 74.07% of the installed capacity and thermo plants are responsible for 21.52% of the installed capacity. The fuel used in thermo plants in Brazil are 75.79% fossil fuel and 20.09% biomass. Considering only the plants that use biomass, 25 projects in the country use		

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
			wood residue as fuel to generate energy and the installed capacity of these projects represents 4.93% of the thermal capacity in the country. According to the Decennial Plan for Electric Energy Expansion to the period of 2006-2015 there is no expectation to the installation of biomass power plants in region North where the project is located. Analyzing only the state of Pará where project is located there are 54 thermoelectric power plants in operation and only two make use of wood residues as fuel and they are not located in the municipality of Paragominas. The conclusion is that the thermo electrical energy generation in the state of Pará using biomass is composed of approximately 1% of the capacity and can not be considered a common practice and does not receive any incentive. The final opinion of the barrier analysis is that the project activity attends the methodologies and small scale requirements and can be considered additional.		
B.4.5. Is it demonstrated/justified that the project activity itself is not a likely baseline scenario	1	DR	According to the barriers presented and considering the Brazilian electrical sector. The continuity of the current situation, with electricity being generated by the current grid and residues being disposed in open dumps and the construction of new diesel power plants in the state of Pará does not face any barrier. The baseline scenario is the continuation of current practice: energy generation by the existent grid with fossil fuel plants and biomass being left to decay in sawmills.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.5. Application of the Simplified Methodology					
B.5.1. Has the simplified methodology been applied correctly for determining **baseline emissions**?	1, 18	DR	The baseline emissions of the component related to the energy generation is the kWh produced by the multiplied by the grid emission factor. The baseline emissions of the component related to the methane avoidance is the amount of methane which, in the absence of the project would be generated through disposal at a solid waste disposal site.	Y	Y
B.5.2. Has the simplified methodology been applied correctly for determining **project emissions**?	1, 18	DR	The project emissions, related to category III.E, are calculated: $PE_y = PE_{y,comb} + PE_{y,transp} + PE_{y,power}$ Just emissions related to transportation will be considered, the other components are zero.	Y	Y
B.5.3. Has the simplified methodology been applied correctly for determining **leakage**?	1, 18	DR	Leakage is not applicable.	Y	Y
B.5.4. Have all the methodological choices been explained, have they been properly justified and are they correct	1, 18	DR	All baseline methodological choices have been explained and are in accordance with AMS ID and AMS IIIE.	Y	Y
B.5.5. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	1, 18	DR	Yes.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.6. Ex-ante Data and Parameters Used					
B.6.1. Are the data provided in compliance with the simplified methodology?	1	DR	Yes, all ex-ante parameters are considered in the PDD version 2. The following parameters were considered: - Model correction factor to account for model uncertainties; - Oxidation factor; - Fraction of methane in the SWDS; - Fraction of degradable organic carbon that can decompose; - Methane correction factor; - Fraction of degradable organic carbon (by weight) of the wood residue; - Decay rate for wood residue; - CO2 emission factor from fuel use due to transportation.	Y	Y
B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	1	DR	Yes, most of ex-ante data are derived from the Tool to determine methane emissions avoided from disposal of waste a solid waste disposal site.	Y	Y
B.6.3. Is the vintage of the baseline data correct?	1	DR	Yes, the correct data for the project period is applied.	Y	Y
B.7. Calculation of Emissions Reductions					
B.7.1. Has the approved methodology been applied correctly for determining **emission reductions**?	1, 18	DR	The approved methodologies has being correctly applied: ERtotal = ERID + ERIIIE ERID = BEy = EGy* EFgrid,CM,y ERIIIE = BEy – PEy	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.7.2. Are the emission reduction calculations documented in a complete and transparent manner?	1, 18	DR	CAR 4: The revised CER spreadsheet with formulas, considering the correct generation and the most recent emission factor should be provided. Copy of the CER spreadsheet with formulas was provided, considering the applicable emission factor, correct generation according to the documents provided during validation assessment. CAR 4 was closed out.	~~CAR 4~~	Y
B.7.3. Have conservative assumptions been used to calculate emission reductions?	1, 18	DR	Yes, used the correct data confirmed through excel sheet with calculation.	Y	Y
B.7.4. Is the projection based on provable input parameter?	1, 18	DR	See section B.6.	Y	Y
B.7.5. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	1, 18	DR	The same procedure for calculation will be used for later monitoring but using the measured data.	Y	Y
B.7.6. Is the calculation of the emission reduction correct?	1, 18	DR	Yes, formulas and data correctly applied in the spreadsheet provided.	Y	Y
B.8. Emission Reductions					
B.8.1. Will the project result in fewer GHG emissions than the baseline scenario?	1	DR	Yes, the project reduces emissions as the result of the displacement of generation from fossil fuel thermal plants that would have otherwise been delivered to the interconnected grid and through the avoidance of methane of the wood residue that would be left to decay.	Y	Y
B.8.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1	DR	The table in the PDD with estimated emission reductions is correctly applied.	Y	Y
B.8.3. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1	DR	Yes, the projection is in line with indicated crediting period.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.9. Monitoring Methodology					
B.9.1. Does the monitoring methodology provide a consistent approach in the context of all parameter to be monitored and further information provided by the PDD?	1	DR	Yes, the parameters presented in the PDD version 2 are consistent with methodology AMS ID version 13 and AMS IIIE version 15.1.	Y	Y
B.9.2. Does the monitoring methodology consistently apply the choice of the option selected for monitoring both of project and baseline emissions?	1	DR	This project uses small scale methodology. Project and baseline emissions will be monitored according to section B.7 of the PDD version 2.	Y	Y
B.10. Data and Parameters Monitored					
B.10.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?	1	DR	Yes, the project activity will be monitored according to AMS ID version 13 and AMS IIIE version 15.1. Monitored parameters are presented in the PDD version 2.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.10.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the simplified methodology applied?	1	DR	Yes, the monitored parameters are according to the required by the methodology: Electricity supplied by the project activity to the grid; Ex-post emission factor will be calculated by MCT with ONS data; Fraction of methane captured at the SWDS; Global Warming Potential (GWP) of methane; Total Amount of organic waste prevented from disposal; Quantity of waste combusted; Average truck capacity for waste transportation; Average incremental distance for waste transportation; Quantity of combustion and gasification residues; Average truck capacity for waste transportation; Average distance for residues transportation. The project will carry out an annual census through the data made available by official entities of the region or through data elaborated through studies ordered by it, about the percentage of residues used in Paragominas Project.	Y	Y
B.10.3. Will it be possible to determine the specified project GHG indicators?	1	DR	Yes, indicator in conformance with the requirements of AMS ID version 13 and AMS IIIE version 15.1.	Y	Y
B.10.4. Will the indicators enable comparison of project data and performance over time?	1	DR	Yes, the information is sufficient to ensure the implementation of the monitoring plan.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.10.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	1	DR	Brief description of measurement methods and procedures to be applied presented for each parameter.	Y	Y
B.10.6. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	1	DR	Yes, sufficient to ensure high quality data.	Y	Y
B.10.7. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	1	DR	Yes, the monitored data will be manual or automatically checked by third party and project participant.	Y	Y
B.10.8. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	1	DR	The project emission related to the transport of biomass to the project site and residues are considered in the estimation presented in the PDD and will be monitored according to section B.7.1 of the PDD.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.11. Quality Control (QC) and Quality Assurance (QA) Procedures					
B.11.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	1	DR	CAR 5: The monitored parameters do not present quality assurance and quality control. There are parameters that are missing in the PDD version 1. The revised PDD version 2 presents the quality assurance and quality control for the monitored parameters. The QA/QC is considered reasonable to each motoring parameter of the project. CAR 5 was closed out. Electricity will be continually measured and monitored by the supervisory system of the plant. Ex-post emission factor will be calculated by MCT with ONS data. The project will use a mechanical scale and internal registration to monitor the quantity of biomass that will be used. The average truck capacity will be measured by project participants through the use of internal spreadsheets forms. The average incremental distance for waste transportation will be measured by project participants through the use of internal spreadsheets forms.	~~CAR 5~~	Y
B.11.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	1	DR	Yes, correctly for each monitored parameter.	Y	Y
B.11.3. Are quality control procedures and quality assurance procedures sufficiently described to ensure the delivery of high quality data?	1	DR	See CAR 5.	~~CAR 5~~	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.11.4. Is it ensured that data will be bound to national or internal reference standards?	1	DR	See B.11.1.	Y	Y
B.11.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions?	1	DR	See B.11.1.	Y	Y
B.12. Operational and Management Structure					
B.12.1. Is the authority and responsibility of project management clearly described?	1, 20, 21	DR	Yes, the authority and responsibilities are clearly described in PDD section B.7.2 according to the actual project planning (it is important to explain that the project activity is not implemented yet). Uaná Energias Renováveis is the operator and Owner of the project. Enerbio Consultoria is responsible for monitoring data and for project emissions reductions calculation, responsible for the development of periodic monitoring reports. Operation and Maintenance staff is responsible for activities related to the plant's operation and maintenance. Electric Power Commercialization Chamber (CCEE) is responsible for implantation, operation and maintenance of SCDE, to enable the collection of electric energy's data for the use of Accounting and Settlement System (SCL). Calibration Outsourced Agent will be hired according the legal requirements of Brazil to make calibration of the measurement equipments.	Y	Y
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	1	DR	Yes, see section B.11.1.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.12.3. Are procedures identified for training of monitoring personnel?	1	DR	The project is not implemented and personnel will be trained before project operation.	Y	Y
B.13. Monitoring Plan (Annex 4)					
B.13.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	1	DR	Annex 4 of the PDD refers to section B.7.2 where the monitoring plan according to the actual status of project is described (project is not implemented yet).	Y	Y
B.13.2. Does the monitoring plan completely describes all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?	1	DR	According to section B.7.2 of the PDD there are two data collection channels in each measurement points. One channel is used by the company for direct collection and the other one is used by CCEE for data validation. The operation and maintenance staff is responsible for obtaining data directly from the meters. The operation and maintenance staff is also responsible for generating, at each month in the first working day, the spreadsheets with the generation data. The project will be responsible for monitoring the wood residues to be used. Data will be obtained though a mechanical scale calibrated periodically, according to national standards.	Y	Y
B.13.3. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	1	DR	Yes, according to section B.7.2 of the PDD.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
B.13.4. Are procedures identified for calibration of monitoring equipment?	1	DR	Calibration will follow what was described on the document elaborated by ONS – Sub module 12.3 - Maintenance of the measurement system for billing. Mechanical scale will be calibrated periodically, according to national quality standards. This procedure is not 100% defined yet.	Y	Y
B.13.5. Are procedures identified for maintenance of monitoring equipment and installations?	1	DR	Yes, see section B.13.2.	Y	Y
B.13.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	1	DR	Yes, see section B.13.2.	Y	Y
B.13.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems??	1	DR	Yes, see section B.13.2.	Y	Y
B.13.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	1	DR	Enerbio Consultoria is responsible for monitoring data and for project emissions reductions calculation, responsible for the development of periodic monitoring reports.	Y	Y
B.13.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	1	DR	Yes, see section B.13.2.	Y	Y
B.14. Baseline Details					
B.14.1. Is there any indication of a date when determine the baseline?	1	DR	Baseline completed on 01/08/2008 by Enerbio that is also one of the project participants.	Y	Y
B.14.2. Is this in consistency with the time line of the PDD history?	1	DR	Yes, consistent with PDD version 2.	Y	Y
B.14.3. Is all data required provided in a complete manner by annex 3 of the PDD?	1	DR	Yes, annex 3 of the PDD presents the data used in the baseline.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
C. **Duration of the Project / Crediting Period**					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	1	DR	The prevision during validation assessment was 02/01/2009 (contracts and construction start) and could be later depending on the issuance of installation license and ANEEL authorization. Operational lifetime is 20 years.	Y	Y
C.1.2. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1	DR	Assumed renewable crediting period. First crediting period of 7years.	Y	Y
C.1.3. Does the project's operational lifetime exceed the crediting period	1	DR	The lifetime exceed the first crediting period.	Y	Y
D. Environmental Impacts					
D.1.1. Does the project comply with environmental legislation in the host country?	1, 14	DR	The project is in the initial phase. Verified the previous license protocol number 397217 sent to the environmental agency SEMA on 19/09/2008, published in the "Diário official" nº31258 on 19/09/2008.	Y	Y
D.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	1, 14	DR	The necessity of an environmental impact assessment will be made by the environmental agency SEMA when analyzing the documentation sent on 19/09/2008 to obtain the previous license.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
E. Stakeholder Comments					
E.1.1. Have relevant stakeholders been consulted?	1, 13	DR	Copy of the letters sent to local stakeholders and delivery receipts were provided. Letters were sent in local language. The PDD in Portuguese was made available to local stakeholders. The project follows the Brazilian DNA Resolution Nº 7. The following stakeholders were consulted: - City Hall of Paragominas; - Municipal Assembly of Paragominas; - Paragominas Secretary of Environment; - UMAMP (Municipal Union of Residents Association of Paragominas); - State Secretary of Environment; - Federal Attorney of Public Interest; - State of Pará Attorney of Public Interest; - Brazilian Fórum of NGO's and Social Movements for Environment and Development.	Y	Y
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	1, 13	DR	Letters were sent in local language.	Y	Y
E.1.3. 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?	1, 13	DR	The PDD in Portuguese was made available to local stakeholders. The project follows the Brazilian DNA Resolution Nº 7.	Y	Y
E.1.4. Is the undertaken stakeholder process described in a complete and transparent manner?	1, 13	DR	The PDD in Portuguese was made available to local stakeholders. The project follows the Brazilian DNA Resolution Nº 7.	Y	Y
E.1.5. Is a summary of the stakeholder comments received provided?	1, 13	DR	No comment received.	Y	Y

Checklist Question	Ref. ID	MoV*	Comments	Draft Concl	Final Concl
E.1.6. Has due account been taken of any stakeholder comments received?	1, 13	DR	No comment received.	Y	Y

References

S.No	Title / Description	Comments
1	PDD: CDM Project Paragominas. Version 1, 01/08/2008. Version 2, 18/11/2008. Version 3, 31/07/2009.	PDD
2	Methodology AMS ID version 13.	Methodology AMS ID version 13.
3	Methodology AMS IIIE version 15.1.	Methodology AMS IIIE version 15.1.
4	Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site, version 4.	Tool to determine methane emissions avoided from disposal of waste at a solid waste disposal site, version 4.
5	Tool to calculate an emission factor for an electricity system, version 1.1.	Tool to calculate an emission factor for an electricity system, version 1.1.
6	Pending LoA	Pending LoA
7	MoC	MoC
8	Institution board meeting of the company, 31/10/2007, Uaná Energias Renováveis S/A.	Institution board meeting of the company.
9	Map with location of the project activity, November 2007.	Map with location of the project activity, November 2007.
10	Board meeting, 27/05/2008 related to CDM consideration.	Board meeting, 27/05/2008 related to CDM consideration.
11	Document sent to SEMA to request the previous license of the project where Uaná Energias Renováveis S/A request the installation of a thermal power plant in the city of Paragominas/PA, 02/09/2008.	Document sent to SEMA to request the previous license.

12	Technical Report "Levantamento Quantitativo dos Resíduos de Madeira" made by the City Hall of Paragominas – Environmental Secretary on 19/09/2007.	Technical Report
13	Local stakeholder consultation (letters and delivery receipts).	Local stakeholder consultation.
14	Previous license protocol number 397217 sent to the environmental agency SEMA on 19/09/2008 and LP 006/2009.	Previous license protocol.
15	Financial analysis clarification/ debt report of National Treasury.	Financial analysis clarification/ debt report of National Treasury.
16	Baseline data clarification.	Baseline data clarification.
17	Financial clarification.	Financial clarification.
18	CER spreadsheet.	CER spreadsheet.
19	Financial spreadsheet.	Financial spreadsheet.
20	Technical proposal Nº K280 08R02, 05/11/2008.	Technical proposal for the project implementation and equipments.
21	Technical clarification from EG Rendeiro.	Technical clarification from EG Rendeiro.

A.3 Annex 3: Overview of Findings

Findings Overview

Findings from validation of CDM Project Paragominas.
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: This is an open list and more findings may be added as validation progresses.

Date:	06/11/2008			Raised by:	Fabian Gonçalves		
No.:	1	Type:	NIR	Issue:	Geographic coordinates	Ref.:	Local checklist
Lead Assessor Comment:					Date: 06/11/2008		
The PDD version 1 presents several geographic coordinates for the project location. The correct coordinate that identify the unique location of the project activity should be used.							
Project Participant Response:					Date: November 18th		
The coordinates that identify the unique location of the project activity were provided in the PDD version 2							
Lead Assessor Comment:					Date: 18/12/2008		
Information Provided: Revised PDD. Information Verified: Revised PDD version 2.						Verified Document Reference: Ref.1	
Reasoning for not acceptance or acceptance and close out: The PDD version 2 presents the correct geographic coordinates for the project location, South 02º 59'03.6" and West 47º 22'18.1". NIR 1 was closed out.							

Date:	06/11/2008			Raised by:	Fabian Gonçalves		
No.:	2	Type:	NIR	Issue:	Thermal capacity	Ref.:	Local checklist
Lead Assessor Comment:					Date: 06/11/2008		
According to the "validation document" verified during site visit the thermal capacity of the project is correct but the calculation should be provided as evidence.							
Project Participant Response:					Date: November 18th		
The calculation of thermal capacity of the project was provided in the PDD version 2.							
Lead Assessor Comment:					Date: 18/12/2008		
Information Provided: Revised PDD. Information Verified: Revised PDD version 2.						Verified Document Reference: Ref.1	
Reasoning for not acceptance or acceptance and close out: The document provided during validation assessment presents the thermal capacity of the project and the PDD version 2 presents how it was calculated. NIR 2 was closed out.							

Date:	06/11/2008			Raised by:	Fabian Gonçalves		
No.:	3	Type:	NIR	Issue:	Financial analysis	Ref.:	Local checklist
Lead Assessor Comment:					Date: 06/11/2008		
The financial spreadsheet with evidence of the assumption used should be provided. Also the spreadsheet with WACC calculation with respective assumptions and evidences and sensitivity analysis. Pending assumption: operational costs, maintenance costs, investment, t/h, internal electricity consumption, transmission looses, etc.							
Project Participant Response:					Date: November 18th		
Financial spreadsheet (With the sensitivity analysis) was provided. Project Participants decided to use in the PDD the Equity IRR and to compare with another benchmark. All assumptions and evidences were sent to DOE.							
Lead Assessor Comment:					Date: 18/12/2008		
Information Provided: Financial spreadsheet. Information Verified: Financial spreadsheet with equity IRR.					Verified Document Reference: Ref. 19		
Reasoning for not acceptance or acceptance and close out: The financial spreadsheet was provided with equity IRR, sensitivity analysis and benchmark used. Also the evidence for the following assumptions was provided: operational cost, maintenance cost, investment, energy tariff and other parameters used in the financial analysis. NIR 3 was closed out.							

Date:	06/11/2008			Raised by:	Fabian Gonçalves		
No.:	4	Type:	CAR	Issue:	CER spreadsheet	Ref.:	Local checklist
Lead Assessor Comment:					Date: 06/11/2008		
The revised CER spreadsheet with formulas, considering the correct generation and the most recent emission factor should be provided.							
Project Participant Response:					Date: November 18t		
CER spreadsheet with formulas, considering generation and the most recent emission factor was provided.							
Lead Assessor Comment:					Date: 18/12/2008		
Information Provided: CER spreadsheet. Information Verified: CER spreadsheet with formulas.					Verified Document Reference: Ref. 18		
Reasoning for not acceptance or acceptance and close out: Copy of the CER spreadsheet with formulas was provided, considering the applicable emission factor, correct generation according to the documents provided during validation assessment. CAR 4 was closed out.							

Date:	06/11/2008			Raised by:	Fabian Gonçalves		
No.:	5	Type:	CAR	Issue:	QA/QC	Ref.:	Local checklist
Lead Assessor Comment:					Date: 06/11/2008		
The monitored parameters do not present quality assurance and quality control. There are parameters that are missing in the PDD version 1.							
Project Participant Response:					Date: November 18t		
PDD version 2 provides quality assurance and quality control for all monitored parameters and all parameters were included in PDD version 2.							
Lead Assessor Comment:					Date: 18/12/2008		
Information Provided: Revised PDD. Information Verified: Revised PDD version 2.					Verified Document Reference: Ref.1		

Reasoning for not acceptance or acceptance and close out: The revised PDD presented the quality assurance and quality control for the monitored parameters. The QA/QC are considered reasonable to each motoring parameter of the project. CAR 5 was closed out.

A.4 Annex 4: Team Members Statements of Competency

Name: Fabian Goncalves SGS Affiliate: SGS Brazil

Status

- Product Co-ordinator ☒
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☐

	Validation	Verification
- Local Assessor	☒	☒
- Lead Assessor	☒	☒
- Assessor / Trainee Lead Assessor	☒	☒

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	☒
2. Energy Distribution	☐
3. Energy Demand	☐
4. Manufacturing	☒
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 Sulphur Hexafluoride	☐
12. Solvent Use	☐
13. Waste Handling and Disposal	☒
14. Afforestation and Reforestation	☐
15. Agriculture	☐

Approved Member of Staff by: Siddharth Yadav Date: 18/10/2007