VALIDATION REPORT

COINBRA-CRESCIUMAL BAGASSE COGENERATION PROJECT (CCBCP) IN BRAZIL

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DET NORSKE VERITAS

VALIDATION REPORT

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Client: Coinbra-Cresciumal S/A and Econergy Brasil Ltd.	Client ref.: Marcelo Diniz Junqueira

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Summary:
Det Norske Veritas Certification Ltd. (DNV) has performed a validation of the "Coinbra-Cresciumal Bagasse Cogeneration Project (CCBCP)" in Brazil on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM Executive Board.
The validation consisted of the following three phases: i) a desk review of the project design, baseline and monitoring plan, ii) follow-up interviews with project stakeholders and iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.
This validation report summarizes the findings of the validation.
In summary, it is DNV's opinion that the "Coinbra-Cresciumal Bagasse Cogeneration Project (CCBCP)" project, as described in the revised PDD of 7 November 2005, meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology AM0015. Hence, DNV will request the registration of the "Coinbra-Cresciumal Bagasse Cogeneration Project (CCBCP)" project as a CDM project activity. Prior to the submission of this validation report to the CDM Executive Board, DNV will have to receive the written approval of the DNA of Brazil, including confirmation that the project assists in achieving sustainable development.

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Work carried out by: Tavares Luis Filipe, Cintia Dias		
Work verified by: Michael Lehmann		
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Abbreviations

ANEEL	National Agency Electric Energy
BM	Build margin
BNDES	Brazilian National Bank for Economic and Social Development
CAR	Corrective Action Request
CCBCP	Coinbra-Creciumal Bagasse Cogeneration Project
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CETESB	Environmental Sao Paulo State Agency
CH_4	Methane
CL	Clarification request
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DNV	Det Norske Veritas
DNA	Designated National Authority
ELEKTRO	Electricity company
ELETROBRÁS	Brazilian Public Electric Company
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MVP	Monitoring and Verification Plan
N_2O	Nitrous oxide
NGO	Non-governmental Organisation
ODA	Official Development Assistance
OM	Operating margin
ONS	National Electric System Operator
PDD	Project Design Document
PROINFA	Programme of Incentives to the Alternative Sources of Electric Energy
RSA	Simplified Environmental Report
SMA	Secretaria de Estado do Meio Ambiente, dos Recursos Hídricos e da Habitação
S-SE-CO	South-Southeast-Midwest (one of two regional grids in Brazil)
UNFCCC	United Nations Framework Convention on Climate Change

1 INTRODUCTION

Coinbra-Cresciumal S/A and Econergy Brasil Ltda (Econergy) have commissioned Det Norske Veritas Certification Ltd. (DNV) to validate the "Coinbra-Creciumal Bagasse Cogeneration Project (CCBCP)", at Leme Municipality; São Paulo State, Brazil.

This report summarises the findings of the validation of the project, performed on the basis of UNFCCC and host Party criteria for CDM projects, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation team consists of the following personnel:

Mr. Luis Filipe Tavares	DNV Rio de Janeiro	Team leader
Ms. Cintia Dias	DNV Rio de Janeiro	CDM auditor
Mr. Michael Lehmann	DNV Oslo	Energy sector expert, Internal verifier

1.1 Validation Objective

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, and the project's compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against Kyoto Protocol criteria for the CDM, the CDM rules and modalities as agreed in the Marrakech Accords and relevant decisions by the CDM Executive Board. The validation team has employed, based on the recommendations in the Validation and Verification Manual /4/ a risk-based approach, 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 project participants. However, stated requests for clarifications and corrective actions may provide input for improvement of the project design.

1.3 Coimbra-Cresciumal Bagasse Cogeneration Project

The "Coinbra-Cresciumal Bagasse Cogeneration Project (CCBCP)", started operation on 10 July 2003. The project involves the improvement of the energy efficiency and the increase of the cogeneration capacity at the Coinbra-Cresciumal S/A sugarcane mill at Leme, São Paulo State. Through the project, the mill was able to supply excess electricity to the grid. Emission reductions are claimed from displacing grid electricity with excess electricity generated by the mill and supplied to the South-Southeast and Midwest (S-SE-CO) subsystem of the Brazilian grid.

The estimated amount of GHG emission reduction from the project is 127 209 tCO_2e during the first renewable 7years crediting period (with the potential of being renewed twice), resulting in estimated average annual emission reductions of 18 172 tCO_2e.

2 METHODOLOGY

The validation consisted of the following three phases:

I a desk review of the project design, baseline and monitoring plan;
II follow-up interviews with project stakeholders;
III the resolution of outstanding issues and the issuance of the final validation report and opinion.

In order to ensure transparency, a validation protocol was customised for the project, according to the Validation and Verification Manual /4/. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

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

The validation protocol consists of three tables. The different columns in these tables are described in Figure 1.

The completed validation protocol for the "Coinbra-Cresciumal Bagasse Cogeneration Project (CCBCP)" is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of validation protocol criteria or where a risk to the fulfilment of project objectives is identified. *Corrective Action Requests* (CAR) are 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 certified.

The term request for *Clarification* (CL) may be used where additional information is needed to fully clarify an issue.

Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities			
Requirement	***Reference***	***Conclusion***	***Cross reference***
The requirements the project must meet.	*Gives reference to the legislation or agreement where the requirement is found.*	*This is either acceptable based on evidence provided (**OK**), a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements or a request for **Clarification (CL)** where further clarifications are needed.*	*Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.*

Validation Protocol Table 2: Requirement Checklist				
Checklist Question	***Reference***	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	*Gives reference to documents where the answer to the checklist question or item is found.*	*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 (**OK**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below).A request for **Clarification (CL)** is used when the validation team has identified a need for further clarification.*

Validation Protocol Table 3: Resolution of Corrective Action Requests and Requests for Clarification			
Draft report corrective action requests and requests for clarifications	***Ref. to Table 2***	***Summary of project participants' response***	***Final conclusion***
If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	*Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification Request is explained.*	*The responses given by the project participants during the communications with the validation team should be summarised in this section.*	*This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".*

Figure 1 Validation protocol tables

2.1 Review of Documents

The Project Design Document (PDD) /1/ of 13 July 2005 submitted by Coinbra-Cresciumal S/A and Econergy Brasil Ltd. on 25 July 2005 was assessed by DNV. Moreover, a revised version of the PDD /1/ dated 07 November 2005 which was submitted to address DNV's initial validation findings was assessed by DNV. In addition, spreadsheets containing detailed calculations for the combined margin emission coefficient /3/ which is applied by the project were assessed.

Other documents, such as the environmental licences and licence requirements as well as the letters sent to local stakeholders, were reviewed during the follow-up interviews in order to ensure the accuracy of the provided information

2.2 Follow-up Interviews

On 14 November 2005 DNV performed interviews with a representative of Ecoinvest.
The main issues were:

- Environment impacts & their control
- Environment licenses conditioning compliance;
- Local Stakeholders invitation to comments;
- Cogeneration systems;
- Calibration requirements;
- Quality procedures; and
- The possibility of leakage due to a historical practice of selling the bagasse.

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve any outstanding issues, which need to be clarified for DNV's positive conclusion on the project design.

The initial validation of the project identified 04 (four) requests for *Clarification*. These were presented to the project participant in the form of a draft validation report (rev. 0 dated 02 August 2005). The project participant's response to DNV's initial findings, which also included the submission of a revised PDD dated 07 November 2005, addressed the raised requests for *Clarifications* to DNV's satisfaction.

To guarantee the transparency of the validation process, the concerns raised and responses given are documented in more detail in the validation protocol in Appendix A.

3 VALIDATION FINDINGS

The findings of the validation of the "Coinbra-Cresciumal Bagasse Cogeneration Project (CCBCP)" are stated in the following sections. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The validation findings relate to the project design as documented and described in the PDD of 07 November 2005.

3.1 Participation Requirements

The project participants are Coinbra-Cresciumal S/A and Econergy Brasil Ltd. The host Party Brazil meets all relevant participation requirements. No Annex I Party is yet identified.

Prior to the submission of the final validation report to the CDM Executive Board, DNV will have to receive the written approval of voluntary participation from the DNA of Brazil, including a confirmation that the project assists it in achieving sustainable development.

3.2 Project Design

The "Coinbra-Cresciumal Bagasse Cogeneration Project (CCBCP)" is a grid-connected renewable energy project activity, displacing grid electricity with electricity generated from renewable sources (bagasse) and thus resulting in the reduction of emissions of greenhouse gases in the energy sector. The project increased the efficiency and capacity of the prevailing bagasse based energy generation at the Coinbra-Cresciumal S/A sugarcane mill, by installing new high-pressure boilers and turbo-generators that will provide 36.6 MW of generation capacity. This will allow for generation of excess electricity to be dispatched to the regional S-SE-CO grid.

The cogeneration project envisages the installation of one steam boiler (66.7 kg/cm^2) and installation of one 15 MW and one 21.6 MW back pressure turbo-generators, as authorized by Resolution ANEEL 601/2002.

The project design engineering reflects good practice through the use of steam Rankine cycle technology for steam and power generation.

A 7-year renewable crediting period is selected (with the potential of being renewed twice), starting on 10 July 2003. The starting date of the project activity is also 10 July 2003. The expected operational lifetime of the project is 25 years.

The project is expected to bring social (employment, health, and labour conditions), environmental (air quality) and economic benefits, thus contributing to sustainable development objectives of the Brazilian Government.

The validation did not reveal any information that indicates that the project can be seen as a diversion of ODA funding towards Brazil.

3.3 Project Baseline

The project applies the approved baseline methodology AM0015 - Bagasse-based cogeneration connected to an electricity grid /5/. The project fulfils the conditions under which AM0015 is

applicable. The baseline scenario is that the current practice continues, i.e., the bagasse is not utilized to generate excess electricity to be supplied to the grid and an equivalent amount of electricity would in the absence of the project activity have been generated by the operation of grid-connected power plants and by the addition of new generation sources. In accordance with AM0015, an electricity baseline emission factor is calculated as a combined margin, consisting of the average of the operating margin (OM) and build margin (BM) emission factors (see section 3.6).

3.4 Additionality

In accordance with AM0015, the additionality of the project is demonstrated through the *Tool for the demonstration and assessment of additionality* /6/, which includes the following steps:

Step 0 -Preliminary screening based on the starting date of the project activity: The starting date of the CDM project activity, i.e. 10 July 2003, falls between 1 January 2000 and the date of the registration of the first CDM project activity (18 November 2004). This starting date was evidenced through the first invoice of electricity sold to the electricity company ELEKTRO.

Documented evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity was provided by means of a Econergy Brasil Ltd. CDM service proposal, issued on 27 December 2002.

Step 1 - Identification of alternatives to the project activity consistent with current laws and regulations: The possible baseline scenarios are: a) Business as usual which means producing electricity and steam for self consumption with low efficiency and b) investing in modifications of boilers and installing a new electricity generator. Both scenarios are in compliance with all applicable legal and regulatory requirements.

Step 2 - Investment analysis: Not applicable (Only Step 3 is selected)

Step 3 - Barrier analysis: Technological barriers, institutional and political barriers, economic and investment barriers and cultural barriers are presented in the PDD:

a) *Technological barriers*. The Rankine cycle technology is well known in Brazil and can not be considered a technological barrier, although sugar cane units mainly operate with low-efficiency. However, there is a technological barrier because the project needs to supply energy at a certain quality to the grid which requires better cogeneration technology than generally applied by sugarcane mills.

b) *Institutional and political barriers*. DNV could confirm that the regulatory environment for the electricity sector changes a lot and often in Brazil, resulting in uncertainty for renewable energy generation. The project does not qualify for PROINFA, the Brazilian Programme of Incentives for Alternative Sources of Electric Energy, because it started operation before 2006.

c) *Economic and investment barriers*. DNV was able to confirm the fact that the revenues from selling electricity represent only around 3% of the core business revenues, i.e. production of sugar and alcohol. Electricity generation thus constitutes a minor part of the project developer's total income. However, DNV was not able to confirm a economic and investment barrier because Coinbra-Cresciumal S/A seems to have easy access long-term financing as they have strong securities from their core activity, i.e. production of sugar and alcohol.

d) *Cultural barriers*. DNV was able to confirm that the sugarcane production is different from other energy production and that electricity revenues only constitute a minor part of the project developer's total income. Hence, there are cultural barriers for sugarcane mills to invest in increased cogeneration capacity in order to supply excess electricity to the grid.

Step 4 - Common practice analysis: DNV was able to confirm that the efficient production of energy and heat by sugarcane mills is not common practice in Brazil. Usually the sugarcane mills produce energy inefficiently and do not supply excess electricity to the grid.

Step 5 - Impact of CDM registration: The project participants were able to demonstrate that the sale of CERs will provide the necessary incentives for the project to alleviate the above presented barriers.

Given the above and in particular the institutional and cultural barriers the project faces, it is sufficiently demonstrated that the project is not a likely baseline scenario and that emission reductions are thus additional

3.5 Monitoring Plan

The project applies the approved monitoring methodology AM0015 - Bagasse-based cogeneration connected to an electricity grid /5/.

The monitoring plan for emissions reductions occurring within the project boundary is based on monitoring the amount of electricity supplied to the grid. The reliability of this monitoring parameter is assured through two-party verification of the amount of electricity sold to ELEKTRO (regional electric company) by the Coinbra-Cresciumal S/A sugarcane mill. The baseline grid electricity emission factor is determined *ex-ante* and will only be updated at renewal of the crediting period.

Details of the data to be collected, calibration of measurement instruments, and the frequency of data recording, format and storage location are described. The recording frequency of the data seems appropriate for the project.

The Coinbra-Cresciumal S/A sugarcane mill is responsible for the project management and monitoring and reporting as well as for training of staff in the appropriate monitoring, measurement and reporting techniques.

The monitoring plan is straightforward and no specific procedures beyond the already established QA/QC procedures will be necessary.

3.6 Calculation of GHG Emissions

Baseline emissions due to displacement of electricity are calculated by multiplying the electricity exported by the project activity to the S-SE-CO grid with an ex-ante determined baseline grid emissions factor. The project is not expected to result in GHG emissions due to the use of a renewable energy source (bagasse) for electricity generation. According to the chosen methodology, the only potential source of leakage could come from organizations that used to buy bagasse from the sugarcane mill. It was confirmed by Coinbra-Cresciumal S/A that there was no company which used to buy bagasse from Coinbra-Cresciumal S/A, prior to the implementation of the project.

The emission reduction calculations have been presented in tabular form, the energy for internal consumption as well as the energy to be delivered to the grid, the operating hours per year and months in which electricity is produced have been clearly documented.

The system boundary for the grid electricity system affected by the project is defined as the South-Southeast and Midwest (S-SE-CO) subsystem of the Brazilian grid. The combined margin emission coefficient for the S-SE-CO grid is determined *ex-ante* in accordance with AM00015 /3/. The calculations were based on electricity generation data provided by the Brazilian Electricity Agency (ANEEL) and the National Electricity System Operator (ONS) for the electricity generated in the South-Southeast-Midwest (S-SE-CO) grid in the years 2002-2004. Data for the years 2002-2004 are the most recent statistics available and the data was verified against the data published on the ONS website.

The ONS dataset does not include power plants that dispatch locally. However, it is justified to only include plants dispatched by ONS although they only represent about 80% of the total installed capacity. Data for the remaining plants is not publicly available as these plants operate either based on power purchase agreements which are not under control of the dispatch authority or they are located in non-interconnected systems to which ONS has no access. Hence, these plants are not likely to be affected by a CDM project and the power plants dispatched by ONS are thus representative for the operating margin.

The simple-adjusted operating margin (OM) emission coefficient is calculated to be 0.4310 tCO_2e/MWh (applying an average λ of 0.5135) and the build margin (BM) emission coefficient is 0.1256 tCO_2e/MWh, resulting in a combined margin emission coefficient of 0.2783 tCO_2e/MWh (weighted average of the build and operating margin).

The build margin emission coefficient calculated for only power plants dispatched by ONS is 0.0937 tCO_2e/MWh and thus more conservative than the emission coefficient of the OECD and IEA information paper (0.569 tCO_2e/MWh) /7/ or the combination of IEA and ONS data (0.205 tCO_2e/MWh).

It is recognised that in the absence of actual fuel consumption data, the calculated plant specific emission coefficients are sensitive to the assumed plant efficiency for each plant. Nonetheless, the applied average plant efficiencies for different power plant types established in the IEA study on the Brazilian grid /7/ are deemed to represent the best data that is currently available.

The λ was calculated by interpolating daily dispatch data for thermal power plants and daily dispatch data for hydropower plants based on data provided by ONS for the years 2002 to 2004. The λ calculations were transparently presented in spreadsheets /3/ submitted to and assessed by DNV. The selected approach for calculating λ is in accordance with AM0015.

3.7 Environmental Impacts

The PDD does not identify/address any environmental impact, which is reasonable due to the nature of the project.

Coinbra-Cresciumal S/A has been granted a Temporary Environmental Operating License No. 43003240 (21/10/2002) by the state environmental agency (CETESB), which included the cogeneration unit. Coinbra-Cresciumal S/A requested the renewal of the Operating License on 22 November 2004.

3.8 Comments by Local Stakeholders

Local stakeholders were invited to comment on the project in accordance with the requirements of Resolution 1 of the Brazilian DNA. Comments by local stakeholders, such as the Municipal Government, the state and municipal agencies, the Brazilian forum of NGOs, neighbouring communities and the office of the attorney general, were invited. The letters sent to the local stakeholders were verified during the follow up interviews. No comments were received.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

DNV published the PDD of 13 July 2005 on the DNV Climate Change web site (http://www.dnv.com/certification/ClimateChange) and Parties, stakeholders and NGOs were through the UNFCCC CDM web site invited to provide comments during a 30 days period from 26 July 2005 to 24 August 2005. No comments were received.

5 VALIDATION OPINION

Det Norske Veritas Certification Ltd. (DNV) has performed a validation of the "Coinbra-Cresciumal Bagasse Cogeneration Project (CCBCP)" at Leme Municipality, São Paulo state, Brazil. The validation was performed on the basis of UNFCCC criteria for CDM project activities and relevant Brazilian criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The project participants are Coinbra-Cresciumal S/A and Econergy Brasil Ltd. of Brazil. The host Party Brazil meets all relevant participation requirements. No participating Annex I Party is yet identified.

The project involves an increase of the bagasse cogeneration capacity at the Coinbra-Cresciumal S/A sugar cane mill. With the implementation of this project, the mill is able to sell excess electricity to the regional South-Southeast-Midwest (S-SE-CO) grid, avoiding thus the dispatch of the same amount of electricity partly generated by thermal power plants supplying electricity to that grid.

The baseline scenario is that the current practice continues, i.e. the bagasse is not utilized to generate excess electricity to be supplied to the grid and an equivalent amount of electricity would in the absence of the project activity have been generated by the operation of grid-connected power plants and by the addition of new generation sources.

By promoting renewable energy, the project is in line with the current sustainable development priorities of Brazil.

The project applies the approved baseline and monitoring methodology AM0015, i.e. "Bagasse-based cogeneration connected to an electricity grid". The baseline methodology has been applied correctly and the assumptions made for the selected baseline scenario are sound. It is sufficiently demonstrated that the project is not a likely baseline scenario and that emission reductions attributable to the project are additional to any that would occur in the absence of the project activity.

A combined margin emission coefficient of 0.2783 tCO_2e/MWh is calculated ex-ante in accordance with AM0015, i.e. the average of the approximate operating margin and the build margin. The determination of this combined margin emission coefficient is based on actual electricity generation data provided by the National Electricity System Operator (ONS) for the years 2002- 2004 for the South-Southeast-Midwest grid.

The monitoring methodology AM0015 has been applied correctly. The monitoring plan sufficiently specifies the monitoring requirements of the main project indicators.

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project results in reductions of CO_2 emissions that are real, measurable and give long-term benefits to the mitigation of climate change. Given that the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

Local stakeholder comments were invited according to the Brazilian DNA Resolution 1. No comments were received. Public stakeholder input has also been invited via the UNFCCC web-site. No comments were received.

In summary, it is DNV's opinion that the "Coinbra-Cresciumal Bagasse Cogeneration Project (CCBCP)*" project, as described in the revised and resubmitted project design document of 07 November 2005, meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology AM0015. Hence, DNV will request the registration of the "Coinbra-Cresciumal Bagasse Cogeneration Project* (CCBCP)*" project as a CDM project activity.*

Prior to the submission of this validation report to the CDM Executive Board, DNV will have to receive the written approval of the DNA of Brazil, including confirmation that the project assists in achieving sustainable development.

REFERENCES

Documents provided by the project proponent that relate directly to the project:

/1/ Econergy: *Project Design Document for the Coinbra-Cresciumal Bagasse Cogeneration Project (CFBCP).* Version 1 of 13 July 2005.

/2/ Econergy: *Project Design Document for the Coinbra-Cresciumal Bagasse Cogeneration Project (CFBCP).* Version 2 of 07 November 2005.

/3/ Spreadsheets for the calculation of the combined margin emission Coefficient (ONS-Emission factors SSECO 2002-2004-2005.09.23.xls).

Background documents related to the design and/or methodologies employed in the design or other reference documents:

/4/ International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF): *Validation and Verification Manual*. http://www.vvmanual.info

/5/ Approved Baseline and Monitoring Methodology AM0015: *Bagasse-based cogeneration connected to an electricity grid.* Version 01 of 22 September 2004.

/6/ CDM EB: *Tool for the demonstration and assessment of additionality*, EB 16 Report, Annex 1.

/7/ Bosi, M., A. Laurence, P. Maldonado, R. Schaeffer, A. F. Simoes, H. Winkler and J.-M. Lukamba: *Road testing baselines for greenhouse gas mitigation projects in the electric power sector*. OECD and IEA information paper, October 2002.

Persons interviewed during the validation, or persons contributed with other information that are not included in the documents listed above:

/8/ David Freire da Costa - Econergy

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APPENDIX A

CDM VALIDATION PROTOCOL

Table 1 Mandatory Requirements for Clean Development Mechanism (CDM) Project Activities

Requirement	Reference	Conclusion	Cross Reference / Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art.12.2	OK	Table 2, Section E.4.1
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, CDM Modalities and Procedures §40a	--	Table 2, Section A.3 Prior to the submission of this validation report to the CDM Executive Board, DNV will have to receive the written confirmation by the DNA of Brazil that the project assists in achieving sustainable development.
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art.12.2.	OK	Table 2, Section E.4.1
4. The project shall have the written approval of voluntary participation from the designated national authority of each party involved	Kyoto Protocol Art. 12.5a, CDM Modalities and Procedures §40a	--	Prior to the submission of this validation report to the CDM Executive Board, DNV will have to receive the written approval of voluntary participation from the DNA of the participating Parties.
5. The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section E
6. Reduction in GHG emissions shall be additional to any that would occur in absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Kyoto Protocol Art. 12.5c, CDM Modalities and Procedures §43	OK	Table 2, Section B.2
7. In case public funding from Parties included in Annex I is used for the project activity, these Parties shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of these Parties.	Decision 17/CP.7, CDM Modalities and Procedures Appendix B, § 2	OK	No public funding is used and the validation did not reveal any information that indicates that the project can be seen as a diversion of ODA funding towards Brazil.

Requirement	Reference	Conclusion	Cross Reference / Comment
8. Parties participating in the CDM shall designate a national authority for the CDM	CDM Modalities and Procedures §29	OK	The Brazilian designated national authority for the CDM is the Comissão Interministerial de Mudança Global do Clima.
9. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol	CDM Modalities §30/31a	OK	Brazil has ratified the Kyoto Protocol on 23 August 2002.
10. The participating Annex I Party's assigned amount shall have been calculated and recorded	CDM Modalities and Procedures §31b	Not applicable	No participating Annex I Party is yet identified.
11. The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7	CDM Modalities and Procedures §31b	Not applicable	No participating Annex I Party is yet identified.
12. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received	CDM Modalities and Procedures §37b	OK	Table 2, Section G
13. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out.	CDM Modalities and Procedures §37c	OK	Table 2, Section F
14. Baseline and monitoring methodology shall be previously approved by the CDM Executive Board	CDM Modalities and Procedures §37e	OK	Table 2, Section B.1.1 and D.1.1
15. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP	CDM Modalities and Procedures §37f	OK	Table 2, Section D
16. 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	CDM Modalities and Procedures §40	OK	The PDD of 13 July 2005 was published on climatechange.dnv.com and Parties, stakeholders and NGOs were through the UNFCCC CDM web site invited to provide comments during a 30 days period from 26

Requirement	Reference	Conclusion	Cross Reference / Comment
			July 2005 to 24 August 2005. No comments were received..
17. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	CDM Modalities and Procedures §45c,d	OK	Table 2, Section B.2
18. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majeure	CDM Modalities and Procedures §47	OK	Table 2, Section B.2
19. The project design document shall be in conformance with the UNFCCC CDM-PDD format	CDM Modalities and Procedures Appendix B, EB Decision	OK	PDD is in accordance with CDM-PDD (version 02 of 1 July 2004).

Table 2 Requirements Checklist

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
A. General Description of Project Activity *The project design is assessed.*					
A.1. Project Boundaries *Project Boundaries are the limits and borders defining the GHG emission reduction project.*					
A.1.1. Are the project's spatial (geographical) boundaries clearly defined?	/1/	DR	The "Coinbra-Cresciumal Bagasse Cogeneration Project" is located on the premises of the Coinbra-Cresciumal sugarcane mill at Leme municipality, São Paulo State.		OK
A.1.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	/1/	DR	Yes. The project boundary is the site where the cogeneration facilities are located (Coinbra-Cresciumal). The system boundary for the determination of the combined margin emission factor is the South-Southeast and Midwest (S-SE-CO) subsystem of the Brazilian grid, which is the grid electricity system affected by the project.		OK
A.2. Technology to be employed *Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The validator should ensure that environmentally safe and sound technology and know-how is used.*					
A.2.1. Does the project design engineering reflect	/1/	DR	The project design engineering reflects		OK

* MoV = Means of Verification, DR= Document Review, I= Interview

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
current good practices?			good practice.		
A.2.2. 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	The technology used is the standard steam Rankine cycle technology adopted worldwide and available in Brazil. The project also involves the expansion of the steam generating capacities of the sugarcane mill cogeneration system.		OK
A.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	/1/	DR	The project is unlikely to be replaced by other more efficient technologies, at least within the first 7 year crediting period.		OK
A.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	/1/	DR	The project will require minimal additional training for project maintenance since the retrofit is only a modification of the currently used system. Moreover, support from the manufacturer is also assured.		OK
A.2.5. Does the project make provisions for meeting training and maintenance needs?	/1/	DR	The project documentation does not detail provisions for training or maintenance. However, due to the reasons indicated in A.2.4, this is reasonable.		OK
A.3. Contribution to Sustainable Development *The project's contribution to sustainable development is assessed.*					
A.3.1. Is the project in line with relevant legislation and plans in the host country?	/1/	DR	The project is authorized by ANEEL (Rel 601/2002). A temporary environmental operation licence was issued. This license included some requirements. CCBCP addressed these requirements and applies for an Operation Licence. DNV request further information concerning the requirements the project has to meet in order to obtain an Operation Licence.	~~CL 1:~~	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
A.3.2. Is the project in line with host-country specific CDM requirements?	/1/	DR	Local stakeholders, such as the Municipal Government, the state and municipal agencies, the Brazilian forum of NGOs, neighbouring communities and the office of the attorney general, were invited to comment on the project, in accordance with the requirements of Resolution 1 of the Brazilian DNA		OK
A.3.3. Is the project in line with sustainable development policies of the host country?	/1/	DR	Prior to the submission of the final validation report to the CDM Executive Board, DNV will have to receive the written confirmation that the project assists it in achieving sustainable development.		OK
A.3.4. Will the project create other environmental or social benefits than GHG emission reductions?	/1/	DR	The project is expected to bring social (employment), environmental (fauna and flora preservation) and economic benefits, thus contributing to the sustainable development objectives of the Brazilian Government.		OK
B. Project Baseline *The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.*					
B.1. Baseline Methodology *It is assessed whether the project applies an appropriate baseline methodology.*					
B.1.1. Is the baseline methodology previously approved by the CDM Executive Board?	/1/	DR	The project applies the approved baseline methodology AM0015 - Bagasse-based cogeneration connected to an electricity		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			grid.		
B.1.2. Is the baseline methodology the one deemed most applicable for this project and is the appropriateness justified?	/1/	DR	Yes, the project fulfils the conditions under which AM0015 is applicable. The project uses: a) only the bagasse from the same facility where the project activity is implemented, b) the project is not foreseen to be implemented by the public sector, c) the project will not increase the bagasse production and d) the bagasse to be used will not be stored for more than one year.		OK
B.2. Baseline Determination *The choice of baseline will be validated with focus on whether the baseline is a likely scenario, whether the project itself is not a likely baseline scenario, and whether the baseline is complete and transparent.*					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	/1/ /3/	DR	The simple-adjusted operating margin (OM) emission coefficient is calculated to be 0.4310 tCO_2e/MWh (applying an average λ of 0.4961) and build margin (BM) emission coefficient of 0.1256 tCO_2e/MWh, resulting in a combined margin emission coefficient of 0.2783 tCO_2e/MWh (weighted average of the build and operating margin). The emission coefficient calculations were transparently presented in spreadsheets submitted to and verified by DNV.		OK
B.2.2. Has the baseline been determined using conservative assumptions where possible?	/1/	DR	The baseline emission calculations are according to AM0015. It is justified to only include plants dispatched by ONS although they only		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			represent about 80% of the total installed capacity. Data for the remaining plants is not publicly available as these plants operate either based on power purchase agreements which are not under control of the dispatch authority, or they are located in non-interconnected systems to which ONS has no access. Hence, these plants are not likely to be affected by a CDM project and the power plants dispatched by ONS are thus representative for the operating margin. The build margin emission coefficient is correctly calculated considering the 20% capacity additions of the most recently installed plants dispatched by ONS. Even though the S-SE-CO grid is connected with the North-Northeast grid, the energy flow between these grids is heavily limited by the transmission lines capacity. It is hence appropriate to consider the S-SE-CO grid for the purpose of determining the BM and OM emission coefficient and consider imports from the North-Northeast grid at 0 tCO_2/MWh in accordance with AM0015. It is recognised that in the absence of actual fuel consumption data, the calculated plant specific emission coefficients are sensitive to the assumed plant efficiency for each plant. Nonetheless, the applied average plant efficiencies for different power plant types established in the IEA study on the Brazilian grid is deemed to represent the		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			best data that is currently available.		
B.2.3. Has the baseline been established on a project-specific basis?	/1/	DR	See B.2.1		OK
B.2.4. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/1/	DR	Yes. All the national and/or sectoral policies implemented during the initial phase were considered. PROINFA (Programme of Incentives to the Alternative Sources of Electric Energy) was only implemented in 2004 and is applicable to projects to be installed from January to December of 2006.		OK
B.2.5. Is the baseline determination compatible with the available data?	/1/	DR	The λ factor was calculated by interpolating hourly dispatch data for thermal power plants and hourly dispatch data for hydropower plants, based on data provided by ONS for the years 2001 to 2003.		OK
B.2.6. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	/1/	DR	See B.2.1		OK
B.2.7. Is it demonstrated/justified that the project activity itself is not a likely baseline scenario?	/1/	DR	In accordance with AM0015, the additionality of the project is demonstrated through the "Tool for the demonstration and assessment of additionality", which includes the following steps: Step 0 -Preliminary screening based on the starting date of the project activity: The PDD defines 05 April 2003 as the starting date of the project activity. However, the ANNEL Permit 927/2003 indicates 1 December 2003 as the starting date. Nonetheless, the starting date of the CDM project activity, i.e. April or December 2003, falls between 1	~~CL 2:~~	OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			January 2000 and the date of the registration of the first CDM project activity (18 November 2004). Evidence for the project's starting date should be presented (CL). Also, sufficient evidence should be presented that the Coinbra-Cresciumal sugar mill seriously considered the CDM in the decision to proceed with the project. Step 1 - Identification of alternatives to the project activity consistent with current laws and regulations: The possible baseline scenarios are: a) Business as usual which means producing electricity and steam for self consumption with low efficiency and b) investing in modifications of boilers and installing a new electricity generator. Both scenarios are in compliance with all applicable legal and regulatory requirements. Step 2 - Investment analysis: Not applicable (Only Step 3 is selected) Step 3 - Barrier analysis: Technological barriers, institutional and political barriers, economic and investment barriers and cultural barriers are presented in the PDD. a) Technological barriers. The Rankine cycle technology is well known in Brazil and can not be considered a technological barrier, although sugar cane units mainly operate with low-efficiency. However, there is a technological barrier because the project needs to supply energy at a certain quality to the grid which requires		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			better cogeneration technology than generally applied by sugarcane mills. b) Institutional and political barriers. DNV could confirm that the regulatory environment for the electricity sector changes a lot and often in Brazil, resulting in uncertainty for renewable energy generation. However, the argumentation for this barrier is on a general basis only and DNV requests more information about specific barriers for Coinbra-Cresciumal (CL). c) Economic barriers. DNV was not able to confirm a general economic and investment barrier because sugar cane producers do normally not have problems with securing long-term financing as they have strong securities from their core activity. DNV was able to confirm the fact that the revenues from selling electricity represent only around 3% of the core business revenues, i.e. production of sugar and alcohol. Electricity generation thus constitutes a minor part of the project developer's total income. d) Cultural barriers. DNV was able to confirm that the sugarcane production is different from energy production and that electricity revenues only constitute a very minor part of the project developer's total income. Hence, there are cultural barriers for sugarcane mills to invest in		

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			increased cogeneration capacity in order to supply excess electricity to the grid. Step 4 - Common practice analysis DNV was able to confirm that the efficient production of energy and heat by sugarcane mills is not common practice in Brazil. Usually the sugarcane mills produce energy inefficiently. Step 5 - Impact of CDM registration: The project participants were able to demonstrate that the sale of CERs will provide the necessary incentives for the project to alleviate the above presented barriers.		
B.2.8. Have the major risks to the baseline been identified?	/1/	DR	Yes		OK
B.2.9. Is all literature and sources clearly referenced?	/1/	DR	Yes		OK
C. Duration of the Project/ Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*					
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	/1/	DR	No. The PDD refers to 05 April 2003 as starting date of the project. However, the ANEEL permit 927/03 indicates 1 December 2003 as the starting date. Correct information should be provided	~~CL 2:~~	OK
C.1.2. Is the assumed crediting time clearly defined (renewable crediting period of seven years with two possible renewals or fixed crediting period of 10 years with no renewal)?	/1/	DR	A 7-year crediting period has been chosen.		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
D. Monitoring Plan *The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed ((Blue text contains requirements to be assessed for optional review of monitoring methodology prior to submission and approval by CDM EB).*					
D.1. Monitoring Methodology *It is assessed whether the project applies an appropriate baseline methodology.*					
D.1.1. Is the monitoring methodology previously approved by the CDM Executive Board?	/1/	DR	The project applies the approved monitoring methodology AM0015, "Bagasse-based cogeneration connected to an electricity grid".		OK
D.1.2. Is the monitoring methodology applicable for this project and is the appropriateness justified?	/1/	DR	Yes, the monitoring methodology is applicable as established in AM0015.		OK
D.1.3. Does the monitoring methodology reflect good monitoring and reporting practices?	/1/	DR	The electricity supplied to the grid will be monitored by an energy meter at the plant (measuring electricity exports to the grid). Receipts of sales will be kept for 2 years after the end of crediting period.		OK
D.1.4. Is the discussion and selection of the monitoring methodology transparent?	/1/	DR	Yes, the monitoring methodology is in line with the applicability requirements of AM0015.		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
D.2. Monitoring of Project Emissions *It is established whether the monitoring plan provides for reliable and complete project emission data over time.*					
D.2.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	/1/	DR	Project emissions are considered zero in line with AM0015 and IPCC guidelines, which stipulate that biomass combustion is assumed to equal its re-growth, i.e. to be climate neutral.		OK
D.3. Monitoring of Leakage *It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.*					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/	DR	According to the chosen methodology, the only potential source of leakage is from organizations that used to buy bagasse from the sugarcane mill prior to the project's implementation. CCBCP did not use to sell bagasse prior to project implementation. Therefore, no monitoring of leakage is necessary.		OK
D.4. Monitoring of Baseline Emissions *It is established whether the monitoring plan provides for reliable and complete project emission data over time.*					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining baseline emissions during the crediting period?	/1/	DR	The CO_2 emission factor of the grid is determined ex-ante and hence no data needs to be collected in this regard.		OK

* MoV = Means of Verification, DR= Document Review, I= Interview

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	/1/	DR	See D.4.1		OK
D.4.3. Will it be possible to monitor the specified baseline indicators?	/1/	DR	See D.4.1		OK
D.5. Monitoring of Sustainable Development Indicators/ Environmental Impacts *It is checked that choices of indicators are reasonable and complete to monitor sustainable performance over time.*					
D.5.1. Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	/1/	DR	Neither AM00015 nor Resolution 1 of the Brazilian DNA require the monitoring of social nor environmental indicators.		OK
D.6. Project Management Planning *It is checked that project implementation is properly prepared for and that critical arrangements are addressed.*					
D.6.1. Is the authority and responsibility of project management clearly described?	/1/	DR	Project management authority and responsibility are described in the operational and management structure and is considered appropriate.		OK
D.6.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	/1/	DR	Yes. Amount of energy sold will be obtained through invoices issued by ELEKTRO (regional electric company) and monitoring, registration and review are the responsibility of Coinbra-Cresciumal sugarcane mill.		OK
D.6.3. Are procedures identified for training of monitoring personnel?	/1/	DR	See D.6.1		OK
D.6.4. Are procedures identified for emergency preparedness for cases where emergencies can	/1/	DR	See D.6.1		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
cause unintended emissions?					
D.6.5. Are procedures identified for calibration of monitoring equipment?	/1/	DR	The electric company, according to the law, will carry out the periodical calibration of the electricity meter.		OK
D.6.6. Are procedures identified for maintenance of monitoring equipment and installations?	/1/	DR	See D.6.1		OK
D.6.7. Are procedures identified for monitoring, measurements and reporting?	/1/	DR	See D.6.1		OK
D.6.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	/1/	DR	See D.6.1		OK
D.6.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	/1/	DR	See D.6.1		OK
D.6.10. Are procedures identified for review of reported results/data?	/1/	DR	See D.6.1		OK
D.6.11. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	/1/	DR	See D.6.1		OK
D.6.12. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	/1/	DR	See D.6.1		OK
D.6.13. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	/1/	DR	See D.6.1		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
E. Calculation of GHG Emissions by Source *It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.*					
E.1. Predicted Project GHG Emissions *The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.*					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	/1/	DR	Project emissions are considered zero in line with AM0015 and IPCC guidelines, which stipulate that biomass combustion is assumed to equal its re-growth, i.e. to be climate neutral.		OK
E.2. Leakage *It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed.*					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?	/1/	DR	The only potential source of leakage is from organizations that used to buy bagasse from the sugarcane mill prior to the cogeneration project's implementation. Coinbra-Cresciumal did not use to sell bagasse prior to project implementation.		ok

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
E.3. Baseline Emissions *The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.*					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	/1/ /3/	DR	The simple-adjusted operating margin (OM) emission coefficient is calculated to be 0.4310 tCO_2e/MWh (applying an average λ of 0.4961) and build margin (BM) emission coefficient of 0.1256 tCO_2e/MWh, resulting in a combined margin emission coefficient of 0.2783 tCO_2e/MWh (weighted average of the build and operating margin). The emission coefficient calculations were transparently presented in spreadsheets submitted to and verified by DNV.		OK
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	/1/	DR	Yes. The project system's boundary is limited to the Coinbra-Cresciumal cogeneration plant. The South-Southeast and Midwest section of the interconnected subsystem of the Brazilian grid, to which the project is connected, is the selected system boundary for determining the baseline grid emission factor		OK
E.3.3. Are the GHG calculations documented in a complete and transparent manner?	/1/	DR	See E.3.1		OK
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	/1/	DR	See E.3.2		OK
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the documentation?	/1/	DR	See E.3.1		OK
E.3.6. Have the project baseline(s) and the project	/1/	DR	For project baseline, see E.3.1.		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
emissions been determined using the same appropriate methodology and conservative assumptions?			For project emissions, see E.1.1.		
E.4.Emission Reductions Validation of baseline GHG emissions will focus on methodology transparency and completeness in emission estimations.					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	/1//2/	DR	The project is expected to reduce CO_2 emissions to the extent of 127 209 tCO_2e during the first 7 year crediting period. However, the calculation of estimated emission reductions needs clarifications with regard to the starting date of the project.	~~CL 3:~~	OK
F. Environmental Impacts *Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the validator.*					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	/1/	DR	The project applied for an Operational Environment License through submission of RAP (Preliminary Environment Report) to DAIA/CETESB. A Temporary Environmental Operation License was issued with some requirements. Coinbra-Cresciumal addressed these requirements and applied to have an Operation Licence. DNV requests further information concerning the requirements the project has to meet in order to obtain an Operation Licence.	~~CL 1:~~	OK
F.1.2. Are there any Host Party requirements for an	/1/	DR	See F.1.1		OK

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
Environmental Impact Assessment (EIA), and if yes, is an EIA approved?					
F.1.3. Will the project create any adverse environmental effects?	/1/	DR	See F.1.1		OK
F.1.4. Are transboundary environmental impacts considered in the analysis?	/1/	DR	See F.1.1		OK
F.1.5. Have identified environmental impacts been addressed in the project design?	/1/	DR	See F.1.1		OK
F.1.6. Does the project comply with environmental legislation in the host country?	/1/	DR	See F.1.1		OK
G. Stakeholder Comments *The validator should ensure that a stakeholder comments have been invited and that due account has been taken of any comments received.*					
G.1.1. Have relevant stakeholders been consulted?	/1/	DR	The Coinbra-Cresciumal sugarcane mill invited several local organizations and institutions to provide comments, according to the Resolution 1 of the Brazilian DNA.		OK
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	/1/	DR	Letters have been sent to local stakeholders in line with Resolution 1. DNV requests evidence of these letters.	~~CL 4~~	OK
G.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/	DR	Yes, see G.1.1		OK
G.1.4. Is a summary of the stakeholder comments received provided?	/1/	DR	No comments were received.		OK
G.1.5. Has due account been taken of any stakeholder comments received?	/1/	DR	NA		OK

Table 3 Resolution of Corrective Action and Clarification Requests

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
CL 1: DNV requests further information concerning the requirements the project has to meet in order to obtain an Operation Licence.	A.3.1 F.1.1	The Temporary Environmental Operation Licence and its requirements were sent attached to the Protocol. Coinbra-Cresciumal has complied with these requirements and applied for the Operation Licence on November 22, 2004. But it hasn't been issued by CETESB yet.	The provided complementary information documents the project's compliance with the requirements of the Temporary Environmental Operation Licence. This CL is therefore closed
CL 2: Evidence for the project's starting date of should be presented. Also, sufficient evidence should be presented that Coinbra-Cresciumal Sugarcane mill seriously considered the CDM in the decision to proceed with the project has been presented. DNV requests a clarification on the assessment of the barriers for Coinbra-Cresciumal (CL). The argumentation for the presented technological barrier is on a general basis only and DNV requests more information about specific barriers for Coinbra-Cresciuma.	B.2.7 C.1.1	Although the starting date of the CDM project activity is defined on 1st December 2003 by ANEEL, the project had started in July 10th, 2003, but it was a test phase, as we can notice according to the electricity production data in 2003: Electric energy to be sold to CPFL, MWh/year = 17.033 (2003); 58.936 (2004); 71.285 (2005) and 77.460 (for 2006 to 2009). The evidence for the project´s starting date is the first energy invoice emitted by Cresciumal to ELEKTRO on July 10th, 2003. The invoice will be attached to the protocol. Coinbra-Cresciumal sugarcane mill has known about the CDM possibilities since year 2000, when it started considering expanding its cogeneration facilities. One clear evidence is the	The provided complementary information (including the electricity invoice #1752 issued by Coinbra-Cresciumal to Eletro Eletricidade e Serviços S.A on 10 July 2003) evidenced that the starting date of the project is 10 July 2005. With respect to the evidence that Coinbra-Cresciumal sugarcane mill seriously considered the CDM in the decision to proceed with the project, the provided proposal for CDM services issued by Econergy on 27 December 2002 was considered satisfactory. This CL is therefore closed.

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
		solicitation of a proposal for a CDM project development to Econergy Brasil. The formal proposal was sent on December 27th, 2002, from Econergy Brasil, to Mr. Adrian G. Isman from Coinbra-Cresciumal Mill. Mr. Anselmo Lopes Rodrigues, director of the mill, returned a fax on April 23th, 2003, accepting the proposal. The proposal will be sent attached to the protocol. Other specific institutional, political and economic barriers for Coinbra-Cresciumal were added in PDD.	
CL 3: The project is expected to reduce CO_2 emissions to the extent of 121 131 tCO_2e during the first 7 year crediting period. However, the calculation of estimated emission reductions needs clarifications with regard to the starting date of the project.	E.4.1	The project is expected to reduce 127.209 tCO_2e during the first 7 year crediting period. The calculation considered the start up date as July 10th, 2003, as explained in CL 2 above.	The provided clarifications address DNV's request for clarification. This CL is therefore closed.
CL 4 Letters have been sent to local stakeholders in line with Resolution 1. DNV requests evidences of these letters.	G.1.2	Letters will be sent attached to the protocol.	The letters sent to local stakeholders were verified. This CL is therefore closed.

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