VALIDATION REPORT
COSIPAR

VALIDATION OF THE COSIPAR RENEWABLE ELECTRICITY GENERATION PROJECT

REPORT NO. BVQI/BRA/2004-001

REVISION NO. 12

BUREAU VERITAS QUALITY INTERNATIONAL

VALIDATION REPORT

Date of first issue: February 14th, 2005	Project No.: 53229
Approved by: Márcio Viegas Global Product Manager	Organisational unit: BVQI Holdings
Client: Cosipar	Client ref.: Luis Guilherme Monteiro

Summary:
Bureau Veritas Quality International (BVQI) has made a validation of the Cosipar Renewable Electricity Generation Project (hereafter called "the project") located in Marabá, State of Pará, 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 rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan (October to December 2004); ii) follow-up interviews with project stakeholders (December 2004); iii) the resolution of outstanding issues and the issuance of the final validation report and opinion (January to December 2005);.iv) the resolution of outstanding issues raised by the CDM Executive Board during registration process(August 2006)The overall validation, from Contract Review to Verification Report & Opinion, was conducted using internal procedures (BMS, September 2003) which were audited by the UN CDM Accreditation Team in December 2004.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document (August 2006).

In summary, it is BVQI's opinion that the project correctly applies the simplified baseline and monitoring methodology AMS.I-D and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Report No.: BVQI/BRA/2004-001	Subject Group: GHG/CDM	
Report title: Cosipar Renewable Electricity Generation Project		
Work carried out by: Flávio Gomes da Silva, Hubmaier Lucas Andrade, Jay Wintergreen, Ricardo Fontenele, Tod Delaney		
Work verified by: Márcio Viegas		
Date of this revision: 27th,Ago 25th 2006	Rev. No.: 12	Number of pages: 56

Indexing terms

☒ No distribution without permission from the Client or responsible organisational unit

☐ Limited distribution

☐ Unrestricted distribution

Abbreviations

ANEEL	Agência Nacional de Energia Elétrica (Electricity National Agency)
ASICA	Associação das Siderúrgicas de Carajás
BVQI	Bureau Veritas Quality International
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CELPA	Centrais Elétricas do Pará
CER	Certified Emission Reductions
CH_4	Methane
CL	Clarification Request
CO	Carbon Monoxide
CO_2	Carbon Dioxide
DR	Document Review
GHG	Green House Gas(es)
I	Interview
IETA	International Emissions Trading Association
MoV	Means of Verification
MP	Monitoring Plan
NGO	Non Government Organisation
N/NE	North and Northeast
PCF	Prototype Carbon Fund
PDD	Project Design Document
UNFCCC	United Nations Framework Convention for Climate Change

Table of Contents *Page*

1 INTRODUCTION

Cosipar (hereafter called “the client”) has commissioned Bureau Veritas Quality International (BVQI) to validate its Renewable Electricity Generation Project (hereafter called “the project”) at Marabá, State of Pará, Brazil.

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

1.1 Objective

The validation serves as a design verification and is a requirement of all Client projects. The purpose of a validation is to have an independent third party assessment 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 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).

UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities as agreed in the Bonn Agreement and the Marrakech Accords

1.2 Scope

The validation scope 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. BVQI has, based on the recommendations in the Validation and Verification Manual (IETA/PCF, r. 01, 2003), 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.

1.3 GHG Project Description

The project activity consists in the expansion of a 4 MW to 10 MW thermoelectric plant. Therefore, the project will claim for carbon credits correspondent to 6 MW of installed capacity. The new plant is fired by blast furnace gas to generate part of the electricity required by Cosipar Pig Iron Plant. The only fuel used by the plant will be the blast furnace gas. With the installation of this new thermoelectric, the old facility will only be used as stand-by plant, in case of any emergency. As a consequence of the construction of the plant, there will be a reduced need for electricity supplied from the

grid for the operation of the pig iron plant and, in case of any surplus, this will be sold to the N/NE subsystem of the Brazilian grid.

Currently, Cosipar purchases approximately 53,690 MWh/year from the Centrais Elétricas do Pará (CELPA), however, in the project scenario, 42,768 MWh/year will be supplied by the project activity, thereby decreasing total demand from CELPA to 10,922 MWh/year. Cosipar Pig Iron Plant is located in the municipality of Marabá, in the State of Pará.

Cosipar is a private company producing Basic/Foundry Pig Iron industry that is part of ASICA, an association of pig iron industries located in the Carajás region. The Carajás region includes the states of Maranhão and Pará. It produces a total of 450,000 tonnes of pig iron per year.

Use of the blast furnace gas to generate electricity will not generate additional greenhouse gas (GHG) emissions because in the absence of the project, the blast furnace gas would have continued to be flared (note that some blast furnace gas is used in the baseline scenario to generate 4MW of electricity, the additional gas is flared in the baseline). Since the waste gas would have been flared anyway in absence of project activity, the additional emissions from generation of power by combusting waste gases, in the project activity, is zero. Hence, the project activity is effecting GHG emission reduction by displacing power generation with GHG intensive fossil fuel with that of “zero GHG emission fuel”.Therefore it is assumed that there will be no additional GHG emissions associated with the use of this gas to generate electricity.

1.4 Validation team

The validation team consists of the following personnel:

MSc. Flávio Gomes da Silva	BVQI Brazil	Team Leader, GHG Auditor
MSc. José Fernando F. Sousa	BVQI Brazil	GHG Auditor, expert
MSc. Jay Wintergreen	FirstEnvironment	GHG Auditor, expert
MSc. Hubmaier Lucas Andrade	BVQI Brazil	GHG Auditor
MSc. Márcio Viegas	BVQI Holdings	Internal verifier
MSc. Ricardo Fontenele	BVQI Brazil	GHG Auditor
Dr. Tod Delaney	FirstEnvironment	GHG Auditor, expert

2 METHODOLOGY

The overall validation, from Contract Review to Verification Report & Opinion, was conducted using internal procedures (BMS, September 2003), which were audited by the UN CDM Accreditation Team in December 2004.

In order to ensure transparency, a validation protocol was customised for the project, according to the Validation and Verification Manual (IETA/PCF, r. 01, 2003). 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 four tables. The different columns in these tables are described in Figure 1.
The completed validation protocol is enclosed in Appendix A to this report.

Validation Protocol Table 1: Mandatory Requirements			
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**), or a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Validation report.	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). **Clarification (CL)** is used when the validation team has identified a need for further clarification.

Validation Protocol Table 3: Legal requirements				
Checklist Question	**Reference**	**Means of verification (MoV)**	**Comment**	**Draft and/or Final Conclusion**
The national legal requirements the project must meet.	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). **Clarification (CL)** is used when the validation team has identified a need for further clarification.

Validation Protocol Table 4: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	**Ref. to checklist question in table 2**	**Summary of project owner response**	**Validation 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 Client on other 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) submitted by Cosipar /1/, /2/, /3/, /4/, /5/, /6/,/7/ and additional background documents related to the project design and baseline, i.e. Agenda 21 Brasileira /8/, Resolução Interministerial 01/03 /9/, Appendixes A, B and C of the simplified modalities and procedures for small-scale CDM project activities /10/, /11/, /12/, ANNEX II - Simplified modalities and procedures for small–scale clean development mechanism project activities /13/, Kyoto Protocol /13/, Approved baseline methodologies AM0015 /15/, AMS-I.D /20/, Road-Testing Baselines for Greenhouse Gas Mitigation Projects in the Electric Power Sector /16/, Federal Laws 10.438/02 /17/ and 10.761/03 /18/ Clarifications on Validation Requirements to be Checked by a Designated Operational Entity /19/, were reviewed.

The following documents were used as references to the validation work, in addition to internal BVQI procedures: IETA/PCF – Validation and Verification Manual (v. 03, Dec 2003) /21/; ISO DIS 14064-3 - Greenhouse gases —Part 3:Specification with guidance for the validation and verification of greenhouse gas assertions /22/; ISO DIS 14064-2 - Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements /23/.

To address BVQI corrective action and clarification requests Cosipar revised the PDD and resubmitted it on February, on April, on September, on October and on December 2005. The PDD was also revised to address the issues raised by the CDM Executive Board during registration process

The final validation findings presented in this report relate to the project as described in the PDD on August 2006.

2.2 Follow-up Interviews

In the period from November 17th to 23rd, 2004, BVQI performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the

document review. Representatives of Cosipar were interviewed (see References). The main topics of the interviews are summarised in Table 1.

Table 1 Interview topics

Interviewed organisation	Interview topics
Cosipar	➢ Environmental legal requirements related to the project ➢ Invitation of stakeholders for comments ➢ Generation of new employment ➢ Electricity National Agency (ANEEL) license
EcoSecurities	➢ Project category ➢ Actual reduction of tons of GHG ➢ Investment barriers to the project ➢ Methodology ➢ Origin of data

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification and any other outstanding issues, which needed to be clarified for BVQI positive conclusion on the project design.

The Corrective Action and Clarification Requests raised by BVQI were resolved during communications between the project participants, i.e. Cosipar and EcoSecurities. 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.

Since modifications to the Project Design Document were necessary to resolve BVQI concerns, Cosipar decided to revise the documentation and resubmitted the PDD on April, on September on October and on December 2005. There was another revision of the PDD issued in August 2006 to meet the requirements of the Executive Board raised in the submission of the project to registration. After reviewing the revised and resubmitted project documentation, BVQI issued this final validation report and opinion.

3 VALIDATION FINDINGS

In the following sections the findings of the validation are stated. The validation findings for each validation subject are presented as follows:

1) The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are summarised. A more detailed record of these findings can be found in the Validation Protocol in Appendix A.
2) Where BVQI had identified issues that needed clarification or that represented a risk to the fulfilment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in nine Corrective Action Requests and nine Clarification Requests.

3) Where Clarification or Corrective Action Requests have been issued, the exchanges between Cosipar and BVQI to resolve these Clarification or Corrective Action Requests are summarised.
4) The conclusions for validation subject are presented.

The final validation findings relate to the project design, as documented and described in the revised and resubmitted project design documentation.

3.1 Project Design

The Project will be powered only by blast furnace gas, which is a carbon neutral fuel. The generation of the blast furnace gas is a consequence of the reaction carbon content of charcoal (or other reducing agents) with the oxygen of atmospheric air and of oxygen of Iron oxide, resulting in CO and CO2. The carbon may also react with hydrogen from atmospheric air; resulting in CH4.The main blast furnace gases that are used as fuel are CO and CH4, however, the gases are not separated from the other gases, which do not have a workable calorific power.

The technology to be used consists of a boiler, turbine and generator purchased from ABB and Koblitz. The new plant is expanding capacity from 4 to 10MW and it is expected to operate at a load factor of 84%. The project uses state of the art technology and it will not be substitute by other or more efficient technologies in the foreseen future.

BVQI recognises that Cosipar Renewable Electricity Generation Project is helping Brazil fulfil its goals of promoting sustainable development. Specifically, the project is in line with host-country specific CDM requirements because:

- It contributes to local environmental sustainability since it will decrease the purchase of fossil energy from the grid through the use of an alternative non fossil fuel, the blast furnace gas. Also, in the absence of this project, the gas would be flared and simply released for the atmosphere without any final use. Therefore, the project contributes to the better use of natural local resources. Besides, it uses clean and efficient technologies, and conserves natural resources, thus the project will be meeting the Agenda 21 and Sustainable Development Criteria of Brazil.
- Contributes for best work condition and increases employment opportunities (please refer to CL.7 of Appendix A) in the area where the project is located according to Cosipar's recorded data;
- Contributes for revenue distribution since the use of a renewable fuel decreases dependence on fossil fuels; decreases the pollution and therefore the social costs related to this; diversifies the sources of electricity generation; and finally decentralises the energy generation;
- Contributes for technological and capacity development – most of the technology, hand labour and technical maintenance will be provided inside Brazil. The whole system like boiler, turbines and generator presents high efficiency. This type of project will stimulate the Brazilian production for innovative initiatives inside the energy sector. It acts as a clean technology demonstration project,

encouraging development of modern and more efficient generation of electricity and thermal energy;
- Contributes for regional integration and connection with other sectors – the project facilitates the increase on blast furnace gas as a fuel in the region where it is located and therefore it integrates other similar companies that wants to replicate the experience of Cosipar. Also, it creates an alternative market for this kind of energy generation, indirectly joining the Brazilian energy and environmental sectors.

The Project Scenario is considered additional in comparison to the baseline scenario, and therefore eligible to receive Certified Emissions Reductions (CERs) under the CDM, based on an analysis, presented by the PDD, of investment, technological and other barriers, and prevailing practice (please refer to CL.3 of Appendix A).

The project design is sound and the geographical (the project location) and temporal (21 years crediting-period) boundaries of the project are clearly defined.

3.2 Baseline

According to the simplified modalities and procedures for small-scale CDM project activities, the Cosipar Renewable Electricity Generation Project falls under the Type/Category I.D. (Renewable Energy Projects / Renewable electricity generation for a grid), therefore the methodology *AMS-I.D. - Renewable electricity generation for a grid* (Version 08:03 March 2006) approved by the UN CDM Executive Board can be used. The project will be generating electricity from renewable sources and displacing electricity generated by the grid.

The Project will be powered only by blast furnace gas, which is a carbon neutral fuel. The generation of the blast furnace gas is a consequence of the reaction carbon content of charcoal (or other reducing agents) with the oxygen of atmospheric air and of oxygen of Iron oxide, resulting in CO and CO2. The carbon may also react with hydrogen from atmospheric air; resulting in CH4.The main blast furnace gases that are used as fuel are CO and CH4, however, the gases are not separated from the other gases, which do not have a workable calorific power.

Concerning the displacement of energy from grid, the *AMS-I.D* methodology comprises projects “that supply electricity to an electricity distribution system”. In this case, although part of the electricity generated by the project would be used by the plant and would not be exported it would still reduce the imports from grid, avoiding marginal fossil fuel based electricity generation. It is interesting to note that the electricity generation and the consumption directly in site is more efficient that the exportation of electricity to grid and the consumption of it.

It was evidenced the correct application and justification of selected baseline methodology. (see CAR 5 of Appendix A)

The Baseline Scenario is represented by the continued use of electricity from the grid.

The construction of a renewable energy plant faces specific financial/economic barriers due to the fact that technical/technological innovations carry with them risk premiums in terms of financing. The financial/economical barrier to the project activity is demonstrated through a cash flow financial analysis. Comparing the project results with and without carbon, it is clearly demonstrated that the project would not occur without carbon revenues (see table below). The investment analysis considers all savings and expenses associated to the project such as the revenues from costs reduction with electricity and fuel purchases and the costs associated to the installation and operation of new plant. The carbon revenues increase the returns of the project to an acceptable level compared to other investments in Brazil.

Financial Results for project scenario.

	with carbon	**without carbon**
Present Value ($)	313,510	(170.688)
IRR	13%	11%
Discount rate	12%	
Present Value of carbon sold (21 years) $	**662,234**	

3.3 Monitoring Plan

The Project uses the approved monitoring methodology described in AMS-I.D. - Renewable electricity generation for a grid (Version 08: 03 March 2006)

As the project is eligible for using the methodologies listed in Appendix B of the Simplified Modalities and Procedures for Small Scale CDM project activities, it was considered that it should use the monitoring methodologies proposed for this project type.

The monitoring methodology directly measures electricity produced by the project, which is equivalent to the electricity displacement from the grid.

All indicators of importance for controlling and reporting of project performance are incorporated in the MP. The type, variable, unit, frequency, proportion, means and period of archiving of the data are sufficiently described.

3.4 Calculation of GHG Emissions

The methodologies for calculating emission reductions are transparently documented and comply with existing good practice

No formula is provided to quantify emission reduction of electricity generation in the Baseline Type 1.D.

Emissions by sources are nil since renewable energy is either a zero CO_2 or CO_2 neutral source of energy.

To estimate the baseline emissions, the project proponent followed the paragraph 9.a of the simplified modalities for small-scale projects, which uses the Combined Margin approach. To define the baseline emissions the annual kWh for the project was determined and multiplied by the combined margin rate of the grid. For estimating the baseline carbon intensity, the combined margin carbon intensity for sub-national Brazilian grid was used, as this data is available and is provided by a reliable and credible source for calculating the emission reductions.

The data and assumptions used to apply the methodology are from Cosipar team.

3.5 Environmental and Social Impacts

For the Cosipar small-scale renewable energy project the local environmental body required no specific environmental assessment. However, an ANEEL license was required for the Project activity. Typical requirements found in such licenses include specific emissions limits, actions for pollution prevention, communication plans with local community, etc.

This has been completed, concluding that the Project adheres to the requirements.

Considering that all the blast furnace gas would be flared if it is not used to generate electricity, the additional activity is very small, including just the expansion of an existing plant to increase the electricity production. Thus, the environmental impacts are not significant.

The project does not expect to create any negative social or environmental impacts. On the other hand, job positions are expected to be created.

3.6 Comments by Local Stakeholders

Letters were sent to the following local stakeholders:

- City Hall of Marabá;
- Chamber of Marabá;
- Environmental agencies from the State and Local Authorities;
- Brazilian Forum of NGOs;
- District Attorney (known in Portuguese as Ministério Público, i.e. the permanent institution essential for legal functions responsible for defending the legal order, democracy and social/individual interests) and;
- Local communities associations;

Local stakeholders were invited to raise their concerns and provide comments on the project activity through Cosipar website, for a period of 30 days after receiving the letter of invitation.

No comments were made during 30 days (from August 2nd until September 2nd on 2004).

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the Validation of CDM projects, the validator shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organisations and make them publicly available.

BVQI published the project documents on the UNFCCC CDM website (http://cdm.unfccc.int) on 2004-12-04 and invited comments within 2005-01-03 by Parties, stakeholders and non-governmental organisations. No comments were received.

5 VALIDATION OPINION

BVQI has performed a validation of the Cosipar Renewable Electricity Generation Project in Brazil. The validation was performed on the basis of UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan (October to December 2004); ii) follow-up interviews with project stakeholders (December 2004); iii) the resolution of outstanding issues and the issuance of the final validation report and opinion (January to December 2005); iv) the resolution of outstanding issues raised by the CDM Executive Board during registration process(August 2006) .

By displacing fossil fuel-based electricity with electricity generated from a renewable source, the project is likely to result in reductions of CO2 emissions that are likely to be real, measurable and give long-term benefits to the mitigation of climate change. An analysis of the investment and technological barriers demonstrates that the proposed project activity 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. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the project design documentation (August 2006version) and the subsequent follow-up interviews have provided BVQI with sufficient evidence to determine the fulfilment of stated criteria. In our opinion, the project correctly applies the simplified baseline and monitoring methodology AMS.I-D and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

BVQI recommends the project for registration with the provision to rectify the issue above.

The validation is based on the information made available to us and the engagement conditions detailed in this report. Hence, BVQI cannot be held liable by any party for decisions made or not made based on the validation opinion.

6 REFERENCES

Category 1 Documents:
Documents provided by Cosipar that relate directly to the GHG components of the project.

/1/ **Clean development mechanism – Small-scale project design document (CDM-PDD) – Cosipar renewable electricity generation project, State of Pará**. EcoSecurities, Aug, 2004

/2/ **Clean development mechanism – Small-scale project design document (CDM-PDD) – Cosipar renewable electricity generation project, State of Pará**. EcoSecurities, Feb, 2005

/3/ **Clean development mechanism – Small-scale project design document (CDM-PDD) – Cosipar renewable electricity generation project, State of Pará**. EcoSecurities, April, 2005

/4/ **Clean development mechanism – Small-scale project design document (CDM-PDD) – Cosipar renewable electricity generation project, State of Pará**. EcoSecurities, September, 2005

/5/ **Clean development mechanism – Small-scale project design document (CDM-PDD) – Cosipar renewable electricity gereration project, State of Pará.** EcoSecurities, October, 2005

/6/ **Clean development mechanism – Small-scale project design document (CDM-PDD) – Cosipar renewable electricity gereration project, State of Pará.** EcoSecurities, December, 2005

/7/ **Clean development mechanism – Small-scale project design document (CDM-PDD) – Cosipar renewable electricity gereration project, State of Pará.** EcoSecurities, August 2006

Category 2 Documents:

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

/8/ **Agenda 21 brasileira – Ações prioritárias**. Presidência da República, Feb, 1997

/9/ **Resolução 01**. Comissão Interministerial de Mudança Global do Clima, Sep, 2003

/10/ **Appendix A of the simplified modalities and procedures for small-scale CDM project activities**. UNFCCC/CCNUCC, Jan, 2003

/11/ **Appendix B of the simplified modalities and procedures for small-scale CDM project activities**. UNFCCC/CCNUCC, Jun, 2004

/12/ **Appendix C of the simplified modalities and procedures for small-scale CDM project activities**. UNFCCC/CCNUCC

/13/ **Annex II - Simplified modalities and procedures for small–scale clean development mechanism project activities**. UNFCCC/CCNUCC

/14/ **Kyoto Protocol to the United Nations Framework Convention on Climate Change**. United Nations, Dec, 1997

/15/ **Approved baseline methodology AM0015**. UNFCCC/CCNUCC, Sep, 2004

/16/ **Road-testing baselines for greenhouse gas mitigation projects in the electric power sector**. OECD/IES, Oct, 2002

/17/ **Lei Federal 10.438**. Apr, 2002

/18/ **Lei Federal 10.761**. Nov, 2003

/19/ **Clarifications on validation requirements to be checked by a Designated Operational Entity**. UNFCCC/CCNUCC, Sep, 2004

/20 **AMS.I-D - Renewable electricity generation for a grid (v.08, Mar 2006)**

/21/ **IETA/PCF – Validation and Verification Manual (v. 03, Dec 2003)**

/22/ **ISO DIS 14064-3 - Greenhouse gases —Part 3:Specification with guidance for the validation and verification of greenhouse gas assertions**

/23/ **ISO DIS 14064-2 - Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements**

Persons interviewed:

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

/24/ Cosipar

- Diana Freitas Martins
- Frederico Pacheco
- Luis Guilherme Monteiro

/25/ EcoSecurities

- Flávia Resende

- o0o –

COSIPAR SSC CDM PROJECT 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	See Tale 2, Section A.5.2.2	Table 2, Section E.1.2.18
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, Marrakesh Accords, CDM Modalities §40a	OK, according to Ofício MDL 033/2005/SEPED/CGMGC	Table 2, Section A.3
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art.12.2.	See Tale 2, Section A.5.2.2	Table 2, Section E.1.2.18
4. The project shall have the written approval of voluntary participation from the designated national authorities of each party involved	Kyoto Protocol Art. 12.5a, Marrakesh Accords, CDM Modalities §40a	OK, according to Ofício MDL 033/2005/SEPED/CGMGC	-
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	See Tale 2, Section A.5.2.2	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	Kyoto Protocol Art. 12.5c, Marrakesh Accords, CDM	See Table 2, Sections A.5.2.2, B.3.2 and b.3.3	Table 2, Section B.5

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
would have occurred in the absence of the registered CDM project activity	Modalities §43		
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance	Marrakech Accords	The project will not receive any public funding from Parties included in Annex I.	A. 5.4
8. Parties participating in the CDM shall designate a national authority for the CDM	Marrakech Accords, CDM Modalities §29	Comissão Interministerial is the Host Party Designated National Authority	-
9. The host country shall be a Party to the Kyoto Protocol	Marrakech Accords, CDM Modalities §30	Yes	-
10. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received	Marrakech Accords, CDM Modalities §37b	There is no evidence of local stakeholders invitation for comments	Table 2, Section G
11. 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.	Marrakech Accords, CDM Modalities §37c	See Table 2, Section F	Table 2, Section F
12. Baseline and monitoring methodology shall be previously approved by the CDM Methodology Panel	Marrakech Accords, CDM Modalities §37e	See Table 2, Section A.5.2.2	Table 2, Section B.1.2 and D.1.2
13. 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	Marrakech Accords, CDM Modalities §37f	See Table 2, Section A.5.2.2	Table 2, Section D

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
14. 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	Till January 4th, 2005	-
15. 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	Marrakech Accords, CDM Modalities, §45c,d	See Table 2, Section A.5.2.2	Table 2, Section B.5
16. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force major	Marrakech Accords, CDM Modalities, §47	See Table 2, Section A.5.2.2	Table 2, Section B.5
17. The project design document shall be in conformance with the UNFCCC CDM-PDD format	Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	OK	-

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. Title of the project activity		DR	Cosipar Renewable Electricity Generation Project	OK	OK
A.2. Description of the project activity					
A.2.1. Is the purpose of the project activity included?		DR	To generate part of the electricity required by Cosipar Pig Iron Plant	OK	OK
A.2.2. Is the view of the project participants on the contribution of the project activity to sustainable development included?		DR	There are no evidences of the view of the project participants on the contribution of the project activity to sustainable development	CAR 1	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?		I	There is no evidence that the second condition of the Notification 3280, attached to the environmental license, that obliges Cosipar to send periodically to SECATM the results of its liquid discharges, is being met	CAR 2	OK
A.3.2. Is the project in line with host-country specific CDM requirements?		DR	The PDD does not describe **if and how** the project activities contribute for sustainable development, as required by Resolução	CAR 3	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Interministerial 001/03, anexo III, itens a/b/c/d/e		
A.3.3. Is the project in line with sustainable development policies of the host country?		DR	The project uses clean and efficient technologies, and conserves natural resources	OK	OK
A.3.4. Will the project create other environmental or social benefits than GHG emission reductions?		DR I	The project increases employment opportunities in the area where is located and diversifies the sources of electricity generation	OK	OK
A.4. Project participants					
A.4.1. Are Party(ies) and private and/or public entities involved in the project activity listed?		DR	Cosipar – Cia. Siderúrgica do Pará EcoSecurities Ltd	OK	OK
A.4.2. Is contact information provided in annex 1 of the PDD?		DR	Cosipar – 55 21 2105-6019 EcoSecurities – 44 1865 202 635	OK	OK
A.4.3. Is one of the above designated as the official contact for the CDM project activity?		DR	There is no evidence of the designation of the official contact for the project activity	CAR 4	OK
A.5. Technical description of the project activity					
A.5.1. Location of the project activity					
A.5.1.1. Host country Party(ies)		DR	Brazil	OK	OK
A.5.1.2. Region/State/Province etc.		DR	North region of Brazil, State of Pará	OK	OK
A.5.1.3. City/Town/Community etc.		DR	Marabá	OK	OK
A.5.1.4. Detailed description of the physical location, including information allowing the unique identification of this project activity		DR	Cosipar main industrial complex, Rodovia PA 150, km 422 – Distrito Industrial	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.5.2. Type and category(ies) and technology of project activity					
A.5.2.1. Is the type and category of the project activity specified?	2	DR	Yes, but see bellow	OK	OK
A.5.2.2. It is justified how the proposed project activity conforms to the project type and category selected?	2	DR I	The Project Design Document for the COSIPAR project applies the "I.D. Renewable electricity generation for a grid" baseline and monitoring methodology to the project activity. We hold significant uncertainty regarding the appropriateness and applicability of the I.D. methodology to the project based on the following: 1. In FCCC/CP/2002/7/Add.3 Annex II, under Further Clarifications on Definitions of Eligible Activities, Type (i) project activities, it is stated that "Definition of 'renewable energy': the Executive Board agreed to draw up an indicative list of energy sources/eligible project activities as proposed in the attachment to annex 2 of the annotated agenda of its third meeting." As yet this list has not been developed and therefore there are not any officially identified eligible activities. As validators, we are forced to rely on suggestions in existing documents regarding what the proposed indicative list	CAR 5	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			might contain. In reviewing Appendix B of the simplified modalities and procedures for small scale CDM project activities and more specifically Type I Renewable Energy Projects, Item 23 under I.D. Renewable electricity generation for a grid, it is stated "This category comprises renewables, such as photovoltaics, hydro, tidal/wave, wind, geothermal, and biomass, …" This list does not include the COSIPAR project activity as it is described in the PDD, which we interpret to mean that such activity would potentially not be considered as a renewable energy source. 2. In addition, Note 1 of the previously referenced Annex II identifies that "Project activities referring to the burning of peat and non-biogenic waste should not be included in the indicative list." It is our interpretation based on the limited description in the PDD that the COSIPAR project "waste gas" which is the fuel for the electricity generation is not produced in a biogenic manner. Therefore, when an indicative list is issued, the project activity would not be included on this list. 3. Further, common definitions of renewable energy usually provide		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			definitions suggesting that renewable energies are usually related to natural processes and are not dependent on finite resources. It is our interpretation that the waste gas used by the project activity to generate electricity is the result, not of a natural processes, but rather produced through chemical reactions resulting from intensive industrial processes which use finite resources such as coke (or charcoal), iron ore, etc. We therefore have difficulty understanding how this activity can be defined as a renewable energy. 4. The I.D. methodology also identifies project activities "that supply electricity to an electricity distribution system that is or would have been supplied by at least one fossil fuel or non-renewable biomass fired generating unit." Though on page 4 of the PDD it is stated that "the plant will sell its generated electricity to the grid", other references in the PDD and interviews with representatives of the COSIPAR project suggest that the electricity will not be provided to the grid as the methodology specifies but will be used for internal consumption at the facility. 5. Contributing to our uncertainty regarding		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			this issue, there are other simplified baseline methodologies for small scale projects which, based on our limited understanding of the project provided in the PDD, appear to be applicable with the COSIPAR project activity. These could include but are not limited to: I.A. Electricity generation by the user, II.D Energy efficiency and fuel switching measures for industrial facilities		
A.5.2.3. Does the project design engineering reflect current good practices?		I	Yes.	OK	OK
A.5.2.4. 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?		I	This point was not evaluated during the interviews	CL 1	OK
A.5.2.5. Is the project technology likely to be substituted by other or more efficient technologies within the project period?		I	This point was not evaluated during the interviews	CL 2	OK
A.5.2.6. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?		I	No	OK	OK
A.5.2.7. Does the project make provisions for meeting training and maintenance needs?		I	Yes	OK	OK
A.5.3. Brief statement of how anthropogenic emissions of GHG by sources are to be reduced by the					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
proposed CDM project activity					
A.5.3.1. It is stated how anthropogenic GHG emission reductions are to be achieved?		DR	The electricity generated will displace fossil fuelled electricity from the grid	OK	OK
A.5.3.2. Is the estimate of total anticipated reductions of tons of CO_2 equivalent provided?		DR	There is no evidence, at this point, of total anticipated reductions of tons of CO_2 equivalent provided.	CAR 6	OK
A.5.4. Public funding of the project activity					
A.5.4.1. It is indicated whether public funding from Parties included in Annex I is involved in the proposed project activity?		DR	The project will not receive any public funding from Parties included in Annex I.	OK	OK
A.5.4.2. If public funding is involved, is information on sources of public funding for the project activity provided in annex 2, including an affirmation that such funding does not result on a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties?		DR	Not applicable	–	–
A.5.5. Confirmation that the small-scale project activity is not a debundled component of a larger project activity					
A.5.5.1. Is the project activity not debundled from a larger project activity?	3	DR	The projects categories and the boundary are different for the three CDM projects developed by Cosipar	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B. Project Baseline Methodology *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. **Title and reference of the project category applicable to the project activity**					
B.1.1. Are the title and the reference of the project category applicable to the project activity defined?	2	DR I	Yes	–	OK
B.1.2. Does the CDM Methodology Panel previously approve the baseline methodology?		DR I	Yes	–	OK
B.2. **Project category applicable to the project activity**					
B.2.1. Is the baseline methodology the one deemed most applicable for this project and is the appropriateness justified?	2	DR I	Yes	–	OK
B.3. **Description of how the anthropogenic GHG emissions by sources are reduced below those that would have occurred in the absence of the proposed CDM project activity**					
B.3.1. Does the proposed project activity qualify to use simplified methodologies?	2	DR	Yes, the capacity of the electricity generator system does not exceed 15 MW	OK	OK
B.3.2. Is the proposed project activity additional?	2	DR	The evaluation of the “investment barrier” does not include the savings due to stop	CL 3	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			buying electricity from the grid		
B.3.3. Are national policies and circumstances relevant to the baseline of the proposed project activity summarised?	2	DR	No “other barriers” were included in the PDD. It is necessary to emphasise if they actually do not exist.	CL 4	OK
B.4. **Description of the project boundary for the project activity**					
B.4.1. Are the project’s spatial (geographical) boundaries clearly defined?	2	DR	For the project, the boundary includes the emissions from activities that occur at the project location	OK	OK
B.4.2. Are the project’s system (components and facilities used to mitigate GHGs) boundaries clearly defined?		DR	Equal to B.4.1	OK	OK
B.5. **Details of the baseline and its development** *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.5.1. Is the baseline for the proposed project activity specified?		DR I	Yes		OK
B.5.2. Is the application of the methodology and the discussion and determination of the chosen baseline transparent, taking into account uncertainties?		DR I	Yes		OK
B.5.3. Has the baseline been determined using conservative assumptions where possible, taking into account uncertainties?		DR I	Yes		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.5.4. Has the baseline been established on a project-specific basis?		DR I	Yes		OK
B.5.5. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?		DR I	Yes		OK
B.5.6. Is the baseline determination compatible with the available data?		DR I	Yes		OK
B.5.7. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?		DR I	Yes		OK
B.5.8. Is it demonstrated/justified that the project activity itself is not a likely baseline scenario (e.g. through (a) a flow-chart or series of questions that lead to a narrowing of potential baseline options, (b) a qualitative or quantitative assessment of different potential options and an indication of why the non-project option is more likely, (c) a qualitative or quantitative assessment of one or more barriers facing the proposed project activity or (d) an indication that the project type is not common practice in the proposed area of implementation, and not required by a Party's legislation/regulations)?		DR I	Yes		OK
B.5.9. Have the major risks to the baseline been identified?		DR I	Yes		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.5.10. Is all literature and sources clearly referenced, including emissions estimation techniques and factors?	2	DR I	Yes		OK
B.5.11. Is the Date of completing the final draft of this baseline section defined?		DR	27/08/2004	OK	OK
B.5.12. Is the Name of person/entity determining the baseline defined and is also listed in annex 1?		DR	Eco securities	OK	OK
C. Duration of the Project Activity and Crediting Period *It is assessed whether the temporary boundaries of the project are clearly defined.*					
C.1. **Duration of the Project Activity**					
C.1.1. Is the project's starting date clearly defined and reasonable?		DR	01/07/2003	OK	OK
C.1.2. Is the project's operational lifetime clearly defined and reasonable?		DR	21y-00m	OK	OK
C.2. **Choice of the crediting period and related information**					
C.2.1. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?		DR	Starting date of the first crediting period = 01/10/2003 Length of the first crediting period = 7y-0m	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
D. Monitoring Methodology and 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*					
D.1. **Name and reference of approved methodology applied to the project activity** *It is assessed whether the project applies an appropriate baseline methodology.*					
D.1.1. Is the monitoring methodology defined?	2	DR I	Yes		OK
D.1.2. Does the CDM Methodology Panel previously approve the monitoring methodology?		DR I	Yes		OK
D.1.3. Does national or international monitoring standard have to be applied?		DR I	Yes		OK
D.1.4. If the answer to the previous question is "yes" the standard was is identified and a reference to the source where a detailed description of the standard can be found is provided?		DR I	Yes		OK
D.2. **Justification of the choice of the methodology and why it is applicable to the project activity**					
D.2.1. Is the monitoring methodology applicable for this project and is the appropriateness justified?	2	DR I	Yes		OK
D.2.2. Does the monitoring methodology reflect good		DR	Yes		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
monitoring and reporting practices?		I			OK
D.2.3. Is the discussion and selection of the monitoring methodology transparent?		DR I	Yes		OK
D.2.4. Is the accuracy, reliability and availability of emissions data in the monitoring plan expected to generate inaccurate emission data?		DR I	Yes		OK
D.2.5. Is it performed tests of correctness of critical formulas and calculations, including software data?		DR I	Yes		OK
D.3. **Data to be monitored**					
D.3.1. Is the table for the monitoring methodology complete?		DR	Electricity produced by the project		OK
D.3.2. 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?		DR I	Yes		OK
D.3.3. Are the choices of project GHG indicators reasonable?		DR I	Yes		OK
D.3.4. Will it be possible to monitor / measure the specified project GHG indicators?		DR I	Yes		OK
D.3.5. Will the indicators give opportunity for real measurements of achieved emission reductions?		DR I	Yes		OK
D.3.6. Will the indicators enable comparison of project		DR	Yes		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
data and performance over time?		I			
D.3.7. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?		DR I	Yes		OK
D.3.8. Have relevant indicators for GHG leakage been included?		DR I	Yes		OK
D.3.9. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?		DR I	Yes		OK
D.3.10. Will it be possible to monitor the specified GHG leakage indicators?		DR I	Yes		OK
D.3.11. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining baseline emissions during the crediting period?		DR I	Yes		OK
D.3.12. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?		DR I	Yes		OK
D.3.13. Will it be possible to monitor the specified baseline indicators?		DR I	Yes		OK
D.3.14. Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?		DR I	Yes		OK
D.3.15. Is the choice of indicators for sustainability development (social,		DR	Yes		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
environmental, economic) reasonable?		I			OK
D.3.16. Will it be possible to monitor the specified sustainable development indicators?		DR I	Yes		OK
D.3.17. Are the sustainable development indicators in line with stated national priorities in the Host Country?		DR I	Yes		OK
D.3.18. Is the authority and responsibility of project management clearly described?		DR I	Yes		OK
D.3.19. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?		DR I	Yes		OK
D.3.20. Are procedures identified for training of monitoring personnel?		DR I	Yes		OK
D.3.21. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?		DR I	Yes		OK
D.3.22. Are procedures identified for calibration of monitoring equipment?		DR I	Yes		OK
D.3.23. Are procedures identified for maintenance of monitoring equipment and installations?		DR I	Yes		OK
D.3.24. Are procedures identified for monitoring, measurements and reporting?		DR I	Yes		OK
D.3.25. Are procedures identified for day-to-day records handling (including what records to		DR	Yes		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
keep, storage area of records and how to process performance documentation)		I			OK
D.3.26. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?		DR I	Yes		OK
D.3.27. Are procedures identified for review of reported results/data?		DR I	Yes		OK
D.3.28. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?		DR I	Yes		OK
D.3.29. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?		DR I	Yes		OK
D.3.30. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?		DR I	Yes		OK
D.4. **Name of person/entity determining the monitoring methodology**					
D.4.1. Is contact information and indicate if the person/entity is also a project participant listed in annex 1 of this document provided?		DR	EcoSecurities	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
E. Calculation of GHG Emission Reductions 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. **Formulae Used** *The validation of predicted project GHG emissions focuses on transparency and completeness of calculations.*					
E.1.1. Selected formulae as provided in appendix B					
E.1.1.1. Is the calculation of GHG emission reductions, in accordance with the formula specified, described?	2	DR I	Yes		OK
E.1.1.2. Are all aspects related to direct and indirect GHG emissions, including leakage, captured in the project design?		DR I	Yes		OK
E.1.1.3. Are the GHG calculations documented in a complete and transparent manner?		DR I	Yes		OK
E.1.1.4. Have conservative assumptions been used to calculate project GHG emissions?		DR I	Yes		OK
E.1.1.5. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?		DR I	Yes		OK
E.1.1.6. Have all relevant greenhouse gases and source categories listed in Kyoto Protocol		DR	Yes		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Annex A been evaluated?		I			OK
E.1.1.7. Are uncertainties of external data sources for emissions reduction estimated?		DR I	Yes		OK
E.1.2. Description of formulae when not provided in appendix B					
E.1.2.1. Are the formulae used to estimate anthropogenic emissions due to the project activity defined?		DR I	No formula is needed	OK	OK
E.1.2.2. Are the formulae used to estimate leakage due to the project activity, where required, defined?		DR I	Not applicable	–	–
E.1.2.3. Are potential leakage effects beyond the chosen project boundaries properly identified?		DR I	Yes		OK
E.1.2.4. Have these leakage effects been properly accounted for in calculations?		DR I	Yes		OK
E.1.2.5. Does the methodology for calculating leakage comply with existing good practice?		DR I	Yes		OK
E.1.2.6. Are the calculations documented in a complete and transparent manner?		DR I	Yes		OK
E.1.2.7. Have conservative assumptions been used when calculating leakage?		DR I	Yes		OK
E.1.2.8. Are uncertainties in the leakage estimates properly addressed?		DR I	Yes		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
E.1.2.9. Is the sum of E.1.2.3 and E.1.2.3. (according to PDD itemisation) provided?		DR	Zero emissions	OK	OK
E.1.2.10. Are the formulae used to estimate anthropogenic emissions in the baseline defined?		DR I	Although there is an Approved Methodology (AM0015), the formulae used seems to come from a New Methodology (NM0001)	CL 5	OK
E.1.2.11. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?		DR I	Yes		OK
E.1.2.12. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?		DR I	Yes		OK
E.1.2.13. Are the GHG calculations documented in a complete and transparent manner?		DR I	Yes		OK
E.1.2.14. Have conservative assumptions been used when calculating baseline emissions?		DR I	Yes		OK
E.1.2.15. Are uncertainties in the GHG emission estimates properly addressed in the documentation?		DR I	Yes		OK
E.1.2.16. Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?		DR I	Yes		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
E.1.2.17. Is the difference between E.1.2.4 and E.1.2.3 (according to PDD itemisation) provided?		DR	Only the formulae is described	CAR 7	OK
E.1.2.18. Will the project result in fewer GHG emissions than the baseline scenario?		DR I	Yes		OK
E.2. **Table providing values obtained when applying formulae above**					
E.2.1. Is a table providing values obtained when applying formulae above provided?		DR	Yes, but the origin of the data is not clear	CL 6	OK
F. Environmental and Social Impacts *Documentation on the analysis of the environmental and social 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 and social impacts of the project activity been sufficiently described?		DR	It should be clear the question about " generation of new employment", and wastewater discharge with chemicals from the boiler system, water consumption for the boiler, and risk of boiler explosion	CL 7	OK
F.1.2. Are there any host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?		DR I	A license from ANEEL (Electricity National Agency) was required, but, up to now, was not provided	CL 8	OK
F.1.3. Will the project create any adverse environmental or social effects?		DR	No		OK
F.1.4. Are transboundary environmental and social impacts considered in the analysis?		DR	Yes		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
F.1.5. Have identified environmental and social impacts been addressed in the project design?		DR	See F.1.1	OK	OK
F.1.6. Does the project comply with environmental legislation in the host country?		DR	See table 3, item 1.2	–	– ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
G. Stakeholder Comments *The validator should ensure that stakeholder comments have been invited and that due account has been taken of any comments received.*					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
G.1.1. Have relevant stakeholders been consulted?		DR	There is no evidence of local stakeholders invitation for comments according to Resolução interministerial 001/03	CAR 8	OK
G.1.2. Have local stakeholders used appropriate media to invite comments?		DR	According to Resolução 001/03, article 3: invitation must be sent to the following: - Prefeitura e Câmara dos vereadores;	CAR 9	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			- Órgãos Ambientais Estadual e Municipal; - Fórum Brasileiro de ONG's e Movimentos Sociais para o Meio Ambiente e Desenvolvimento; - Associações comunitárias; - Ministério Público.		
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?		DR	See G.1.2		OK
G.1.4. Is it described the process by which comments by local stakeholders have been invited and compiled?		DR	It is not clear if the web site was the only way or effectively letters to local stakeholders were sent too .	CL 9	OK
G.1.5. Is a summary of the stakeholder comments received provided?		DR	See G.1.1	OK	OK
G.1.6. Has due account been taken of any stakeholder comments received?		DR	See G.1.1	OK	OK

Table 3 Legal requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Legal requirements					
1.1. Is the project activity environmentally licensed by the competent authority?		I	There is an environmental license issued by "Secretaria Executiva de Ciência e Meio	–	–

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Ambiente (SECTAM), the environmental agency of Pará, that expires on June 26th, 2005. The renovation had already been requested and the process already started as shown by a renovation protocol. See table 2, section F.1.2		
1.2. Are the conditions of the environmental license being met?	6.1.1	I	See table 2, section A.3.1	_	_
1.4. Are the conditions of the Resolução Interministerial 01/2003 being met?		DR	See table 2, section A.3.2	_	_

Table 4 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
CAR.1 There are no evidences of the view of the project participants on the contribution of the project activity to sustainable development	A.2.2	*Evidences added on item A.2 Description of Project activity on PDD. The participants of the project recognizes that Cosipar Renewable Electricity Generation Project is helping Brazil fulfil its goals of promoting sustainable development. Specifically, the project is in line with host-country specific CDM requirements because it contributes to sustainability as better explained on CAR 3 below.*	The information given is considered sufficient, and the corrective action request is closed.
CAR.2 There is no evidence that the second condition of the Notification 3280, attached to the environmental license, that obliges Cosipar to send periodically to SECTAM the results of its liquid discharges, is being met	A.3.1	*A document proving that COSIPAR sends such information periodically to SECTAM will be sent.*	Cosipar sent the results of its liquids discharges on February 21st,2005, as evidenced by protocol no. 2005/45223. The corrective action request is closed.
CAR.3 The PDD does not describe **if and how** the project activities contribution for sustainable development, as required by Resolução Interministerial 001/03, anexo III, itens a/b/c/d/e	A.3.2	*Evidences added on item A.2 Description of Project activity on PDD based on itens a/b/c/d/e presented by Resolução Interministerial 001/03, anexo III. The project activity contributes to sustainable development because: contributes to local environmental sustainability, since It will decrease the purchase of fossil energy from*	Based on the Ofício MDL 033/2005/SEPED/CGMGC, issued by the Brazilian Designated National Authority, BVQI closed this corrective action.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		grid through the use of an alternative fossil fuel as blast furnace gas; contributes for revenue distribution since the project decrease the dependence on fossil fuel fuel and decentralizes the energy generation; contributes for technological and capacity development since all technology, hand labour and technical maintenance will be provided in Brazil, using an innovative technology in the Northern Region; and finally it contributes for regional integration and connection with other sectors as the project stimulates the use of an alternative fuel in a region with similar activities around. Also, it starts a connection with the electricity sector.	
CAR.4 There is no evidence of the designation of the official contact for the project activity	A.4.3	*Evidences added on item A.3 Project Participants. The official contacts are Cosipar – Cia Siderúrgica do Pará and EcoSecurities Ltd with its respective addresses and telephones on the PDD.*	The information given is considered sufficient, and the corrective action request is closed.
CAR.5 The Project Design Document (April 2005) for the COSIPAR project applies the "I.D. Renewable electricity generation for a grid" baseline and monitoring methodology to the project activity. We hold significant uncertainty regarding the appropriateness	A.5.2.2.2	*All answers here were also evidenced on items A.4.2 and B.2.*	The information given is considered sufficient, and the corrective action request is closed

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
and applicability of the I.D. methodology to the project based on the following: 1. In FCCC/CP/2002/7/Add.3 Annex II, under Further Clarifications on Definitions of Eligible Activities, Type (i) project activities, it is stated that "Definition of 'renewable energy': the Executive Board agreed to draw up an indicative list of energy sources/eligible project activities as proposed in the attachment to annex 2 of the annotated agenda of its third meeting." As yet this list has not been developed and therefore there are not any officially identified eligible activities. As validators, we are forced to rely on suggestions in existing documents regarding what the proposed indicative list might contain. In reviewing Appendix B of the simplified modalities and procedures for small scale CDM project activities and more specifically Type I Renewable Energy Projects, Item 23 under I.D. Renewable electricity generation for a grid, it is stated "This category comprises renewables, such as photovoltaics, hydro, tidal/wave, wind,		*1 and 3. It is worth noting that electricity generation trought the use of blast furnace gas is considered emission neutral as the gas would continue to be flared if the project did not go ahead. To reinforce that position, the use of waste gas as a "zero GHG emission fuel" has been approved and consolidated by EB in large scale methodology ACM0004 "Consolidated baseline methodology for waste gas and/or heat and/or pressure for power generation", which baseline emissions are calculated as described in ACM0002 "Consolidated baseline Methodology for grid-connected electricity generation from renewable sources".* *Additionally, EB has registered the UTE Barreiro S.A. Renewable Electricity Generation Project – Brazil, which characterises the blast furnace gas as renewable source of energy.* *2.Modifications in PDD has been made in*	

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
geothermal, and biomass, …" This list does not include the COSIPAR project activity as it is described in the PDD, which we interpret to mean that such activity would potentially not be considered as a renewable energy source. 2. In addition, Note 1 of the previously referenced Annex II identifies that "Project activities referring to the burning of peat and non-biogenic waste should not be included in the indicative list." It is our interpretation based on the limited description in the PDD that the COSIPAR project "waste gas" which is the fuel for the electricity generation is not produced in a biogenic manner. Therefore, when an indicative list is issued, the project activity would not be included on this list. 3. Further, common definitions of renewable energy usually provide definitions suggesting that renewable energies are usually related to natural processes and are not dependent on finite resources. It is our interpretation that the waste gas used by the project activity to generate electricity is the result, not of a natural processes, but rather produced through chemical reactions resulting from		*order to clarify this issue* *4. Part of this electricity will be used to displace grid electricity since the surplus of electricity will be sold to grid. The PDD will be changed to clarify this aspect.* *We understand that the I.D methodology comprises projects that "that supply electricity to an electricity distribution system". In similar projects developed by EcoSecurities and already validated, the validator understood that, although part of the electricity generated by the project would be used by the plant and would not be exported it would still reduce the imports from grid, avoiding marginal fossil fuel based electricity generation. As a consequence, the validator was in favour of the project being considered under Category I.D. This was, however, subject to the final acceptance of the CDM Executive Board with regard to whether category I.D can also apply to projects that generate electricity for their own use.* *It is interesting to note that the electricity*	

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
intensive industrial processes which use finite resources such as coke (or charcoal), iron ore, etc. We therefore have difficulty understanding how this activity can be defined as a renewable energy. 4. The I.D. methodology also identifies project activities "that supply electricity to an electricity distribution system that is or would have been supplied by at least one fossil fuel or non-renewable biomass fired generating unit." Though on page 4 of the PDD it is stated that "the plant will sell its generated electricity to the grid", other references in the PDD and interviews with representatives of the COSIPAR project suggest that the electricity will not be provided to the grid as the methodology specifies but will be used for internal consumption at the facility. 5. Contributing to our uncertainty regarding this issue, there are other simplified baseline methodologies for small scale projects which, based on our limited understanding of the project provided in the PDD, appear to be applicable with the COSIPAR project activity. These could include but are not limited to:		*generation and the consumption directly in site is more efficient that the exportation of electricity to grid and the consumption of it. The project is not requesting the credit related to this energy efficiency, thus it is being conservative.* *5. : The use of the methodology I.A turns out to be not viable since the "fuel consumption of the technology in use" is the fuel consumption of the grid. This would take us the methodology I.D again. Note that I.A also refers to renewable energy.* *Regarding the use of the methodology II.D, we understand that this project is actually reducing the consumption of electricity from the grid by generating its own electricity and not by increasing its efficiency. As a mater of fact, the project may even export electricity to the grid as o consequence of the electricity generation, something that cannot be done by increasing efficiency but only by generating energy.*	

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
I.A. Electricity generation by the user, II.D Energy efficiency and fuel switching measures for industrial facilities			
CAR.6 There is no evidence, at this point, of total anticipated reductions of tons of CO_2 equivalent provided.	A.5.3.2	*Evidences added on item A.2 Description of the project activity. Total anticipated reductions were estimated on 345,768 tCO_2 during the whole 21 year project.*	The information given is considered sufficient, and the corrective action request is closed.
CAR.7 Only the formulae is described	E.1.2.17	*Besides the formulae, also the value of 16,466 tCO2/year were included in item E.1.2.5 of PDD.*	The information given is considered sufficient, and the corrective action request is closed.
CAR.8 There is no evidence of local stakeholders invitation for comments according to Resolução interministerial 001/03	G.1.1	*The stakeholders were better described as the procedures on how due account was taken for any comment received on items G.1 until G.3 of PDD. Cosipar sent an invitation letter to stakeholders specified by Resolution no. 01 of Brazilian Designated National Authority.*	The information given is considered sufficient, and the corrective action request is closed.
CAR.9 According to Resolução 001/03, article 3: invitation must be sent to the following: - Prefeitura e Câmara dos vereadores; - Órgãos Ambientais Estadual e Municipal; - Fórum Brasileiro de ONG's e Movimentos Sociais para o Meio Ambiente e Desenvolvimento; - Associações comunitárias;	G.1.2	*Invitations were sent to stakeholders specified by Resolução 001/03, article 3: City Hall of Marabá; Chamber of Marabá; environmental agencies from the state and local authorities (IBAMA and SECTAM); District Attorney (Ministério Público Federal); Brazilian Forum of NGOs and local communities association (Comissão Pastoral da Terra).*	The information given is considered sufficient, and the corrective action request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
- Ministério Público.			
CL.1 This point was not evaluated during the interviews	A.5.2.4	*Evaluation added on item A.4.2 of PDD. The project uses state of the art technology.*	The information given is considered sufficient, and the clarification request is closed.
CL.2 This point was not evaluated during the interviews	A.5.2.5	*Evaluation added on item A.4.2 of PDD. The project will not substitute by other or more efficient technologies within the project period.*	The information given is considered sufficient, and the clarification request is closed.
CL.3 The evaluation of the "investment barrier" does not include the savings due to stop buying electricity from the grid	B.3.2	*Evidences added on item B.3 Description of how the anthropogenic etc. The financial analysis compared the internal rate of return of plausible scenarios and demonstrated that the carbon revenues increase the returns of the project to an acceptable level compared to other investments in Brazil. Comparing the projects results with and without carbon, the project would have an IRR of 13 % and 11% respectively. It is clearly demonstrated that the project improves the return of this investment.* *We confirm that we presented the I.R.R. for the case of implementing the project without carbon as 11% and compared that to the discount rate of 12%.* *EcoSecurities sent the spreadsheet*	The project developer presents the I.R.R. for the case of implementing the project without carbon as 11% and compares that to the discount rate of 12% which the minimum remuneration of capital that is expected to happen in Brazil. There is a lack of a transparent demonstration of all the economic costs and benefits from the project. The information provided by the spreadsheet is considered sufficient, and the clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		"Cosipar FA and CER calculation 23-03-2005 (FR, PF)" with all financial analysis data used for the calculations to make the economic costs and benefits from the project more transparent.	
CL.4 No "other barriers" were included in the PDD. It is necessary to emphasise if they actually do not exist.	B.3.3	*Emphasis added on item B.3 of PDD. The construction of the extension to the energy plant does not present other barriers.*	The information given is considered sufficient, and the clarification request is closed.
CL.5 Although there is an Approved Methodology (AM0015), the formulae used seems to come from a New Methodology (NM0001)	E.1.2.10	*Evidences better demonstrated on item E.1.2.4 of PDD. To estimate the baseline emissions, EcoSecurities followed the paragraph 9.a of the simplified modalities for small-scale projects, which uses the Combined Margin (CM) approach. To define the baseline emissions we determined the annual kWh for the project and multiplied this by the combined margin rate of the grid. For estimating the baseline carbon intensity, we decided to use the combined margin carbon intensity for sub-national Brazilian grid, as this data is available and is provided by a reliable and credible source for calculating the emission reductions (ER_{net}) achieved by the project.*	The calculation is analogous to the formulae described at the Approved Baseline Methodology AM0015/Version 01. The clarification request is closed.
CL.6 Yes, but the origin of the data is not clear	E.2.1	*Origins of data were included on table 8 of item E.2 of PDD. Basically, data were*	Please, confirm if the figures for "Operating Margin Emission

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		originated from Cosipar team information and also on EcoSecurities calculation. *Since the access to Brazilian database was difficult, EcoSecurities had to rely on their calculation method and had very little flexibility to adapt it in order to be 100% in accordance with the small scale methodology.So, EcoSecurities recalculated the Build margin, the Operating margin, and the Combined margin again but, using their data and assumptions applied to the UNFCCC Small Scale methodology (ID).* *The resulting operating, construction and combined margins EFs are 0.7133 tCO_2/MWh, 0.0568 tCO_2/MWh and 0.3850 tCO2/MWh, respectively.* *EcoSecurities has made changes on Section E of the revised version of the PDD to clarify this issue.*	Factor" and "Build Margin Emission Factor". The information given in the changed Section E is considered sufficient, and the clarification request is closed.
CL.7 It should be clear the question about " generation of new employment", and wastewater discharge with chemicals from the boiler system, water consumption for the	F.1.1	*According to the employment control spreadsheet provided by Cosipar, since October 2003, 18 new employees were hired by the company to work directly or*	The information given is considered sufficient, and the clarification request is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
boiler, and risk of boiler explosion		*indirectly with the thermo unit. This table was already presented to the validator during the site visit.* *For the boiler operation, maintenance, inspection and supervision, the company has hired specialized employees and has obtained all documentation and registries required by the Standard Rule NR 13. Also, Cosipar has elaborated the PPI (in Portuguese Programa de Prevenção de Incêndios – Fire Prevention Programme), which consists in an emergency programme specifically for boiler procedures, avoiding panic, dispersion and lost of control during risk situation. The program includes specific procedures in case of explosion and firing on the equipments and buildings around.* *The boiler used by Cosipar consumes approximately 45 m3/hour of water, from which 1.2 to 2 m3 is obtained from evaporator and the remaining is originated from the condensate tank. During the steam generation process, solid particles suspended in the water used by the boiler*	

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		are deposited and produce a corrosive sludge at the bottom of the boiler. The periodic removal of this sludge occurs through bottom discharges that happen three times a day, . Those effluents are transported to a purge tank and after that will be re-used to moisture the internal pathways for vehicle circulation inside Cosipar. *In the second and fourth revision of the PDD, details concerning this issue were added on Item A.2. and A.4.2*	
CL.8 A license from ANEEL (Electricity National Agency) was required, but, up to now, was not provided (see Table 3, item 1.1)	F.1.2	*This is missing. A document proving the request from COSIPAR to ANEEL It will be sent.*	Cosipar once more sent a request for ANEEL on March 21st, 2005, as evidenced by ANEEL GENERAL PROTOCOL. The clarification request is closed.
CL.9 It is not clear if the web site was the only way or effectively letters to local stakeholders were sent too.	G.1.4	*Clarifications added to item G.1 of PDD. Besides website consultation, letter were send to specific stakeholders considered by Resolution number 1 of DNA, previously demonstrated.*	The information given is considered sufficient, and the clarification request is closed.

REFERENCES

2 - Appendix B1 of the simplified modalities and procedures for small-scale CDM project activities – Version 03 – 30/06/2004;
3 - Appendix C1 of the Simplified Modalities and Procedures for Small-Scale CDM project activities

- o0o -