VALIDATION REPORT
COMPANHIA ENERGÉTICA RIO DAS FLORES

VALIDATION OF THE
Bundled Estelar CDM Project

REPORT NO. BRAZIL-VAL/03917/2008

REVISION NO. 04.1

BUREAU VERITAS CERTIFICATION

VALIDATION REPORT

Date of first issue: 24/10/2008	Organizational unit: Bureau Veritas Certification Holding SAS
Client: CIA Energética Rio das Flores – Energética Saudades S/A	Client ref.: Luciano Quadros

Summary:
Bureau Veritas Certification has made the validation of the Bundled Estelar CDM Project (hereafter called " Estelar Project") ,of Cia Energética Rio das Flores and Energética Saudade S/A, located in Florianópolis – SC and Saudades – SC, South Region of 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) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

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.
In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology AMS-I.D – "Indicative Simplified Baseline and Monitoring Methodologies for selected small-scale CDM project activity categories, Type I – Renewable Energy Projects, I.D Grid Connected Renewable Electricity Generation, version 13" and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.
The differences between this Validation Report version 4 and the previous Validation Report version 3 are:
- Utilization of version 5 of the PDD, of July 27, 2009, with just one modification in its section A.2, required by the Brazilian DNA, excluding the term "(hereafter referred to as "Estelar Project"); ; and
- Change of the Validation Report Template to a new version, according to the requirements of the Clean Development Mechanism Validation and Verification Manual, version 01 (Annex 3 of EB 44 Report).
- The differences between this Validation Report version 4.1 and the previous Validation Report version 4 are related just to the inclusion of the term "Bundled" in the project title in order to clear up the classification of this project activity as bundle ; the revision of item 3.6.4 regarding the validation opinion on the input values applied to the IRR calculation, and the correction of inconsistency of the IRR values described in the PDD and validation report for SHP Belmonte and SHP Bandeirantes which are 8.74% and 8.56% respectively as it was described at the PDD. These revisions were requested due the UNFCCC completeness check , as described in its e-mail of 15/12/2009 . The PDD was revised to version 5.1, changing only the title of the project, to meet item 2 of this e-mail .

Report No.: BRAZIL-Val/03917/2008	Subject Group: CDM	
Project title: Bundle Estelar CDM Project		
Work carried out by: Antonio Daraya – Lead GHG Verifier Marco F. Prauchner – Verifier; Bernardo Aleksandravicius – Financial Specialist		
Work verified by: Ashok Mammen - Internal Technical Reviewer		
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Indexing terms

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Abbreviations

ACM	Approved Consolidated Methodology
ANEEL	Agência Nacional de Energia Elétrica
BMS	BVQI Management System
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CH4	Methane
CL	Clarification Request
CO_2	Carbon Dioxide
DIS	Draft of International Standard
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
FATMA	Environmental Protection Foundation – State of Santa Catarina
GHG	Green House Gas(es)
I	Interview
IETA	International Emissions Trading Association
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organisation for Standardization
LAI	Installation License
LAO	Operation License
LAP	Preliminary License
MoV	Means of Verification
MP	Monitoring Plan
NGO	Non Government Organization
OM	Operating Margin
ONS	Operador Nacional do Sistema Elétrico (National Operator of the Electrical System)
PBA	Basic Environmental Project
PCF	Prototype Carbon Fund
PDD	Project Design Document
RAS	Report of Simplified Analysis
RDPA	Report Detailing Environmental Programs
SIN	Sistema Interligado Nacional (National Interconnected System)
UNFCCC	United Nations Framework Convention for Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

Companhia Energética Rio das Flores and Energética Saudades S/A have commissioned Bureau Veritas Certification to validate their Bundled Estelar CDM Project, (hereafter called "Estelar project"), located in Florianópolis – SC and Saudades – SC, South Region of Brazil.

This report summarizes 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 project design verification and is a requirement of all projects. The validation is an independent third party assessment of 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 meet 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 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.

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.

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 Validation team

The validation team consists of the following personnel:

Antonio Daraya
Bureau Veritas Certification - Lead GHG Verifier
Marco F. Prauchner
Bureau Veritas Certification - Team Member, Climate Change Verifier
Bernardo Aleksandravicius
Bureau Veritas Certification - Financial Specialist

Ashok Mammen
Bureau Veritas Certification - Internal Technical Reviewer

2 METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 01 of the Clean Development Mechanism Validation and Verification Manual, issued by the Executive Board at its 44 meeting on 28/11/2008. The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, 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 completed validation protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Project Design Document (PDD) submitted by Companhia Energética Rio das Flores and Energética Saudades S/A and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (CDM-PDD), Approved methodology, Kyoto Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests Companhia Energética Rio das Flores and Energética Saudades S/A revised the PDD and resubmitted it on 27/07/2009 as version 5.

Due the UNFCCC completeness check a new version of the PDD was issued as version 5.1, where the only change was the title of the project .

2.2 Follow-up Interviews

On 02/10/2008 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Energética Saudades S/A and Cia Energética Rio das Flores were interviewed (see References).

The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Energética Saudades S/A and Cia. Energética Rio das Flores	►Project description ►Technology used ►Operational aspects ►Contribution towards sustainable development. ►QA/QC procedures ►Internal review / verification mechanism ►Stakeholder meetings and response to stakeholder comments ►Project category ►Baseline & Additionality ►Monitoring Plan
Enerbio Consultoria Ltda	►Project description ►Technology used ►Operational aspects ►QA/QC procedures ►Internal review / verification mechanism ►Project category ►Baseline & Additionality ►Monitoring Plan

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

Corrective Action Requests (CAR) is issued, where:

(a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
(b) The CDM requirements have not been met;
(c) There is a risk that emission reductions cannot be monitored or calculated.

The validation team may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

3 VALIDATION CONCLUSIONS

In the following sections, the conclusions of the validation are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol in Appendix A.

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 01 Corrective Action Request and 03 Clarification Requests.

The number between brackets at the end of each section correspond to the VVM paragraph

3.1 Approval (49-50)

The final decision from the DNA will be available only after its first ordinary meeting, after the receiving of all the required documents necessary for evaluation, including this validation report, according to Article 6 of the Resolution nº 1 of CIMGC – Comissão Interministerial de Mudança Global do Clima (Interministerial Comission of Global Climate Change).

A letter of approval was issued on September, 08th, 2009 for the project activity, but due the UNFCCC completeness check, a new one was required to indicate that the host Party is aware that the proposed project activity is part of a bundle.

3.2 Participation (54)

The participation for each project participant has not been approved yet by a Party of the Kyoto Protocol.
Please, refer to section 3.1 of this Validation Report.

3.3 Project design document (57)

The validation team hereby confirms that the PDD complies with:
- Project Design Document Form (CDM-SSC-PDD, version 03.
- Guidelines for completing the Simplified Project Design Document (CDM-SSC-PDD), Version 05.

3.4 Project description (64)

The project activity consists on the supply of clean hydroelectric electricity to the Brazilian National Interconnected System (SIN) through

the implantation and operation of Small Hydropower Plants (SHPs) Bandeirante, Barra Escondida, Belmonte and Prata, located in the state of Santa Catarina, Southern Region of Brazil, with an installed capacity of 11.85 MW, using a small reservoir, with low environmental impact.

The main objective of the SHPs Bandeirante, Barra Escondida, Belmonte and Prata is to help attending the growing demand for energy in Brazil, due to the country's economical and population growth, supplying clean and renewable energy, contributing, thus, to the environmental, social and economical sustainability, by increasing the participation of clean and renewable energy in relation to the country's total consumption of electricity.

The project activity reduces the emissions of green house gases (GHG), avoiding the generation of electricity through sources of fossil fuels with consequent CO2 emissions, which would be produced if the project did not exist. The supply of clean and renewable electricity will bring an important contribution to environmental sustainability, reducing the emissions of carbon dioxide taking place in the absence of this project.

Energética Saudades S.A is a special purpose company established in 2007 as an independent producer of electric energy with the objective of exploiting the hydraulic potential of Rio Saudades, in the state of Santa Catarina.

Companhia Energética Rio das Flores is also a special purpose company created to act in the area of electricity generation industry through the construction and implantation of SHPs Bandeirante, Barra Escondida, Belmonte and Prata. Its headquarters is located in the city of Florianópolis, Santa Catarina.

The implantation of the SHPs Bandeirante, Barra Escondida, Belmonte and Prata, is in the state of Santa Catarina, south region of Brazil.

SHP Barra Escondida will be implanted in the municipality of Saudades, in the Basin of Uruguai River, sub-basin 73, in Saudades River. The coordinates of the entrepreneurship are Latitude 26º54'14" South and Longitude 53º01'47" West.

SHP Belmonte will be constructed in Flores River, municipality of Belmonte, located in the coordinates 26º50'00" South and 53º40'00" West.

SHPs Bandeirante and Prata will also be constructed in Flores River, in the municipality of Bandeirante. SHP Bandeirante is located in the coordinates 26º47'58" South and 53º40'00" West, and SHP Prata, in the coordinates 26º45'45" South and 53º39'56" West.

The access to the power plants of these SHPs will be done according to the description below:
- SHP Prata – the access to the region of this SHP is done through the city of São Miguel do Oeste, advancing 16km of paved road to the municipality of Bandeirantes, following westwards the secondary access to the community of Prata.
- SHP Belmonte – the access to the region is done through the municipality of São Miguel do Oeste, advancing 13 km of paved road to the municipality of Descanso, going westwards to Belmonte. From Belmonte, through a vicinal unpaved road in an interval of 9.5 km, we arrive at the site of the entrepreneuship, 2.76 km from Rio das Flores river's mouth.
- SHP Bandeirante – the access is also through São Miguel do Oeste, advancing 16 km of paved road towards the municipality of Bandeirante. From there, going south, in an interval of 3.2 km through a vicinal road, we arrive at the local of the entrepreneurship.
- SHP Barra Escondida – the access to the municipality of Saudades can be done through the motorway SC-469, 11 km from BR-282, in the West area of the state, entering the municipality of Pinhalzinho. From Saudades, the access to the PCH is done through an unpaved road.

CAR 01 was issued with respect to starting date format – Guidelines for completing the simplified project design document (CDM-SSC-PDD) and the form for proposed new small scale methodologies (CDM-SSC-NM), version 05.
It has been satisfactorily resolved and closed.
Refer to Appendix A.

The DOE hereby confirms that the project description in PDD version 05, of July 27, 2009, is accurate and complete in all respects.

3.5 Baseline and monitoring methodology

3.5.1 Baseline and monitoring methodology

The steps taken to assess the relevant information contained in the PDD against each applicability condition are described below:

The Estelar CDM project uses the Methodology AMS I.D – "Grid connected renewable electricity generation", Version 13 and the "Tool to calculate the emission factor for an electricity system", Version 01.1.
The category I-D applies to the project activities of renewable energy generation connected to a grid.
Estelar Project can be classified in the I.D. category, because it presents the following characteristics:
- The project activity consists on the supply of clean hydroelectric electricity to the Brazilian National Interconnected System through the implantation and operation of the Small Hydroelectric Power Plants

(SHPs) Bandeirante, Barra Escondida, Belmonte and Prata, displacing, this way, electricity generated from fossil fuels that would occur in the absence of the project.
- The project activity has a total installed capacity of 11.85MW, not exceeding 15MW of maximum capacity, limit stipulated for the classification of a project as a small scale one.
The baseline of the project, related to the generation of renewable energy connected to the grid, is the kWh produced by the renewable generating unit multiplied by an emission factor (measured in tCO2e/kWh) calculated in a transparent and conservative manner according to a combined margin (CM), resulted of the combination of operating margin (OM) and build margin (BM), according to the procedures prescribed in the "Tool to calculate the emission factor for an electricity system", Version 01.1.
The DOE hereby confirms that the selected baseline and monitoring methodology methodology AMS I.D – "Grid connected renewable electricity generation", Version 13 and the "Tool to calculate the emission factor for an electricity system", Version 01.1, are previously approved by the CDM Executive Board, and are applicable to the project activity, which, complies with all the applicability conditions therein.

The DOE hereby confirms that, as a result of the implementation of the proposed CDM project activity, there are not greenhouse gas emissions occurring within the proposed CDM project activity boundary, which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.
The emission reductions resulting from the project will amount to 9,991 tCO2e per year.

3.5.2 Project boundary (79)

The DOE validated the project boundary by:
According to the methodology I.D, the boundary of a renewable energy generation connected to the grid project encompasses the physical and geographical site of the renewable generation source. Thus, the Estelar Project Boundary is restricted to the physical-geographical area of localization of the SHPs.
During the site visit to the Company office, located in Florianópolis, SC, occurred on 02/10/2008, it was possible to check the implementation time schedule of the SHP Barra Escondida and all the documentation related to the project, such as legal permits.
The SHP Barra Escondida was still on its initial phase, starting the civil works.
The other 3 SHPs Bandeirante, Belmonte and Prata, were in the project phase and negotiations with the Construction Company and with the Equipments suppliers.

Based on the above assessment, the DOE hereby confirms that the idendified boundary and the selected sources and gases are justified for the project activity.

3.5.3 Baseline identification (86-87)

The steps taken to assess the requirement given in paragraph 80 and 81 of the VVM are described below:

The baseline of the project, related to the generation of renewable energy connected to the grid, is the kWh produced by the renewable generating unit multiplied by an emission factor (measured in tCO2e/kWh) calculated in a transparent and conservative manner according to a combined margin (CM), resulted of the combination of operating margin (OM) and build margin (BM), according to the procedures prescribed in the "Tool to calculate the emission factor for an electricity system", Version 01.1.

The baseline emission factor (BEy) resulted from the electricity supplied by the project activity to the grid and is calculated, as follows:

BEy = EGy* EFgrid,CM,y

Where:

BEy = Baseline Emissions in year y (tCO2e/year)
EGy = Electricity supplied by the project activity to the grid (MWh)
EFgrid,CM,y = Combined margin CO2 emission factor for grid connected power generation in year y, calculated using the latest version of the "Tool to calculate the emission factor for an electricity system".

The baseline emission factor (EFgrid,CM,y) is calculated as the weighted average of operating margin emission factor and build margin emission factor, as described below:

EFgrid,CM,y = EFgrid, OM,y * W OM + EFgrid, BM,y * W BM Equation 2

Where:
EFgrid, BM,y = Build margin CO2 emission factor in year y (tCO2e/ MWh)
EFgrid, OM,y = Operating Margin CO2 emission in year y (tCO2e/ MWh)
W OM= Weight of operating margin emissions factor (%)
W BM = Weight of build margin emissions factor (%)

Based on the above assessment, the DOE hereby confirms that:

(a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
(b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
(c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
(d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
(e) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

According to the "Tool to calculate the emission factor for an electricity system", the DNA (Designated National Authority) of the project host country has published a delineation about the project's electricity system and about the connected electricity system. These delineations must be used.
This way, according to the Resolution # 8, of May 26, 2008, the Brazilian DNA defined that the National Interconnected System must be considered as an Unique Electricity System and that this configuration will be valid for calculating the CO2 emission factors to be used to estimate the emission reductions of the greenhouse gases for CDM projects of electricity generation connected to the national interconnected grid.

3.5.4 Algorithms and/or formulae used to determine emission reductions (91-92)

The steps taken to assess the requirement outlined in paragraph 88 the VVM are described below:
The baseline emission factor (BEy) resulted from the electricity supplied by the project activity to the grid and is calculated, as follows:

BEy = EGy* EFgrid,CM,y
Where:

BEy = Baseline Emissions in year y (tCO2e/year)
EGy = Electricity supplied by the project activity to the grid (MWh)
EFgrid,CM,y = Combined margin CO2 emission factor for grid connected power generation in year y, calculated using the latest version of the "Tool to calculate the emission factor for an electricity system".

The baseline emission factor (EFgrid,CM,y) is calculated as the weighted average of operating margin emission factor and build margin emission factor, as described below:

EFgrid,CM,y = EFgrid, OM,y * W OM + EFgrid, BM,y * W BM Equation 2
Where:
EFgrid, BM,y = Build margin CO2 emission factor in year y (tCO2e/ MWh)
EFgrid, OM,y = Operating Margin CO2 emission in year y (tCO2e/ MWh)
W OM= Weight of operating margin emissions factor (%)
W BM = Weight of build margin emissions factor (%)
According to the "Tool to calculate the emission factor for an electricity system", the DNA (Designated National Authority) of the project host country has published a delineation about the project's electricity system and about the connected electricity system. These delineations must be used.

This way, according to the Resolution # 8, of May 26, 2008, the Brazilian DNA defined that the National Interconnected System must be considered as an Unique Electricity System and that this configuration will be valid for calculating the CO2 emission factors to be used to estimate the emission reductions of the greenhouse gases for CDM projects of electricity generation connected to the national interconnected grid.

From May 26, 2008 on, the Brazilian Designated National Authority started to publish the operating margin emission factors through the method of dispatch data analysis and the build margin emission factors for the Brazilian Electrical System, following the methodological tool "Tool to calculate the emission factor for an electricity system", approved by the Executive Board of CDM and published in annex 12 of CE's Report EB 35.

The CO2 emission factors from electricity generation verified in the Brazilian National Interconnected System (SIN) are calculated based on the generation record of plants centrally dispatched by ONS. The procedures for calculation were elaborated in cooperation among ONS, the Ministry of Mines and Energy (MME) and the Ministry of Science and Technology (MCT).

As for the calculation of the operating margin emission factor through the dispatch data analysis, the Brazilian Designated National Authority uses the generation dispatch data centrally dispatched by ONS. This data must be updated annually during the monitoring period.

For the first crediting period, the build margin emission factor shall be updated annually, ex-post, including those units built up to the year of registration of the project activity or, if information up to the year of registration is not yet available, including those units built up to the latest year for which information is available. For the second crediting period, the build margin emission factor shall be calculated ex-ante. For the third crediting period, the built margin emission factor calculated for the second crediting period should be used.

The build margin emission factor for the year 2007 was used for the ex-ante estimation of CERs generation, since they are the latest data available. All the necessary information and the calculations have been checked by Bureau Veritas Certification's Verifiers.

Ex-ante calculation of emission reductions

According to the methodology I.D, version 13, if the energy generation equipment is transferred from another activity or if the equipment is transferred to another activity, leakage must be considered. In case of Estelar Project, new equipments will be used, manufactured for the activity. So, there will be no leakage.
Therefore, Estelar Project emission reductions correspond to the baseline emissions of the project.
As already has been stated, Emission Reductions are calculated as follows:

$BEy = EGy^* EFgrid,CM,y$

where the quantity of electricity supplied to the grid by the project will be multiplied by the combined margin emission factor, being the operating margin emission factor calculated according to dispatch data analysis OM and the BM build margin emission factor will be calculated through the option 2 of step 4 of the Annex 12 – Methodological Tool, version 01.1, Tool to calculate the emission factor for an electricity system, which considers that this emission factor must be updated ex-post. Besides, it will be considered 0.5 for the weights that form the Combined Margin Emission Factor.
Table 13 of section B.6.3 of the PDD demonstrates the assumptions made and the calculation of EGy during the first 7 year crediting period.
Table 14 of section B.6.3 of the PDD demonstrates how EFgrid,CM,2007 has been calculated, based on EFgrid,OM,2007 and EFgrid,BM,2007.
Based on that information, the emission factor which will be used for ex-ante estimation of emission reductions of Estelar Project is 0.1842, which was obtained from simple monthly arithmetic average of National Interconnected System, EFgrid,CM,2007.
Table 15 of section B.6.3 of the PDD shows the ex-ante estimation of Emissions Reduction in tCO2e of Estelar Project, during the first 7 year crediting period:

Estimated Emission Reductions = 69,939 tCO2e, or an average of

9,991 tCO2e/year.

Based on the above assessment, the DOE hereby confirms that:

(a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
(b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
(c) All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
(d) The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions;
(e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

Brazilian Emission Factor Validation

In order to comply with the guidance provided by the EB-CDM, on its 43rd meeting, regarding the validation of grid emission factors made available to project participants for use in CDM project activities by some DNAs, the Brazilian DNA sent, in January 2009, official letters addressed to several DOEs inviting them for a meeting with the purpose to grant the opportunity for the DOEs to have access to the calculation of the emission factor of the national grid system.

The DOEs representatives had access to confidential data and were requested by Mr. Miguez from the Brazilian DNA that such information must not be disclosed for national strategic and market reasons.

The DOEs members had the opportunity to: i) assess the formulae used in the calculation spreadsheet; ii) to be informed about the sources of data and information used in the calculation spreadsheet; and, iii) to discuss and to take note of the assumptions adopted by the calculation working group from the Brazilian DNA.

A new meeting was conceded by the Brazilian DNA in order to allow two DOEs representatives to check the findings of the first meeting of 05 February 2009 regarding the Brazilian grid emission factor calculation again.

The second meeting took place in MCT's office, located at Praia do Flamengo, n° 200 – 7th floor, Rio de Janeiro, on 24 July 2009. The following participants attended the meeting: Mr. Newton Paciornik and Ms. Ana Carolina Avzaradel, both from MCT, on behalf of the Brazilian DNA, and; Mr. Ricardo Fontenele (BVC Holding SAS) and David Freire da Costa (DNV), both representing the group of DOEs.

During this second meeting, the DOEs' representatives were able to assess and verify a larger range of samples used in the emission factor calculation spreadsheets. Operating Margin (OM) and Build Margin (BM) data, sources, references, formulas and calculation were verified for the years 2007 and 2008. For the year 2009, only the OM calculation was verified, because the BM for the referred year will be only calculated after

the end of 2009, as the Brazilian DNA needs to gather annual consolidated information from the power plants serving the Interconnected National System. In addition, the results of the emission factor calculation spreadsheets were cross-checked with the information made available at the Brazilian DNA website, on a sampling basis, and no discrepancy or inconsistencies of the verified values were found.

The second meeting, on 24 July 2009, was extremely useful for the DOEs' members to assess cross-check and verify complementary data and related information used in the emission factor calculation spreadsheets, given even more credibility and assurance of the calculation provided by the Brazilian DNA.

It was a common sense of the DOEs members, that the calculations provided in the spreadsheet are clearly and transparently demonstrated. The formulae, equations and steps followed in the calculations are in accordance to the "Tool to calculate the emission factor for an electricity system (Version 01.1)". The assumptions made in the calculations are considered reasonable and acceptable.

Under consideration of the general conditions, the group of DOEs express through this document a final favorable validation opinion in regards of the results from the calculation of the emission factor of the Brazilian grid system provided by the Brazilian DNA.

3.6 Additionality of a project activity (95)

The Attachment A of appendix B of Simplified modalities and procedures for small-scale CDM project activities establishes that the project participants shall provide an explanation to show that the Project activity would not have occurred anyway due to at least one of the following barriers:

(a) Investment barrier: a financially more viable alternative to the Project activity would have led to higher emissions;
(b) Technological barrier: a less technologically advanced alternative to the Project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the Project activity and so would have led to higher emissions;
(c) Barrier due to prevailing practice: prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions;
(d) Other barriers: without the Project activity, for another specific reason identified by the Project Participants, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or capacity to absorb new Technologies, emissions would have been higher.

Before analyzing the barriers faced by Estelar Project, it is necessary to describe the alternative scenarios that would probable take place in the absence of the project activity.
The realistic alternatives to the project activity are:
- The continuity of the current situation, with electricity being generated by the current composition of generation of the National Interconnected System, more specifically Subsystem South;
- The construction of new thermal power plant;
- The implementation of project without incentives from CDM.

According to the Project, the barriers faced by the project are:
a) Investment barrier.
c) Barrier due to prevailing practice.
Items a) and c) will be analysed in item 3.6.4 of this report.

3.6.1 Prior consideration of the clean development mechanism (102)

The starting date of the project activity is 15/02/2008, which is the starting date of the SHP Barra Escondida construction.
The evidence used by the DOE to prove this date was the date when the contract with the construction company was signed.
As the start date of the project activity is before August 02, 2008 and the start date is prior to the date of the publication of the PDD for Global Stakeholder consultation, which occurred in the period of August 29 to September 27, 2008, Project Participants should prove that the CDM was seriously considered in the decision to proceed with the project activity.
It is described below the evidences of the project participants' awareness of the CDM prior to the project activity start date and the actions that were taken to secure the CDM Status:
> The Board of Directors Meeting Minute, of December 01, 2007, shows that the CDM was seriously considered. This minute establishes that the company must hire a consulting company to develop the Carbon Credit Project to make possible future revenues to adequate the project economic situation with market rates of return and make the project feasible;
> From this date, the entrepreneurs started to look for project developers in the Brazilian Market through emails and phone calls. One of the companies consulted was Enerbio Consultoria;
> In item 7 of the Board of Directors Meeting Minute, of May 06, 2008, it was established the necessity of evaluation of the proposals for carbon credit project development;
> On June 25, 2008, Enerbio Consultoria sent the proposals to the entrepreneurs;
> On June 26, 2008, Enerbio Consultoria sent an email to the entrepreneurs requiring information to develop the PDD;
> On July 01, 2008, Enerbio Consultoria and Entrepreneurs (Energética Saudades e Energética Rio das Flores) signed a contract which

establishes that Enerbio Consultoria has the responsibility to develop the CDM Project and to negotiate the CERs. A copy of some pages of this contract where the object and the assignment date can be seen was provided to DOE;
> On July 24, 2008, Enerbio Consultoria sent an email requiring DOE proposals to validate the CDM Projects;
> On August 15, 2008, project participants accepted the proposal of Bureau Veritas Certification Holding SAS to perform the validation process.

All Minutes and e-mails mentioned were supplied to the DOE.

Based on the above assessment, the DOE hereby confirms that the proposed CDM project activity complies with the requirements of EB41.

3.6.2 Identification of alternatives (105)

The DOE considers the list of alternatives complete.

3.6.3 Investment analysis (112)

This section has not been used to demonstrate additionality.

3.6.4 Barrier analysis (116)

a) investment barrier.

In accordance with paragraph 28 of the simplified modalities and procedures for smalls cale CDM project activities, the additionality of the project activity has been demonstrated using Attachment A to Appendix B (additionality tool for small scale project activities*). As all requirements specified vide § 28 of the simplified modalities and procedures are complied with by the project activity, this approach has been assessed to be appropriate for the additionality assessment for this project activity.

Investment Analysis

Validation Team adopted a six-pronged strategy to ascertain the veracity of the conclusion drawn by the project developer:

a) evaluating the appropriateness of the benchmark applied for the type of financial indicator presented;
b) conducting an assessment of parameters and assumptions used in calculating the financial indicator and determining the accuracy and suitability of parameters;
c) cross-checking the parameters against third-party or publicly available sources;
d) reviewing annual financial reports related to the project participant;
e) assessing the correctness of computations carried out and documented; and

* Classification as per Attachment A to Appendix B of the simplified modalities and procedures a)
investment barrier; b) technological barrier; c) barrier due to prevailing practice; d) other barriers

f) subjecting the critical assumptions of the project activity to reasonable variations to determine under what conditions variations in the result would occur, and the likelihood of these conditions.

a) Suitability of financial indicator and benchmark: The project participant has chosen IRR to demonstrate the additionality of the project. Additionality Tool (Ver. 05.2) permits the use of financial indicator, IRR, for demonstrating the additionality using benchmark analysis. The tool permits the use of either project IRR or equity IRR. Since the project developer is demonstrating the financial unattractiveness of the project, IRR is appropriate, as it is often used by the project developers to make a decision on investing in the project. As such, the selection of IRR as financial indicator to demonstrate the additionality of the project is appropriate conforms to the Additionality Tool.
Additionality tool (ver.05.2) states that the discount rates and benchmarks shall be derived from "company internal benchmark (weighted average capital cost of the company), only in the particular case referred to above in paragraph 5", among others. The paragraph 5 states "When applying Option II or Option III, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the project activity can be implemented by the project participant, the specific financial/economic situation of the company undertaking the project activity can be considered."
The project participant has chosen the weighted average cost of capital (WACC) of the project activity has been used as benchmark to assess the financial attractiveness of the project activity to demonstrate additionality.
BVC has accepted the WACC as the benchmark based on the following:
The total finances obtained for the project include two components, loan and equity. Hence, the project IRR is based on the total investment (including the debt and the equity portions). In order to evaluate the financial viability of the project, the project developer is required to assess the expected minimum returns on all components of the investment made. Therefore, the benchmark selected needs to be such that, the expected minimum returns take into consideration the risks associated with each of the components of the total investment. Thus, from an investor's perspective, the WACC is one of the most appropriate and common benchmarks for comparing project IRR, since it is the weighted average of the total cost of the different components of the investment. Besides according to ANEEL "The standard methods promote the necessary transparency to regulatory practices and provide greater certainty about what are the determinants of the rate of return and how they influence it. Among the standard methods, the "Weighted Average Cost of Capital", in conjunction with the Capital Asset Princing Model (CAPM / WACC) is the most widespread worldwide."[*]
BVC was able to confirm the correctness of the WACC based on the following evidences that were reviewed:
- BVC verified that the cost of equity is 24.95% for SHP Barra Escondida and SHP Prata, and 27.06% for SHP Belmonte and SHP Bandeirante,

[*] http://www.aneel.gov.br/arquivos/PDF/NT_WACC%20Remunera%C3%A7%C3%A3o%20de%20Capital.pdf

based on document forwarded by the company, which uses the Capital Asset Pricing Model (CAPM) to calculate the cost of equity. All the data (rate of return of U.S. Treasuries of 30 years, median of Brazilian Risk between 2003 and 2008, average adjustment between U.S. and Brazilian Inflations between 2003 and 2008, levered Beta between the Electric Energy Index and Bovespa Index for the period from 2003 to 2008, and Equity Risk Premium in Brazil) were checked and the sources validated by BVC. This information is available at pages 15 and 16 of PDD.
The ESTELAR Cost of Equity was calculated according the equation below (page 15 of PDD):

$$Re = Rf + \beta i\,(ERP)$$

Re = Cost of capital
Rf = Risk free + Inflation adjustment
βi = Beta
ERP = Equity risk premium

SHP Barra Escondida

CAPM	24.95%
Risk Free Asset (Treasury 30y)*	6.71%
Beta	1.56
Risk Premium	7.79%
Brazilian Risk (2003-2007)	3.14%
Inflation Adjustment (2003 - 2007)	2.92%

SHP Belmonte

CAPM	27.06%
Risk Free Asset (Treasury 30y)	6.71%
Beta	1.83
Risk Premium	7.79%
Brazilian Risk (2003-2007)	3.14%
Inflation Adjustment (2003 - 2007)	2.92%

SHP Bandeirante

CAPM	27.06%
Risk Free Asset (Treasury 30y)	6.71%
Beta	1.83
Risk Premium	7.79%
Brazilian Risk (2003-2007)	3.14%
Inflation Adjustment (2003 - 2007)	2.92%

SHP Prata

CAPM	24.95%
Risk Free Asset (Treasury 30y)	6.71%
Beta	1.56
Risk Premium	7.79%
Brazilian Risk (2003-2007)	3.14%
Inflation Adjustment (2003 - 2007)	2.92%

- BVC could verify that the cost of debt, according to documents forwarded by the project proponent, is:

Project	Cost of Debt
SHP Barra Escondida	**10.25%**
SHP Belmonte	**9.75%**
SHP Bandeirante	**9.75%**
SHP Prata	**9.75%**

- The ESTELAR Weighted Average Capital Cost was calculated according the equation below (page 14 of PDD):

$$WACC = \frac{E}{V} * Re + \frac{D}{V} * Rd * (1 - Tc)$$

Where:
E/V = Percentage of Equity in the Capital Structure of the Company;
Re = Cost of Equity;
D/V = Percentage of Debt in the Capital Structure of the Company;
Rd = Cost of Debt
Tc = Income Tax in Brazil + Social Contribution

OBS 1: Income tax in Brazil is 25% and social contribution is 9%* (page 16 of PDD).
OBS 2: Capital Structures:

SHP Barra Escondida

WACC	12.22%
Total Capital	9,399,000
Equity	2,819,700
%	30%
Debt	6,579,300
%	70%
Cost of Equity	24.95%
Cost of Debt	10.25%
Income Tax + Social Contribution	34%

* http://www.receita.fazenda.gov.br/Aliquotas/default.htm

SHP Belmonte

WACC	11.59%
Total Capital	18,200,000
Equity	4,550,000
%	25%
Debt	16,650,000
%	75%
Cost of Equity	27.06%
Cost of Debt	9.75%
Income Tax + Social Contribution	34%

SHP Bandeirante

WACC	11.59%
Total Capital	15,600,000
Equity	3,900,000
%	25%
Debt	11,700,000
%	75%
Cost of Equity	27.06%
Cost of Debt	9.75%
Income Tax + Social Contribution	34%

SHP Prata

WACC	11.99%
Total Capital	16,400,000
Equity	4,920,000
%	30%
Debt	11,480,000
%	70%
Cost of Equity	24.95%
Cost of Debt	9.75%
Income Tax + Social Contribution	34%

BVC agrees with all the data used in Benchmark calculations and would like to point out that they are clearly presented, available to consult and correct.

b) Parameters and assumptions used: The five important parameters, which determine the IRR of the project, are total amount of investment, power tariff, installed capacity, PLF and project's costs. The project total investment considered in the financial analysis is based on construction costs and license costs. The project cost includes, civil works, erection & installation charges, administrative expenses, taxes, O&M costs and insurance during construction. The installed capacity is a computed figures based on the number of generators installed and the capacity thereof. The PLF was approved by the Regulator - Aneel. Power tariff is based on PPA (power purchase agreement), which was determinated by Aneel. The validation team is convinced as they are found reasonable and valid.

c) Cross checking parameters:The energy price of each project were cross-checked with the respectives PPAs. The PLF and the installed capacity were cross-checked with document of Ministry of Mines and Energy*. The total investment of each project were cross-checked by price indexes and financing contract. Based on the informations above the DOE concluded that the input costs considered appear to be valid and consistent.

d) Financial reports of project participant: DOE requested the Financial Reports of the project participants and the same was provided. None of the input values taken in the computation can be based on the Annual Accounts , because the company's project participant was constituted for the sole purpose of developing the Estelar project activity, then it was a brand new and had no relevant financial assets at the time of decision-making. So the audited financial reports were developed later of the date of the decision-making. Then the BVC concluded that the financial reports do not provide much help to validate the input data from financial analysis. See items b and c, for mails details about input values.

e) Assessment of correctness of computation: BVC checked all formulas in all sreadsheets presented by the project proponent. The assessment involves checking the data input taken from quotation/documents, adoption of correct accounting principle and arithmetical accuracy. BVC checked the quotation/ documents and ensured that right input has been taken in the project cost and projections. The accounting principles adopted for computing depreciation, tax, costs are found to be in order. The arithmetical accuracy is also found to be correct. The principle adopted by the project participant for computing IRR is in conformity with the “Guidance on the Assessment of Investment Analysis“ issued by EB. IRR has been computed for 30 years. Since the entire assets have been fully depreciated, the salvage value has been taken 0% of equipment cost, which appears reasonable. In computing the IRR, the PP has taken into account profit before depreciation and tax, which seems to be very conservative.
Based on the above, the IRRs of the projects were lower in contrast to the benchmarks. In the above background, BVC is convinced that the project is additional and not a business-as-usual scenario. However, the conclusion was checked by subjecting the critical assumptions to reasonable variations.

* SHP Prata, SHP Bandeirantes and SHP Belmonte:
http://www.mme.gov.br/mme/galerias/arquivos/noticias/2008/09_setembro/Portaria32.pdf
SHP Barra escondida:
http://www.mme.gov.br/mme/galerias/arquivos/legislacao/portaria/Portaria_n_66-2007.pdf

Project	IRR	WACC
SHP Barra Escondida	**10.17%**	**12.22%**
SHP Belmonte	**8.74%**	**11.59%**
SHP Bandeirante	**8.56%**	**11.59%**
SHP Prata	**8.10%**	**11.99%**

f) Sensitivity analysis: The Guidance on Assessment of Investment Analysis requires the robustness of the conclusion arrived at to be proved through a sensitivity analysis by varying the critical assumptions to a reasonable variation (± 10%). To confirm how solid the investment analysis is, project participants presented a sensitivity analysis with just the scenarios which contribute to increase the project financial and economic attractiveness, varying the most important parameters for the cash flow for each SHP: (i) the electricity price, (ii) the total amount of investment and (iii) plant load factor. In this case the sensitivity analysis of the plant load factor produce the same results of the sensitivity analysis of electricity price.
The sensitivity analysis confirmed that the SHPs of Estelar Project are not financially attractive once the project internal rates of return are lower than the weighted average capital cost of them in all scenarios analyzed. Sensitivity analysis is available in table 11, at Page 17 of PDD.

Conclusion

Based on the foregoing, BVC has concluded that the project activity faces investment barrier in as much as the IRR is less than the benchmark return and will continue to remain additional even under most optimistic conditions (based on sensitivity analysis), and Thus the validation team has arrived at the conclusion that the project activity is
additional and is not a business-as-usual case. The CDM registration would help PP in
overcoming the barrier identified above.

CL 01 was issued with respect to Baseline/Additionality. It has been satisfactorily resolved and closed.
Refer to Appendix A.

The DOE hereby confirms that the barrier analysis performed is credible.

3.6.5 Common practice analysis (119)

According to item 117 of the Clean Development Mechanism Validation and Verification Manual, Common Practice Analysis is only applicable to large scale CDM project activities.
As the project activity Estelar CDM project is a small scale project, this section 3.6.5 is not applicable.

3.7 Monitoring plan (122)

The DOE hereby confirms that the monitoring plan complies with the requirements of the methodology.

The steps taken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described below.

The project applies the same monitoring methodology and plan for all SHPs according to the AMS I.D, version 13, Grid connected renewable electricity generation.
Reference to discussions on the applicability of the methodology is at section 3.5.1 above.
Based on the methodology AMS – I.D, the parameter to be monitored is the electricity supplied by the project activity to the grid.
The energy measurement is essential to verify and monitor the GHGs emission reductions. It is necessary, therefore, the use of metering equipment to register and check the electricity generated by the unit.
All data collected as part of monitoring will be archived and be kept at least for 2 years after the end of the last crediting period. All measurements will be conducted with calibrated measurement equipment, according to the Brazilian industry standards.
The following data and parameters will be monitored:
- Electricity Generated EGy - Electricity supplied by the project activity to the grid, in MWh.
The value of data will be periodically monitored. For ex-ante estimation of emission reduction, it was used the Assured energy of SHPs Bandeirante, Barra Escondida, Belmonte and Prata, with a value of 1.76 MW, 1.25 MW, 2.02 MW and 1.68 MW, respectively.
Spreadsheets will be used, obtained directly from the meters with information generated hourly or every 15 minutes. Monthly, the information will be checked with the generation spreadsheets available at the website of CCEE.
Besides, if necessary, information of generation can be checked by receipt of sales.
- EFgrid,CM,y – Combined Margin CO2 Emission Factor for grid connected power generation in year y, calculated using the latest version of the “Tool to calculate the emission factor for an electricity system”, in tCO2e /MWh.
The combined margin CO2 emission factor used in Estelar Project will be calculated based on data supplied by the Brazilian DNA for the National Interconnected System.
Ex-post emission factor will be calculated by Enerbio Consultoria through ONS data supplied by Brazilian DNA. The variables EFgrid,OM,y and EFgrid,BM,y, necessary for EFgrid,CM,y calculation, will be also monitored and calculated through the Dispatch Data of the National Interconnected System.

The values of EFgrid,CM,y Combined Margin CO2 Emission Factor which were used for ex-ante estimation of emission reduction of Estelar Project is 0.1842, which was obtained from simple arithmetic average of National Interconnected System monthly EFgrid,CM, 2007, as described on table 14 on the item B.6.3 and as described on the Annex 3 of the PDD.

CL 02 and CL 03 were issued with respect to monitoring plan. They have been satisfactorily resolved and closed.

Refer to Appendix A.

The DOE hereby confirms that the project participants are able to implement the monitoring plan.

3.8 Sustainable development (125)

The final decision from the DNA will be available only after its first ordinary meeting, after the receiving of all the required documents necessary for evaluation, including this validation report, according to Article 6 of the Resolution nº 1 of CIMGC – Comissão Interministerial de Mudança Global do Clima (Interministerial Comission of Global Climate Change).

A letter of approval was issued on September, 08th, 2009 for the project activity, but due the UNFCCC completeness check, a new one was required to indicate that the host Party is aware that the proposed project activity is part of a bundle.

3.9 Local stakeholder consultation (128)

The steps taken to assess the adequacy of the local stakeholder consultation are described below.

In accordance with the requirements of Resolution # 7, of the Brazilian Interministerial Commission on Global Climate Change, the Brazilian DNA (Designated National Authority), Local stakeholders were invited to comment on the project, as follows:

- SHPs Bandeirante and Prata:

City Hall of Bandeirante, Municipal Assembly of Bandeirante, Secretary of Agriculture of Bandeirante (responsible for issues related to the Environment in the municipality of Bandeirante), Association of Small Agriculturists of Linha Riqueza do Oeste – municipality of Bandeirante and Cooperative of Small Agriculturists of Biofuel - municipality of Bandeirante.

- SHP Belmonte:

City Hall of Belmonte, Municipal Assembly of Belmonte, Secretary of Agriculture of Belmonte (responsible for issues related to the Environment in the municipality of Belmonte) and Union of Rural Workers of Belmonte.

- SHP Barra Escondida:
City Hall of Saudades, Municipal Assembly of Saudades, Secretary of Agriculture of Saudades (responsible for issues related to the Environment in the municipality of Saudades) and Union of Rural Workers of Saudades.
Common Stakeholders:
Environment Foundation of the State of Santa Catarina (FATMA), State Secretary of Sustainable Development (responsible for issues related to the Environment in the state of Santa Catarina), State of Santa Catarina Attorney of Public Interests, Federal Attorney of Public Interests, Brazilian Forum of NGO's and Social Movements for Environment and Development.
The invitations have been sent to local stakeholders by Post, on August 07, 2008. The acknowledgements of receipt occurred in the period of August 11 to August 19, 2008.
It was received just one comment, sent by the State Secretary of Sustainable Development.
She made a favorable comment, saying that she does not oppose to the Estelar Project and sent compliments to the project participants for the initiative and for the contribution for the emission reductions of greenhouse gases.

The DOE hereby confirms that the process of local stakeholder consultation is observed to be adequate.

3.10 Environmental impacts (131)

During the Validation Visit, the following analyses of the environmental impacts were available:
- SHP Bandeirante: RAS and RDPA, from October/2006, elaborated by AGRIMENSURA Serviços Topográficos Ltda.
- SHP Belmonte: RAS and RDPA, from March /2007, elaborated by a Multidisciplinar Team.
- SHP Prata: RAS and RDPA from October/2006, elaborated by AGRIMENSURA Serviços Topograficos Ltda.
- SHP Barra Escondida: PBA from February / 2008.

The following licenses were also available and checked:

SHP Bandeirante: LAP nº 84/2006, issued in December 08, 2006 and valid for three years. It was issued also as a LAI, included in the same document.
SHP Belmonte: LAP nº 18/2007, issued on May 29th, 2007. LAI nº 92/2008, issued on May 20th, 2008, valid for 36 months.
SHP Prata: LAP nº 83/2006, issued on December 8th, 2006, valid for 36 months. It was issued also as a LAI, included in the same document.
SHP Barra Escondida: LAI nº 37/2008, issued on March 13th, 2008.Valid for 12 months.

The following ANEEL's Basic Project Approvals:
1041, of May 23, 2006, for SHP Barra Escondida.
#2375, 2376 and 2377, of June 06, 2008, for PCHs Prata, Bandeirante and Belmonte, respectively.
ANEEL's authorization # 66, of April 23, 2007, as an Electric Energy Independent Producer.

4 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of the Estelar CDM Project in Brazil. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the 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; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Project participants used the Attachment A of Appendix B of Simplified modalities and procedures for small-scale CDM project activities that establishes that the project participants shall provide an explanation to show that the Project activity would not have occurred anyway due to at least one of the following barriers:
(a) Investment barrier; (b) Technological barrier; (c) Barrier due to prevailing practice; (d) Other barriers.
Barriers a) and c) were analyzed. The conclusion is that:
Do not implement Estelar Project would result in (i) the continuation of the present situation, with electricity being generated by the current composition of the National Interconnected System, more specifically the South Sub-system (with the great presence of thermo electric power plants) or (ii) the construction of new thermoelectric power plants.
Thus, the implantation of SHPs of Estelar Project propitiates emission reductions, which would not occur in the absence of the project.

The project activity consists on the supply of clean hydroelectric electricity to the Brazilian National Interconnected System (SIN) through the implantation and operation of Small Hydropower Plants (SHPs) Bandeirante, Barra Escondida, Belmonte and Prata, located in the state of Santa Catarina, Southern Region of Brazil, with an installed capacity of 11.85 MW, using a small reservoir, with low environmental impact. The main objective of the SHPs Bandeirante, Barra Escondida, Belmonte and Prata is to help attending the growing demand for energy in Brazil, due to the country's economical and population growth, supplying clean and renewable energy, contributing, thus, to the environmental, social and economical sustainability, by increasing the participation of clean and

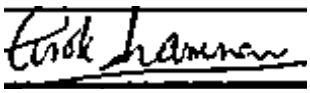
renewable energy in relation to the country's total consumption of electricity.
An analysis of the investment barrier and barrier due to prevailing practice demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional 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 version 05.1, of 31/01/2010, and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

The validation is based on the information made available to us and the engagement conditions detailed in this report.

Date: 31 January 2010

Ashok Mammen
Internal Technical Reviewer



Date: 31 January 2010

Antonio Daraya
Lead GHG Verifier

5 REFERENCES

Category 1 Documents:
Documents provided by Energética Saudades S/A and Companhia Energética Rio das Flores, that relates directly to the GHG components of the project

/1/ Project Design Document – Estelar CDM Project, version 1, of August 07, 2008.

/2/ Project Design Document – Estelar CDM Project, version 2, of October 03, 2008.

/3/ Project Design Document – Estelar CDM Project, version 3, of October 10, 2008.

/4/ Project Design Document – Estelar CDM Project, version 4, of February 26, 2009.

/5/ Project Design Document – Estelar CDM Project, version 5, of July 27, 2009.

/6/ Project Design Document – Bundle Estelar CDM Project, version 51, of January 31 , 2010

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

/1/ Resolução Interministerial 01. Comissão Interministerial de Mudança Global do Clima, Sep, 2003.

/2/ Resolução Interministerial 02. Comissão Interministerial de Mudança Global do Clima, Aug 2005.

/3/ Resolução Interministerial 05. Comissão Interministerial de Mudança Global do Clima, April 2007.

/4/ Resolução Interministerial 06. Comissão Interministerial de Mudança Global do Clima, June 2006.

/5/ Resolução Interministerial 07. Comissão Interministerial de Mudança Global do Clima, March 2008.

/6/ Resolução Interministerial 08. Comissão Interministerial de Mudança Global do Clima, May 2008.

/7/ Clean Development Mechanism Project Design Document Form (CDM-SSC-PDD) – Version 03.

/8/ Guidelines for completing the simplified Poject Design Document (CDM-SSC-PDD) Version 05.

/9/ AMS-I.D – Indicative Simplified Baseline and Monitoring Methodologies for Selected Small-Scale CDM Project Activity Categories, Type I – Renewable Energy Projects, I.D – Grid Connected Renewable Electricity Generation, version 13

/10/ Attachment A of appendix B of Simplified modalities and procedures for small-scale CDM project activities.

/11/ Annex 12 Methodological Tool – Tool to Calculate the Emission Factor for an Electricity System, Version 01.1.

/12/ Tool for the Demonstration and Assessment of Additionality – Version 05.2.

/13/ Kyoto Protocol to the United Nations Framework Convention on Climate Change. United Nations, Dec, 1997.

/14/ Clarifications on validation requirements to be checked by a Designated Operational Entity. UNFCCC/CCNUCC, Sep, 2004.

/15/ IETA/PCF – Validation and Verification Manual (v. 3.3, Mar 2004)

/16/ SHP Bandeirante: LAP nº 84/2006, issued in December 08, 2006 and valid for three years. It was Issued also as a LAI, included in the same document.

/17/ SHP Belmonte: LAP nº 18/2007, issued on May 29th, 2007. LAI nº 92/2008, issued on May 20th, 2008, valid for 36 months.

/18/ SHP Prata: LAP nº 83/2006, issued on December 8th, 2006, valid for 36 months. It was Issued also as a LAI, included in the same document.

/19/ SHP Barra Escondida: LAI nº 37/2008, issued on March 13th, 2008. Valid for 12 months.

/20/ ANEEL's Basic Project Approvals: # 1041, of May 23, 2006, for SHP Barra Escondida. #2375, 2376 and 2377, of June 06, 2008, for PCHs Prata, Bandeirante and Belmonte, respectively.

/21/ ANEEL's authorization # 66, of April 23, 2007, for SHP Barra Escondida, as an Electric Energy Independent Producer.

Persons interviewed:

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

/1/ Energética Saudades S/A and Companhia Energética Rio das Flores

Marcos V. Bogaert

/2/ Enerbio Consultoria Ltda.

Eduardo Baltar

1. o0o -

6. CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

Bureau Veritas Certification - Lead GHG Verifier
Antonio Daraya – is graduated in Chemical Engineering with a very large experience in Industrial and Environmental management in several industrial fields. He is ISO 9001:2000, ISO 14001:2004 and OHSAS 18001 Lead Auditor and has also experience in the implementation of Quality and Environmental Management Systems. Antonio is qualified as Lead Verifier GHG – Green House Gases.

Bureau Veritas Certification - Team Member, Climate Change Verifier
Marco F. Prauchner – is graduated in Mechanical Engineering with experience in Quality and Environmental management in mechanical, plastic and chemical industries. He is ISO 9001:2000 and ISO 14001:2004 Lead Auditor and has also experience in the implementation of Environmental Management Systems. Marco is qualified as Lead Verifier GHG – Green House Gases.

Bureau Veritas Certification – Financial Specialist
Bernardo Aleksandravicius is graduated in Business Administration with a very expressive experience in valuation of new projects in the electrical and technology sectors; Equity analyst with focus on the consumer staples, consumer discretionary, technology and telecommunications sectors for many companies in Brazil.

Bureau Veritas Certification - Internal Technical Reviewer
Ashok Mammen - PhD (Oils & Lubricants), MsC (Analytical chemistry). Over 20 years of experience in petrochemical sector. Dr. Mammen is a lead auditor for environment, safety and quality management systems and a lead verifier for GHG projects. He has been involved in the validation and verification processes of more than 50 CDM and other GHG projects.

2. o0o -

Bundled Estelar CDM Project
APPENDIX A: CDM PROJECT VALIDATION PROTOCOL

Table 1 Mandatory Requirements for Small Scale 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	The project will result in fewer GHG emissions than the baseline scenario.	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, Marrakesh Accords, CDM Modalities § 40a	The final decision from the DNA will be available only after its first meeting, after the receiving of all the documents necessary for evaluation, including this validation report, according to Article 6 of Resolução Interministerial 01/03 . A letter of approval was issued on September, 08th, 2009 for the project activity, but due the UNFCCC completeness check, a new one was required to indicate that the host Party is aware that the proposed	Table 4, Section 1.4

		project activity is part of a bundle.	
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC.	Kyoto Protocol Art.12.2.	The project will result in fewer GHG emissions than the baseline scenario.	Table 2, Section E.4.1
4.The project shall have the written approval of voluntary participation from the designated national authorities of each party involved, including confirmation by the host party that the project activity assists it in achieving sustainable development.	Kyoto Protocol Art. 12.5a, Marrakesh Accords, CDM Modalities §40a, §28.	Prior to the submission of the Project Design Document and the Validation Report to the CDM Executive Board, the Project will have to receive the written approval of voluntary participation from the DNA of Brazil, including the confirmation that the Project assists the country in achieving sustainable development. A letter of approval was issued on September, 08th, 2009 for the project activity, but due the UNFCCC completeness check, a new one was required to indicate that the host Party is aware that the proposed project activity is part	Table 4, Section 1.4.

		of a bundle.	
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	The project will result in fewer GHG emissions than the baseline scenario.	Table 2, Section E.4.1
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, Marrakesh Accords, CDM Modalities §43 and 44	The reduction in GHG emissions is additional to any that would occur in the absence of the project.	Table 2, section B.2.1
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance.	Marrakech Accords (Decision 17/CP.7)	There is no public funding involved. See annex 2 of PDD.	Declaration by the project participants in Annex 2 of PDD.
8. Parties participating in the CDM shall designate a national authority for the CDM.	Marrakech Accords, CDM Modalities §29	The Brazilian DNA is the Comissão Interministerial de Mudança Global do Clima	The Brazilian Designated National Authority for the CDM is the Comissão Interministerial de Mudança Global do Clima.
9. The host country shall be a Party to the Kyoto Protocol.	Marrakech Accords, CDM Modalities §30	The host country is a Party to the Kyoto Protocol	Brazil has ratified the Kyoto Protocol on 23/08/2002.
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 are evidences that stakeholders have been consulted. Only one comment has been received.	Table 2, section G
11. Documentation on the analysis of the environmental	Marrakech	Aiming at the identification	Section D of PDD.

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.	Accords, CDM Modalities §37c	of possible environmental impacts caused by the SHPs, it was carried out a study for the development of a Simplified Environmental Report (RAS). The four SHPs need a restricted flooded area, deriving from the shape of the reservoir, located in a well fit valley. This way, the areas of direct influence of the entrepreneurship are reduced and the impacts resulting from the environmental alterations are small. Even so, several programs for monitoring, control or possible negative impacts reparation are predicted, as well as programs for the management of the numerous positive impacts such as, the generation of new jobs and the increase of the local economy.	
12. Baseline and monitoring methodology shall be previously approved by the CDM Methodology Panel.	Marrakech Accords, CDM	The project applies the monitoring methodology established according to	Table 2, Section B.1.1 and D.1.1

	Modalities §37e	the AMS I.D, version 13, renewable energy technologies that supply electricity to a grid .	
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	There are provisions for monitoring, verification and reporting. Authority and Responsibilities for the project management are defined.	Table 2, Section D.5
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	In accordance with the requirements of Resolution # 7 of the Brazilian DNA, Local stakeholders were invited to comment on the project. Only one comment was received, sent by the Santa Catarina's State Secretary of Sustainable Development.	Table 2, Section G.
15. A baseline shall be established on a project specific basis, in a transparent manner and taking into account relevant national and/or sectorial policies and circumstances	Marrakech Accords, CDM Modalities, §45 b, c, e	A baseline methodology has been established taking into account relevant national and/or sectorial policies and circumstances.	Table 2, Section B.1.
16. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, CDM Modalities,	OK	Table 2, Section B.2

	§47		
17. The project design document shall be in conformance with the UNFCCC CDM-PDD form and fulfilled according to the guidelines for completing the simplified project design document (CDM-SSC-PDD) and the form for proposed new small scale methodogogies (CDM-SSC-NM).	Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	CAR 01 OK	Table 2, Section C.1.2

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A. Project Description The project design is assessed.					
A.1. **Small scale project activity** It is assess whether the project qualifies as small scale CDM project activity.					
A.1.1. Does the project qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?	-	DR	The project applies the Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories, AMS I.D – Renewable energy projects/Grid connected renewable electricity generation. The category I.D comprises renewable energy generation units, such as photovoltaics, hydro, tidal/wave, wind, geothermal and renewable biomass, that supply electricity to and/or displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit. SHPs Bandeirante, Belmonte and Prata and SHP Barra Escondida, that will use the hydraulic potential of Flores river and Saudades river,	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			respectively, to generate electricity with an installed capacity of 11.85 MW. According to the ANNEX II, of the Simplified Modalities and Procedures for Small-scale clean development mechanism project activities, the CDM project can not exceed the maximum installed power capacity of 15 MW.		
A.1.2. The small scale project activity is not a debundled component of a larger project activity?	-	DR	The item A.4.5 of the PDD confirms that the small-scale project activity being analysed is not a debundled component of a large scale project activity.	OK	OK
A.1.3. Does proposed project activity confirm to one of the project categories defined for small scale CDM project activities?	-	DR	The project is a Small Scale CDM project that applies the Methodology AMS.I.D, version 13. This category comprises renewable energy generation units, such as photovoltaics, hydro, tidal/wave, wind, geothermal and renewable biomass, that supply electricity to and/or displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit and does not exceed the maximum installed power capacity of 15 MW.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A.2. **Project Design** Validation of project design focuses on the choice of technology and the design documentation of the project.					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A.2.1. Are the project's spatial (geographical) boundaries clearly defined?	-	DR I	According to the methodology I.D, the boundary of a renewable energy generation connected to the grid project encompasses the physical and geographical site of the renewable generation source. Thus, the Estelar Project Boundary is restricted to the physical-geographical area of localization of the SHPs. The SHPs Bandeirante, Barra Escondida, Belmonte and Prata are located in the state of Santa Catarina, south region of Brazil: - SHP Barra Escondida will be implanted in the municipality of Saudades, in the Basin of Uruguai River, sub-basin 73, in Saudades River. The coordinates of the entrepreneurship are Latitude 26º54'14" South and Longitude 53º01'47" West. - SHP Belmonte will be constructed in Flores River, municipality of Belmonte, located in the coordinates 26º50'00" South and 53º40'00" West. - SHPs Bandeirante and Prata will also be constructed in Flores River, in the municipality of Bandeirante. SHP Bandeirante is located in the coordinates 26º47'58" South and 53º40'00" West, and SHP Prata, in the coordinates 26º45'45" South and 53º39'56" West.	OK	OK
A.2.2. Are the project's system (components and facilities used to mitigate GHG's) boundaries clearly defined?	-	DR I	According to the methodology I.D, the boundary of a renewable energy generation connected to the grid project encompasses the physical and geographical site of the renewable generation	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			source. Thus, the Estelar Project Boundary is restricted to the physical-geographical area of localization of the SHPs.		
A.2.3. Does the project design engineering reflect current good practices?	-	DR	Yes. The project activity consists on the supply of clean hydroelectric electricity to the Brazilian National Interconnected System (SIN) through the implantation and operation of Small Hydropower Plants (SHPs), and this technology reflects current good practices.	OK	OK
A.2.4. Will the project result in technology transfer to the host country?	-	DR	No. There is no transfer of technology, as the one used in project activities is Brazilian.	OK	OK
A.2.5. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period? Does the project make provisions for meeting training and maintenance needs?	-	DR I	According the PDD, the implantation of the entrepreneurship presupposes the acquisition of high-technology equipment, which will be acquired through the manufacturers settled in the national territory. The use of this equipment demands training and capacity for the local workers, which will be supplied by the manufacturers themselves.	OK	OK
A.3. **Contribution to Sustainable Development** The project's contribution to sustainable development is assessed					
A.3.1. Will the project create other environmental or social benefits than GHG emission reductions?	-	DR I	Yes. According to the PDD, this project will: - avoid the emission of pollutant gases to the atmosphere and preserving the environment for future generations. - boost the local economy, once it provides a technological chain that influences the social-	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			economical activities of the region where the project is located. The operation and the maintenance of the project equipment require the support of the region's service providers, working in the most diverse areas such as: engineers, professionals related to the environment, professionals in the area of health, administrative and juridical area, mechanics, operators, technicians, etc. It is fomented, therefore, the economy related to the third sector, contributing once more to the generation of jobs, collection of taxes and economic growth of the region. - provide the basic conditions for the installation of new businesses and entrepreneurships in the region that will make possible the generation of new jobs and revenue for the municipalities involved, besides providing a greater trust in the electrical system of Santa Catarina and, consequently, being less dependent on the electric generation of other states in the country. - make considerable investments in environmental programs and actions. It will be developed environmental programs on the physical, biotic and anthropic environment to mitigate possible project's environmental impacts. It can be highlighted the program of environmental education that will contribute to the awareness of the population in the municipalities involved in the entrepreneurships about environmental and ecological issues. - demand training and capacity for the local		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			workers, coming from the manufacturers themselves. With this, the companies obtain more experience and the technology becomes more widely divulged and consolidated in the region and in the country as a whole.		
A.3.2. Will the project create any adverse environmental or social effects?	-	DR	No adverse environmental or social effects are foreseen.	OK	OK
A.3.3. Is the project in line with sustainable development policies of the host country?	-	DR	Prior to the submission of the Project Design Document and the Validation Report to the CDM Executive Board, the Project will have to receive the written approval of voluntary participation from the DNA of Brazil, including the confirmation that the Project assists the country in achieving sustainable development.	OK	OK
A.3.4. Is the project in line with relevant legislation and plans in the host country?	-	DR I	Yes. During the Validation visit, the following licenses were available and checked: SHP Bandeirante: LAP nº 84/2006, issued in December 08, 2006 and valid for three years. It was Issued also as a LAI, included in the same document. SHP Belmonte: LAP nº 18/2007, issued on May 29th, 2007. LAI nº 92/2008, issued on May 20th, 2008, valid for 36 months. SHP Prata: LAP nº 83/2006, issued on December 8th, 2006, valid for 36 months. It was Issued also as a LAI, included in the same document. SHP Barra Escondida: LAI nº 37/2008, issued on	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			March 13th, 2008. Valid for 12 months. The following ANEEL's Basic Project Approvals: # 1041, of May 23, 2006, for SHP Barra Escondida. #2375, 2376 and 2377, of June 06, 2008, for PCHs Prata, Bandeirante and Belmonte, respectively. ANEEL,s authorization # 66, of April 23, 2007, as an Electric Energy Independent Producer.		
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 selected baseline methodology in line with the baseline methodologies provided for the relevant project category?	-	DR	Yes. The project applies: - The Clean Development Mechanism - Project Design Document Form (CDM-SSC-PDD) – version 03; - The Guidelines for completing the simplified Project Design Document(CDM-SSC-PDD) and the form for proposed new small scale methodologies (CDM-SSC-NM) – version 05; - The Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories AMS I.D – Renewable energy projects/Grid connected renewable	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			electricity generation, version 13 of 10 August 2007. The project activity consists on the supply of clean hydroelectric electricity to the Brazilian National Interconnected System (SIN) through the implantation and operation of Small Hydropower Plants (SHPs) Bandeirante, Barra Escondida, Belmonte and Prata, located in the state of Santa Catarina, Southern Region of Brazil, with an installed capacity of 11.85 MW, using a small reservoir, with low environmental impact.		
B.1.2. Is the baseline methodology applicable to the project being considered?		DR	Yes. The Indicative simplified baseline and monitoring methodologies for selected small scale CDM project activity categories AMS I.D – Renewable energy projects/Grid connected renewable electricity generation, version 13 of 10 August 2007, is applicable to the project being considered.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.2. **Baseline Determination** It is assessed whether the project activity itself is not a likely baseline scenario and whether the selected baseline represents a likely baseline scenario.					
B.2.1. Is it demonstrated that the project activity itself is not a likely baseline scenario due to the existence of one or more of the following barriers: investment barriers, technology barriers, barriers due to prevailing practice or other barriers?	-	DR	The Annex A of attachment B of Simplified modalities and procedures for small-scale CDM project activities establishes that the project participants shall provide an explanation to show that the Project activity would not have occurred anyway due to at least one of the following barriers: (a) Investment barrier: a financially more viable alternative to the Project activity would have led to higher emissions; (b) Technological barrier: a less technologically advanced alternative to the Project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the Project activity and so would have led to higher emission; (c) Barrier due to prevailing practice: prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions; (d) Other barriers: without the Project activity, for another specific reason identified by the Project participant, such as institutional barriers or limited information, managerial resources, organizational	CL 01	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			capacity, financial resources, or capacity to absorb new Technologies, emissions would have been higher. Before analyzing the barriers faced by Estelar Project, it is necessary to describe the alternative scenarios that would probable take place in the absence of the project activity. The realistic alternatives to the project activity are: - The continuity of the current situation, with electricity being generated by the current composition of generation of the National Interconnected System, more specifically Subsystem South; - The construction of new thermal power plant; - The implementation of project without incentives from CDM. According to the Project, the first barrier faced by the project is the **a) investment barrier**. The project proponent has opted for the benchmark analysis. BVC was able to confirm the investment analysis and particularly benchmark analysis presented by ESTELAR, wherein the weighted average cost of capital (WACC) of the project activity has been used as benchmark to assess the financial attractiveness of the project activity to demonstrate additionality. BVC has accepted the WACC as the benchmark based on the following:		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			The total finances obtained for the project include two components, loan and equity. Hence, the project IRR is based on the total investment (including the debt and the equity portions). In order to evaluate the financial viability of the project, the project developer is required to assess the expected minimum returns on all components of the investment made. Therefore, the benchmark selected needs to be such that, the expected minimum returns take into consideration the risks associated with each of the components of the total investment. Thus, from an investor's perspective, the WACC is one of the most appropriate and common benchmarks for comparing project IRR, since it is the weighted average of the total cost of the different components of the investment. BVC was able to confirm the correctness of the WACC based on the following evidences that were reviewed: - In BVC's opinion the assessment of the IRR's, by the project proponent is justified and is based on the following fact: BVC was able to confirm the investment analysis and the IRR's determined there-in through the detailed spread sheet		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			calculations forwarded by the project proponent (SHP Barra Escondida – 10.17%, SHP Belmonte – 8.74%, SHP Bandeirante – 8.56% e SHP Prata – 8.10%). BVC has adopted the following procedures to verify the correctness of WACC: - BVC verified that the cost of equity is 24.95% for SHP Barra Escondida and SHP Prata, and 27.06% for SHP Belmonte and SHP Bandeirante, based on document forwarded by the company, which uses the Capital Asset Pricing Model (CAPM) to calculate the cost of equity. All the data (rate of return of U.S. Treasuries of 30 years, median of Brazilian Risk between 2003 and 2008, average adjustment between U.S. and Brazilian Inflations between 2003 and 2008, levered Beta between the Electric Energy Index and Bovespa Index for the period from 2003 to 2008, and Equity Risk Premium in Brazil) were checked and the sources validated by BVC. This information is available at pages 15 and 16 of PDD. The ESTELAR Cost of Equity was calculated according the equation below (page 15 of PDD):		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			$Re = Rf + \beta i\ (ERP)$ Re = Cost of capital Rf = Risk free + Inflation adjustment βi = Beta ERP = Equity risk premium **SHP Barra Escondida** Cost of Equity 24,95% Risk Free Asset (Treasury 30y) 6,71% Beta 1,56 Risk Premium 7,79% Brazilian Risk (2003-2007) 3,14% Inflation Adjustment (2003 - 2007) 2,92% **SHP Belmonte** Cost of Equity 27,06% Risk Free Asset (Treasury 30y) 6,71% Beta 1,83 Risk Premium 7,79% Brazilian Risk (2003-2007) 3,14% Inflation Adjustment (2003 - 2007) 2,92%		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			SHP Bandeirante Cost of Equity 27,06% Risk Free Asset (Treasury 30y) 6,71% Beta 1,83 Risk Premium 7,79% Brazilian Risk (2003-2007) 3,14% Inflation Adjustment (2003 - 2007) 2,92% **SHP Prata** CAPM 24,95% Risk Free Asset (Treasury 30y) 6,71% Beta 1,56 Risk Premium 7,79% Brazilian Risk (2003-2007) 3,14% Inflation Adjustment (2003 - 2007) 2,92% - BVC could verify that the cost of debt, according to documents forwarded by the project proponent, is: **Project — Cost of Debt** **SHP Barra Escondida 10,25%** **SHP Belmonte 9,75%** **SHP Bandeirante 9,75%** **SHP Prata 9,75%** - The ESTELAR Weighted Average Capital		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			Cost was calculated according the equation below (page 14 of PDD): $WACC = \frac{E}{V} * Re + \frac{D}{V} * Rd * (1 - Tc)$ Where: E/V = Percentage of Equity in the Capital Structure of the Company; Re = Cost of Equity; D/V = Percentage of Debt in the Capital Structure of the Company; Rd = Cost of Debt Tc = Income Tax in Brazil + Social Contribution OBS 1: Income tax in Brazil is 25% and social contribution is 9% (page 16 of PDD. The information is also available in http://www.receita.fazenda.gov.br/Aliquotas/default.htm). OBS 2: Capital Structures:		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			SHP Barra Escondida WACC 12,22% Total Capital 9.399.000 Equity 2.819.700 % 30,0% Debt 6.579.300 % 70,0% Cost of Equity 24,95% Cost of Debt 10,25% Income Tax + Social Contribution 34% **SHP Belmonte** WACC 11,59% Total Capital 18.200.000 Equity 4.550.000 % 25,0% Debt 13.650.000 % 75,0% Cost of Equity 27,06% Cost of Debt 9,75% Income Tax + Social Contribution 34%		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			SHP Bandeirante WACC 11,59% Total Capital 15.600.000 Equity 3.900.000 % 25,0% Debt 11.700.000 % 75,0% Cost of Equity 27,06% Cost of Debt 9,75% Income Tax + Social Contribution 34% **SHP Prata** WACC 11,99% Total Capital 16.400.000 Equity 4.920.000 % 30,0% Debt 11.480.000 % 70,0% Cost of Equity 24,95% Cost of Debt 9,75% Income Tax + Social Contribution 34% BVC agrees with all the data used in Benchmark calculations and would like to point out that they are clearly presented, available to consult and correct. - In BVC's opinion, it is thus sufficiently demonstrated that the proposed project		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			activity is not economically or financially attractive. Moreover, the investment analysis is presented in a transparent manner and all the relevant assumptions are provided, clearly presented and justifying the critical techno-economic parameters and assumptions. **Project** / **IRR** / **WACC** **SHP Barra Escondida** / **10.17%** / **12.22%** **SHP Belmonte** / **8.74%** / **11.59%** **SHP Bandeirante** / **8.56%** / **11.59%** **SHP Prata** / **8.10%** / **11.99%** To confirm how solid the investment analysis is, project participants presented a sensitivity analysis with just the scenarios which contribute to increase the project financial and economic attractiveness, varying the most important parameters for the cash flow for each SHP: (i) the electricity price and (ii) the total amount of investment. The sensitivity analysis confirmed that the SHPs of Estelar Project are not financially attractive once the project internal rates of return are lower than the weighted average capital cost of them in all scenarios analyzed.		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			Therefore, the project is not financially attractive without the CDM incentives and the revenues from selling the Certified Emission Reductions are fundamental to the financial attractiveness of the project and for its development. This way, a financially more viable alternative to the project activity which would be "do not develop the project activity", would have led to higher emissions through (i) the continuity of the current situation, with electricity being generated by the current composition of generation of the National Interconnected System, more specifically Subsystem South or (ii) the construction of new thermal power plant in the south region. **c) Barrier due to prevailing practice** According to Item B.5 of the PDD, where we can find a description of the current Brazilian energetic matrix and its projection for the future, established by the Brazilian Ministry of Mines and Energy, there is a clear predominance of big hydroelectric power plants and fossil fuels thermoelectric power plants in the national energetic matrix. This way, through the information and data presented, it is perceived that the implantation of small hydroelectric power plants is not the predominant practice in the country, not being configured as the common scenario of the		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			country's and the region's energetic matrix. Do not implement Estelar Project would result in (i) the continuation of the present situation, with electricity being generated by the current composition of the National Interconnected System, more specifically the South Sub-system (with the great presence of thermo electric power plants) or (ii) the construction of new thermoelectric power plants. Thus, the implantation of SHPs of Estelar Project propitiates emissions reductions, which would not occur in the absence of the project.		
B.2.2. Is the application of the baseline methodology and the discussion and determination of the chosen baseline transparent and conservative?	-	DR I	Yes. The baseline of the project related to the generation of renewable energy connected to the grid is the product of the KWh produced by the renewable generating unit times an emission coefficient, measured in tCO2e/KWh calculated in a transparent and conservative manner, according to a combined margin (CM), resulted of the combination of operating margin (OM) and build margin (BM), according to the procedures prescribed in the "Tool to calculate the emission factor for an electricity system". BEy = EGy* EFgrid,CM,y The Brazilian DNA has published in May 2008, the resolution n^0 8, which considers that the National Interconnected System is a unique electricity system. This configuration is valid for the calculation of the emission factor of the CO2, and is	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			used in this project.		
B.2.3. Are relevant national and/or sectorial policies and circumstances taken into account?	-	DR	Yes. The national and sectorial policies support renewable energy projects.	OK	OK
B.2.4. Is the baseline selection compatible with the available data?	-	DR	Yes.	OK	OK
B.2.5. Does the selected baseline represent the most likely scenario describing what would have occurred in absence of the project activity?	-	DR	Yes.	OK	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?	-	DR	Yes. The starting date of the project is 15/02/2008, and corresponds to the starting date of the SHP Barra Escondida construction. The evidence to prove this date is the "Contrato de Empreitada #09F/2008", signed in 15/02/2008, with the construction company Cooperativa de Infra-Estrutura e Desenvolvimento do Vale do Araçá. The expected operational lifetime of the project activity is 30 years to each SHP.	OK	OK
C.1.2. Is the crediting period clearly defined (seven years with two possible renewals or 10 years with no renewal)?	-	DR	Yes. A first seven years crediting period is defined, with two possible renewals.	CAR 01	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.					
D.1. **Monitoring Methodology** It is assessed whether the project applies an appropriate monitoring methodology.					
D.1.1. Is the selected monitoring methodology in line with the monitoring methodologies provided for the relevant project category?	-	DR	The project applies the monitoring methodology established according to the AMS I.D, version 13, Renewable energy technologies that supply electricity to a grid .	OK	OK
D.1.2. Is the monitoring methodology applicable to the project being considered?	-	DR I	Yes. According to AMS I.D, the monitoring shall consist of Metering the electricity generated by the renewable technology.	OK	OK
D.1.3. Is the application of the monitoring methodology transparent?	-	DR I	Yes. See D.1.2	OK	OK
D.1.4. Will the monitoring methodology give opportunity for real measurements of achieved emission reductions?	-	DR I	Yes. See D.1.2	OK	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. Are the choices of project emission indicators reasonable?	-	DR I	Yes. See section B.7.1 of PDD.	OK	OK
D.2.2. Will it be possible to monitor / measure the specified project emission indicators?	-	DR I	Yes. See section B.7.1 of PDD.	OK	OK
D.2.3. Do the measuring technique and frequency comply with good monitoring practices?	-	DR I	Yes. See section B.7`.1 of PDD.	OK	OK
D.2.4. Are the provisions made for archiving project emission data sufficient to enable later verification?	-	DR I	Yes. According to the PDD, all data collected as part of monitoring will be archived and be kept at least for 2 years after the end of the last crediting period.	OK	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. If applicable, are the choices of leakage indicators reasonable?	-	DR I	According to the methodology AMS. I.D., Leakage is considered only if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			In case of Estelar Project, new equipments will be used, manufactured for the activity. So, there will be no leakage.		
D.3.2. If applicable, will it be possible to monitor / measure the specified leakage indicators?	-	DR I	See D.3.1	OK	OK
D.3.3. If applicable, do the measuring technique and frequency comply with good monitoring practices?	-	DR I	See D.3.1	OK	OK
D.3.4. If applicable, are the provisions made for archiving leakage data sufficient to enable later verification?	-	DR I	See D.3.1	OK	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. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	-	DR	Yes. The baseline of the project related to the generation of renewable energy connected to the grid is the product of the KWh produced times the renewable generating unit times an emission coefficient, measured in tCO2e/KWh, calculated in a transparent and conservative manner, according to a combined margin (CM), resulted of the combination of operating margin (OM) and build margin (BM), according to the procedures prescribed in the “Tool to calculate the emission	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			factor for an electricity system". BEy = EGy* EFgrid,CM,y The Brazilian DNA has published in May 2008, the resolution n^0 8, which considers that the National Interconnected System is a unique electricity system. This configuration is valid for the calculation of the emission factor of the CO2, and is used in this project.		
D.4.2. Will it be possible to monitor / measure the specified baseline emission indicators?	-	DR I	Based on the methodology AMS – I.D the parameter to be monitored is the electricity supplied by the project activity to the grid. The energy measurement is essential to verify and monitor the GHG emission reductions. It is necessary, therefore, the use of meter equipment to register and check the electricity generated by the unit.	OK	OK
D.4.3. Do the measuring technique and frequency comply with good monitoring practices?	-	DR I	Measurement Area is responsible for obtaining data directly from the meters and make available in files on xml format. Data obtained by the company are sent continuously to CCEE through SCDE system which makes the collection and treatment of the generation and consumption data of the National Interconnected System measurement points.	OK	OK
D.4.4. Are the provisions made for archiving baseline emission data sufficient to enable later verification?	-	DR I	All data collected as part of the monitoring will be archived and be kept for at least 2 years after the end of the last crediting period.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.5. **Project Management Planning** It is checked that project implementation is properly prepared for and that critical arrangements are addressed.					
D.5.1. Is the authority and responsibility of project management clearly described?	-	DR I	According to section B.7.2, the Corporate Management Director is responsible for management activities, the Operation and Maintenance Director is responsible for activities related to the plant's operation and maintenance and the Technical Director is responsible for technical activities related to the construction of the SHPs.	OK	OK
D.5.2. Is the authority and responsibility for registration monitoring measurement and reporting clearly described?	-	DR I	According to section B.7.2 of the PDD, the authority and responsibility for registration monitoring measurement and reporting relies with the Measurement Area. There are two data collection channels in each measurement point. A channel is used by the company for direct collection in the Powerhouse and the other one is used by CCEE in the Connection Point, compound by the System of Measurement and Billing. Each SHP has one meter located in its Powerhouse that registers the Gross Electricity produced by the plants. SHPs Bandeirante, Belmonte and Prata will have one unique meter, located on São Miguel do Oeste Substation, that registers the net electricity supplied by these Plants	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			to the grid and SHP Barra Escondida has another meter located in a physical structure located between 4 and 5 km to the plant, which is responsible for registration of net electricity supplied to the grid. The Measurement Area is also responsible for generating, at each month, in the first working day, based on consultation from a meters database, the spreadsheets with the generation data, consolidated hourly, regarding the previous month.		
D.5.3. Are procedures identified for training of monitoring personnel?	-	DR I	The implantation of the entrepreneurship presupposes the acquisition of high-technology equipment, which will be acquired through the manufacturers settled in the national territory. The use of this equipment demands training and capacity for the local workers, coming from the manufacturers themselves. With this, the companies obtain more experience and the technology becomes more widely divulged and consolidated in the region and in the country as a whole.	OK	OK
D.5.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	-	DR I	There are not identified cases where unintended emissions could occur.	OK	OK
D.5.5. Are procedures identified for calibration of monitoring equipment?	-	DR I	The calibration of meters will follow what is described in the document elaborated by ONS – Sub module 12.3 - Maintenance of the measurement system for billing, which establishes	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			that: (a) The periodicity for the responsible agent's preventive maintenance for Measurement System for Billing (SMF) is of 2 (two) years at the most. That periodicity can be altered in function of the occurrence history observed for all facilities. (b) The preventive maintenance can be postponed by the period of up to 2 (two) years, in the case of happening inspection in the measurement point. The postponement of that maintenance starts to apply from the inspection date.		
D.5.6. Are procedures identified for maintenance of monitoring equipment and installations?	-	DR I	Yes. See item D.5.5.	OK	OK
D.5.7. Are procedures identified for monitoring, measurements and reporting?	-	DR I	Yes. See section B.7.2 – Description of Monitoring Plan.	OK	OK
D.5.8. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	-	DR I	According to section B.7.1 of the PDD, based on the methodology AMS – I.D, the only data that need to be monitored is the electricity supplied by the project activity to the grid. All the data collected as part of monitoring will be archived and be kept at least for 2 years after the end of the last crediting period.	OK	OK
D.5.9. Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	-	DR I	Data Consolidation Procedure: Project Participants compare data available and if an inconsistency occurs, it will be generated a nonconformity report that will verify with CCEE the cause for the disagreement between the difference	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			of information. In case of unavailability of any measurement point, due to maintenances, commissioning or for any other reason, the methodology of data estimation will be used according to the item 14.3 of the Commercialization Procedure PdC ME.01.		
D.5.10. Are procedures identified for internal audits of GHG project compliance with operational requirements as applicable?	-	DR I	Are there any written procedures identified for internal audits?	CL 02	OK
D.5.11. Are procedures identified for project performance reviews?	-	DR I	Are there any written procedures identified for project performance reviews?	CL 03	OK
D.5.12. Are procedures identified for corrective actions?	-	DR I	Yes. See D.5.9.	OK	OK
E. Calculation of GHG emission 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. **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 project emissions captured in the	-	DR I	According to the AMS I.D, there are not project emissions.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
project design?					
E.1.2. Have all relevant greenhouse gases and sources been evaluated?	-	DR I	See item E.1.1.	OK	OK
E.1.3. Do the methodologies for calculating project emissions comply with existing good practice?	-	DR I	See item E.1.1..	OK	OK
E.1.4. Are the calculations documented in a complete and transparent manner?	-	DR I	See item E.1.1.	OK	OK
E.1.5. Have conservative assumptions been used?	-	DR I	See item E.1.1.	OK	OK
E.1.6. Are uncertainties in the project emissions estimates properly addressed?	-	DR I	See item E.1.1.	OK	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 leakage calculation required for the selected project category and if yes, are the relevant leakage effects assessed?	-	DR I	According to the methodology AMS. I.D., Leakage is considered only if the energy generating equipment is transferred from another activity or if the existing equipment is transferred to another activity. Since this is not the case, leakage will not be considered.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
E.2.2. Are potential leakage effects properly accounted for in the calculations (if applicable)?	-	DR I	See E.2.1	OK	OK
E.2.3. Do the methodologies for calculating leakage comply with existing good practice (if applicable)?	-	DR I	See E.2.1	OK	OK
E.2.4. Are the calculations documented in a complete and transparent manner and (if applicable)?	-	DR I	See E.2.1	OK	OK
E.2.5. Have conservative assumptions been used (if applicable)?	-	DR I	See E.2.1	OK	OK
E.2.6. Are uncertainties in the leakage estimates properly addressed (if applicable)?	-	DR I	See E.2.1	OK	OK
E.3. **Baseline GHG Emissions** The validation of predicted baseline GHG emissions focuses on transparency and completeness of calculations.					
E.3.1. Are the baseline emission boundaries clearly defined and do they sufficiently cover sources for baseline emissions?	-	DR I	According to the methodology AMS I.D, the boundary of a renewable energy generation connected to the grid project encompasses the physical and geographical site of the renewable generation source. Thus, the Estelar Project Boundary is restricted to the physical-geographical	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			area of the localization of the SHPs.		
E.3.2. Are all aspects related to direct and indirect baseline emissions captured in the project design?	-	DR I	Yes.	OK	OK
E.3.3. Have all relevant greenhouse gases and sources been evaluated?	-	DR	Yes.	OK	OK
E.3.4. Do the methodologies for calculating baseline emissions comply with existing good practice?	-	DR	Yes.	OK	OK
E.3.5. Are the calculations documented in a complete and transparent manner?	-	DR	Yes.	OK	OK
E.3.6. Have conservative assumptions been used?	-	DR	Yes.	OK	OK
E.3.7. Are uncertainties in the baseline emissions estimates properly addressed?	-	DR	Yes.	OK	OK
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 case?	-	DR I	Yes. According to section B.6.4 of the PDD, the project is expected to reduce CO2 emissions to the extent of 69,939 tCO2e during the first 7 year of crediting period.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
F. Environmental Impacts It is assessed whether environmental impacts of the project are sufficiently addressed.					
F.1.1. Does host country legislation require an analysis of the environmental impacts of the project activity?	-	DR I	Yes. During the Validation Visit, the following analysis of the environmental impacts where available: - SHP Bandeirante: RAS and RDPA, from October/2006, elaborated by AGRIMENSURA Serviços Topograficos Ltda. - SHP Belmonte: RAS and RDPA, from March /2007, elaborated by a Multidisciplinar Team. - SHP Prata: RAS and RDPA from October/2006, elaborated by AGRIMENSURA Serviços Topograficos Ltda. - SHP Barra Escondida: PBA from February / 2008.	OK	OK
F.1.2. Does the project comply with environmental legislation in the host country?	-	DR I	Yes. During the Validation visit, the required licenses were checked. See A.3.4.	OK	OK
F.1.3. Will the project create any adverse environmental effects?	-	DR I	The project has a low environmental impact, and is in compliance with all the legal requirements from the Host Country.	OK	OK
F.1.4. Have environmental impacts been identified and addressed in the PDD?	-	DR I	See F.1.3	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
G. Comments by Local Stakeholder Validation of the local stakeholder consultation process.					
G.1.1. Have relevant stakeholders been consulted?	-	DR I	Yes. In accordance with the requirements of Resolution # 7 of the Brazilian DNA, Local stakeholders were invited to comment on the project, as follows: - SHPs Bandeirante and Prata: City Hall of Bandeirante, Municipal Assembly of Bandeirante, Secretary of Agriculture of Bandeirante (responsible for issues related to the Environment in the municipality of Bandeirante), Association of Small Agriculturists of Linha Riqueza do Oeste – municipality of Bandeirante and Cooperative of Small Agriculturists of Biofuel - municipality of Bandeirante. - SHP Belmonte: City Hall of Belmonte, Municipal Assembly of Belmonte, Secretary of Agriculture of Belmonte (responsible for issues related to the Environment in the municipality of Belmonte) and Union of Rural Workers of Belmonte. - SHP Barra Escondida: City Hall of Saudades, Municipal Assembly of Saudades, Secretary of Agriculture of Saudades (responsible for issues related to the Environment in the municipality of Saudades) and Union of Rural Workers of Saudades. Common Stakeholders: Environment Foundation	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			of the State of Santa Catarina (FATMA), State Secretary of Sustainable Development (responsible for issues related to the Environment in the state of Santa Catarina), State of Santa Catarina Attorney of Public Interests, Federal Attorney of Public Interests, Brazilian Forum of NGO's and Social Movements for Environment and Development.		
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	-	DR I	Yes. The invitations were sent to local stakeholders by Post, with acknowledges of receipt.	OK	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?	-	DR I	Yes. See G.1.1	OK	OK
G.1.4. Is a summary of the comments received provided?	-	DR I	Yes. According to the PDD, section E.2, only one comment was received, sent by the Santa Catarina's State Secretary of Sustainable Development.	OK	OK
G.1.5. Has due account been taken of any comments received?	-	DR I	Yes. According to the PDD, section E.3, the Santa Catarina's State Secretary of Sustainable Development made a positive comment, saying that it does not oppose to the Estelar Project and also sent compliments to the project participants for the initiative and for the contribution for the emission reductions of greenhouse gases.	OK	OK

Table 3 Indicative Simplified Baseline and Monitoring Methodologies for selected small-scale CDM project activity categories - AMS I.D.

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Technology/measure					
1.1. Does the project comprise renewable energy technologies that supply electricity to a grid?	-	DR	Yes. The project comprises hydro energy generation units that supply electricity to an electricity distribution system, that would have been supplied by at least one fossil fuel fired generation unit.	OK	OK
2. Boundary					
2.1. Does the project boundary encompass the physical, geographical site of the renewable generation source?	-	DR	According to the methodology AMS I.D, the boundary of a renewable energy generation project connected to the grid, encompasses the physical and geographical site of the renewable generation source. Thus, the Estelar Project Boundary is restricted to the physical-geographical area of localization of the SHPs.	OK	OK
3. Baseline					
3.1. Did the project participants identify the most plausible baseline scenario among all realistic and credible alternatives(s)?	-	DR	Yes. The baseline of the project related to the generation of renewable energy connected to the grid is the KWh produced by the renewable generating unit multiplied by an emission coefficient (measured in tones of CO2e/KWh) calculated in a transparent and conservative manner, according to a combined margin (CM),	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			resulted of the combination of operating margin (OM) and build margin (BM), according to the procedures prescribed in the "Tool to calculate the emission factor for an electricity system". BEy = EGy* EFgrid,CM,y		
3.2 Were the emission reductions calculations based on data from an official source and made publicly available.		DR	Yes. the emission reductions of the project will be calculated based on the equation of BEy = EGy* EFgrid,CM,y where EGy* is the quantity of electricity supplied to the grid by the project, EFgrid,CM,y is the combined margin emission factor, calculated utilizing the operating margin emission factor and the business margin emission factor. The operating margin emission factor will be calculated according to dispatch data analysis OM and the build margin emission factor will be calculated according to the option 2 of the methodological tool "Tool to calculate the emission factor for an electric system, version 01.1. For the first crediting period, the build margin emission factor shall be updated annually, ex-post. For the second crediting period, the build margin emission factor shall be calculated ex-ante, as described in option 1 of the same methodological tool. For the third crediting period, the build margin emission factor	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			calculated for the second crediting period should be used. The calculations of the operating margin emission factor and the build margin emission factor were made based on the information supplied by the Brazilian DNA - Designated National Authority.		
4. Monitoring					
4.1 Does the monitoring consist of metering the quantity of electricity generated?	-	DR	Yes. Based on the Methodology AMS I.D, the monitoring consists of metering the amount of electricity supplied to the grid by the project activity.	OK	OK

Table 4 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?	-	DRI	Yes. During the Validation visit, the following licenses were available and checked: SHP Bandeirante: LAP nº 84/2006, issued in December 08, 2006 and valid for three years. It was Issued also as a LAI, included in the same document. SHP Belmonte: LAP nº 18/2007, issued on May 29th, 2007. LAI nº 92/2008, issued on May 20th, 2008, valid for 36 months. SHP Prata: LAP nº 83/2006, issued on December 8th, 2006, valid for 36 months. It was Issued also as a LAI, included in the same document. SHP Barra Escondida: LAI nº 37/2008, issued on March 13th, 2008. Valid for 12 months. The following ANEEL's Basic Project Approvals: # 1041, of May 23, 2006, for SHP Barra Escondida. #2375, 2376 and 2377, of June 06, 2008, for PCHs Prata, Bandeirante and Belmonte, respectively. ANEEL's authorization # 66, of April 23, 2007, for SHP Barra Escondida, as an	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Electric Energy Independent Producer.		
1.2. Are there conditions of the environmental permit? In case of yes, are they already being met?	-	DR I	All the conditions of the environmental permit are already being met.	OK	OK
1.3. Is the project in line with relevant legislation and plans in the host country? Is the water-impounding permit applied to competent authority?	-	DR I	Yes, the project is in line with relevant legislation and plans in the host country. See item 1.1.	OK	OK
1.4. Are the conditions of the Resolução Interministerial 01/2003 being met?	-	DR I	Yes.	OK	OK

Table 5 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Reference to checklist question in Tables 2/3/4	Summary of project owner response	Validation team conclusion
CAR 01 – The PDD informs in the table 3 of the section A.4.3, that the prevision for starting date of the crediting period is march/2010, and in the section C.2.1.1, that the starting date of the first crediting period is 03/01/2010. According to the Guidelines for completing the simplified project design document (CDM-SSC-PDD) and the form for proposed new small scale methodologies (CDM-SSC-NM), version 05, dated should be informed as DD/MM/YYYY.	Table 1, 17 Table 2, C.1.2	In PDD Version 03, the starting date of the crediting period was informed as DD/MM/YYYY.	The version 03 of the PDD was checked and the crediting period information is correct. CAR 01 was considered closed. OK
CL 01 – Are there any available documents or websites where it is possible to clarify the cost indexation rules practiced for lending to Small Hydro Power Plants in Brazil through BNDES loans and repasses through a local agent?	Table 2 B.2.1	The cost indexation rules estimated for SHPs Prata, Bandeirantes and Belmonte were based on the cost of lending of SHP Barra Escondida. When the spreadsheet for SHP Barra Escondida was created, the loan contract was not assigned yet, but it had already started a discussion with BRDE. Some pages of the contract assigned with BRDE where the cost can be visualised was provided to the It is important to highlight that the spreadsheet	The answer was considered correct and CL 01 was considered closed. OK

Draft report clarifications and corrective action requests by validation team	Reference to checklist question in Tables 2/3/4	Summary of project owner response	Validation team conclusion
		supplied to DOE reflects a moment before the assignment with BRDE. The entrepreneur estimate the cost for SHP Barra Escondida considering the interests plus TJLP plus taxes involved (Service Tax, Consulting Fee, Fee of Credit Allocation, etc). The values for TJLP can be found on the following website: http://www.bndes.gov.br/produtos/custos/juros/tjlp.asp. Entrepreneurs estimate a fall of 0.5% in the required spread by the financial agents for loans of SHPs Bandeirante, Belmonte and Prata.	
CL 02 - Are there any written procedures identified for internal audits?	Table 2 D.5.10	As SHPs Barra Escondida, Bandeirante, Belmonte and Prata have not started their operation yet, they do not have any written procedures for internal audits. There will be written procedures required by Brazilian Regulators Agents of Brazilian Electrical Sector and these procedures will be directly followed. Periodically, Brazilian Regulators Agents and Local Environment	The answer was considered correct and CL 02 was considered closed. OK

Draft report clarifications and corrective action requests by validation team	Reference to checklist question in Tables 2/3/4	Summary of project owner response	Validation team conclusion
		Institutions (FATMA, for example) will carry out periodic audits that are essential for the project get the licenses necessary to its operation. Project Participants will follow the requirements of Brazilian Regulators Agents and Local Environment Institutions and if it is necessary will create a written procedure for internal audits. Related to the GHG Project, project participants will monitor electricity generation and GHG emission reductions, as described in PDD. Internal data will be cross-checked with information of CCEE. Monitoring Plan of PDD will become a internal procedure for the company.	
CL 03 - Are there any written procedures identified for project performance reviews?	Table 2 D.5.11	As SHPs Barra Escondida, Bandeirante, Belmonte and Prata have not started their operation yet, they do not have any written procedures for project performance reviews. The monitoring plan	The answer was considered correct and CL 03 was considered closed. OK

Draft report clarifications and corrective action requests by validation team	Reference to checklist question in Tables 2/3/4	Summary of project owner response	Validation team conclusion
		presented in the PDD will become an internal written procedure and the monitoring of electricity generation and GHG emissions reductions will follow the Monitoring Plan. Furthermore, there will be written procedures required by Brazilian Regulators Agents of Brazilian Electrical Sector and these procedures will be directly followed.	