

1st VERIFICATION REPORT OF FOZ DO CHAPECÓ

Document Prepared By Bureau Veritas Certification

Project Title	Foz do Chapecó
Version	02
Report ID	BRAZIL-VER/BR.1343085

Report Title	1 st Verification Report of Foz do Chapecó
Client	Foz do Chapecó
Pages	38
Date of Issue	21-November-2012
Prepared By	Bureau Veritas Certification
Contact	Av. do Café, 277, 5º andar, Torre B - CEP 04311-000 - São Paulo/SP - Brazil Telephone = (55) (11) 2655-9000 E-mail = claudia.freitas@br.bureauveritas.com Website = www.bureauveritas.com.br
Approved By	Diego Serrano – Internal Technical Reviewer
Work Carried Out By	Guilherme Borba Lefréve - Lead GHG Verifier Maria Cláudia Martinelli Trabulsi – GHG Verifier

Summary:

Bureau Veritas Certification has made the 1st monitoring period verification of Foz do Chapecó Hydropower Plant, located between the cities of Águas de Chapecó, State of Santa Catarina and Alpestre, State of Rio Grande do Sul, Southern Region of Brazil.

The verification scope is defined as a periodic independent and objective review and an ex-post determination of the monitored reductions in GHG emissions during defined verification period and consisted of the following three phases: i) desk review of the project design, baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in the Verification Report. Taking into account this output, the project proponent revised its Monitoring Report Document, version 04. In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the "Consolidated baseline methodology for grid connected electricity generation from renewable sources" – ACM0002, version 13, and meets the relevant VCS version 3 requirements and local legislation.

During this verification, 07 Corrective Action Requests (CAR) and 03 Clarification Requests (CL) were raised and successfully closed.

As the result of the 1st periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. Bureau Veritas Certification herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Reporting period: 14-October-2010 to 30-June-2012

PERIOD	EMISSION REDUCTION (tCO ₂ e)
2010 (October to December)	148,323.037
2011 (January to December)	980,488.660
2012 (January to June)	160,536.865
Total	1,289,348.563

Table of Contents

1	Introduction.....	4
1.1	Objective	4
1.2	Scope and Criteria	4
1.3	Level of Assurance.....	4
1.4	Summary Description of the Project	5
2	Validation Process, Findings and Conclusion	6
2.1	Validation Process	6
2.2	Validation Findings.....	8
2.2.1	Gap Validation.....	8
2.2.2	Methodology Deviations.....	8
2.2.3	Project Description Deviations	8
2.2.4	New Project Activity Instances	8
2.3	Validation Conclusion.....	8
3	Verification Process	9
3.1	Method and Criteria.....	9
3.2	Document Review	9
3.3	Interviews	11
3.4	Site Inspections.....	11
3.5	Resolution of Any Material Discrepancy	11
4	Verification Findings.....	13
4.1	Project Implementation Status	13
4.2	Accuracy of GHG Emission Reduction or Removal Calculations	18
4.3	Quality of Evidence to Determine GHG Emission Reductions or Removals	21
4.4	Management and Operational System	22
5	Verification Conclusion	22
6	Verifiers' CVs	23
7	VCS Verification Protocol	~~27~~ 24

1 INTRODUCTION

1.1 Objective

Foz do Chapecó has commissioned Bureau Veritas Certification to verify the emission reductions of its VCS Project “Foz do Chapecó”.

This report summarizes the findings of the first periodic verification of the project, performed on the basis of VCS – Verified Carbon Standard version 3.3 criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

Verification is the periodic independent review and ex-post determination of the monitored reductions in GHG emissions during defined verification period.

The objective of the periodic verification is to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan; furthermore, the periodic verification evaluates the GHG emission reductions data and express a conclusion with a high, but not absolute, level of assurance about whether the reported GHG emission data is free of material misstatements; and verifies that the reported GHG emission reductions data is sufficiently supported by evidence, i.e. monitoring records.

The verification shall consider both quantitative and qualitative information on emission reductions. Quantitative data comprises the monitoring reports submitted to the verifier by the project entity. Qualitative data comprises information on internal management controls, calculation procedures and procedures for transfer, frequency of emissions reports and review of calculations/data transfers.

The verification is based on criteria set by VCS – Verified Carbon Standard version 3.3.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the project description, the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against VCS – Verified Carbon Standard version 3.3.

The verification is not meant to provide any consulting towards the Client. However, stated requests for forward actions and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 Level of assurance

During the verification process, the GHG team assessed the monitoring report, the calculation spreadsheets and supporting documents.

Based on this assessment, the verification team can express a reasonable level of assurance, stating that the GHG emission reductions:

- Are materially correct and are a fair representation of the GHG data, and
- Are prepared in accordance with the relevant International Standard on GHG quantification, monitoring and reporting, and with relevant national standards.

The verification report is based on VCS MR version 04, of 19/11/2012, and other documents provided by the project proponent, as well as, on information obtained from the on-site visit (on 16/10/2012). The verification opinion is assured by the credibility of all the statements above.

1.4 Summary Description of the Project

The project activity consists of the construction of a hydropower plant with four generating units of 213.75 MW each, totalizing an installed capacity of 855 MW, with a total reservoir area of 80 km². The plant is located between the cities of Águas de Chapecó State of Santa Catarina and Alpestre, State of Rio Grande do Sul, Southern Region of Brazil.

The Foz do Chapecó Hydropower Plant is owned by Foz do Chapecó Energia.

Foz do Chapecó Energia has a shareholders the companies:

- CPFL Geração de Energia S.A. - 51%
- Furnas Centrais Elétricas - 40%
- CEEE-GT Companhia Estadual de Geração e Transmissão de Energia Elétrica - 9%.

The emission reductions due to the renewable energy generated and dispatched to the grid by Foz do Chapecó Hydropower Plant Project Activity resulted in 1,289,348.563 tCO₂e, during this 1st monitoring period, from 14-October-2010 to 30-June-2012.

2 VALIDATION PROCESS, FINDINGS AND CONCLUSION

2.1 Validation Process

The validation process is described in the VCS Validation Report, which can be accessed on the VCS Project database online (<http://www.vcsprojectdatabase.org/>). Please refer to the PD and Validation Report included in the VCS Project database. Please see below for some details regarding the validation process:

- Method and Criteria:

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 VCS requirements and also according to applicable UNFCCC-CDM criteria. 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: (1) It organizes, details and clarifies the requirements a VCS project is expected to meet and, (2) 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 the Validation Report.

- Document Review:

The Project Description (PD) submitted by Foz Do Chapecó Energia S.A. and additional background documents related to the project design and baseline, i.e. country Law, Project Description Template, Approved UNFCCC-CDM methodology, applicable UNFCCC-CDM validation requirements (Tools, Guidelines, etc.) were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, Foz Do Chapecó Energia S.A. revised the PD and resubmitted it on 20/07/2012.

- Interviews:

On 29/05/2012 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review.

Representatives of Project Proponents Foz Do Chapecó Energia S.A. and Enerbio Consultoria Ltda. were interviewed (see References). The main topics of the interviews are summarized below:

Interviewed organization	Interview topics
Foz Do Chapecó Energia S.A	➤ Project background information, ➤ Project technology, operation and maintenance, ➤ Project monitoring and management plan, ➤ Stakeholder consultation process, ➤ Project status, ➤ Environmental aspects / impacts and licenses.
Enerbio Consultoria Ltda.	➤ Baseline methodology, ➤ Additionality, ➤ Monitoring methodology and plan, ➤ Emission Reduction Calculation, ➤ Emission Factor Calculation.

Site Inspections:

On 29/05/2012 Bureau Veritas Certification performed a site inspection at Foz do Chapecó Hydro Power Plant. The objective of this site visit was to confirm that the project description included in the PD (version 3) was in accordance with the actual project operation on site. To do so, BVC's lead verifier checked the equipments used on site (turbines, generators, measuring systems, etc.) and respectively identification plates. Also, interviews were held with operation and management staff, to discuss issues related to the Projects' operation.

All inconsistencies found during site visit were addressed in CARs or CLs included in the validation protocol (Appendix A) of the Validation Report. All issues have been resolved by Project Proponents and all CARs and CLs opened were successfully closed.

Resolution of Any Material Discrepancy:

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) VCS and/or 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 VCS/CDM requirements have been met.

All inconsistencies found during the validation process were addressed in CARs or CLs included in the validation protocol (Appendix A) of the Validation Report. All issues have been resolved by Project Proponents and all CARs and CLs opened were successfully closed.

2.2 Validation Findings

2.2.1 Gap Validation

Not applicable, this project activity does not comprise a Gap Validation.

2.2.2 Methodology Deviations

Not applicable, there is no methodology deviation. Please refer to the PD and validation report included in the VCS Project database.

2.2.3 Project Description Deviations

There are no project description deviations applicable to this project.

2.2.4 New Project Activity Instances

Not applicable.

2.3 Validation Conclusion

The validation conclusion is described in the VCS Validation Report, which can be accessed on the VCS Project database online (<http://www.vcsprojectdatabase.org/>). Please refer to the PD and Validation Report included in the VCS Project database. Please see below for details regarding the validation conclusion:

Bureau Veritas Certification has performed a validation of the Foz do Chapecó Project in Brazil. The validation was performed on the basis of VCS/UNFCCC-CDM 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 participant/s used the latest UNFCCC-CDM tool for demonstration of the additionality. In line with this tool, the PD provides analysis of investment to determine that the project activity itself is not the baseline scenario.

The project consists of the construction and operation of a Greenfield Hydro Power Plant with installed capacity of 855 MW. An analysis of the investment 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.

The review of the project documentation (version 3) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria.

As stated in the Validation Report of Bureau Veritas Certification, the project correctly applies and meets the relevant VCS and UNFCCC-CDM requirements. Specifically, the project conforms to the validation criteria for projects, as set out in the applicable VCS Standard.

3 VERIFICATION PROCESS

3.1 Method and Criteria

This first verification comprises the period from 14-October-2010 to 30-June-2012.

This verification report was prepared between 06-October-2012 and 21-November-2012. This period encompass the site visit preparation, site visit, preliminary report and final report.

The criteria of this verification include the relevant rules and steps as set out in the VCS version 3.3.

The verification process includes:

- A desk review of the VCS PD and supporting documents with the use of the relevant sections of a customized protocol;
- A desk review of the Monitoring Report (MR) and additional supporting documents which the client submitted;
- On-Site assessment on 16/10/2012;
- Background investigation and follow-up interviews with personnel of the project developer;
- Verification reporting (Draft Verification Report and Final Verification Report).

3.2 Document Review

The document review was conducted based in a desk review of the Monitoring Report (MR), calculation spreadsheets and additional supporting documents submitted by the client. The relevant sections of the above-mentioned customized protocol were used.

Also the desk review of the VCS PD, supporting documents and methodology CDM-ACM0002 version 13 was carried out using the relevant sections of a customized protocol.

All the relevant information and evidences regarding project description and monitoring process were assessed and validated by the verification team during the site visit and documentation review.

Reference Documents:

- PD Foz do Chapecó Hydropower Plant Project Activity, version 03 from 15-September-2012
- Validation Report N° BRAZIL-VAL/1236926, version 2, from 21-September-2012
- 1st VCS Monitoring Report, version 01 from 28-September-2012
- 1st VCS Monitoring Report, version 02 from 24-October-2012
- 1st VCS Monitoring Report, version 03 from 05-November-2012
- 1st VCS Monitoring Report, version 04 from 19-November-2012
- Excel spreadsheet "Emissions Reductions - Foz do Chapecó v1"
- Excel spreadsheet "Emissions Reductions - Foz do Chapecó v2"
- Operation License nr. 949/2010, issued on August 25th, 2010 by the environmental national agency – IBAMA, valid for 4 years
- Water License from 16-October-2001, valid for 35 years
- Operation and Maintenance Manual – Module I, II, III and IV
- Contract of Sale of Energy from CCEAR
- Contract of Sale of Energy from CPFL
- Contract of Sale of Energy Piratininga
- Official CCEE¹ Net Electricity Generation Reports for 2010 (Oct-Dec), 2011 and 2012 (Jan-Jun).
- PBA – Consolidated Basic Project (in Portuguese, Projeto Básico Consolidado) issued on 22/December/2006
- Thematic Book of Assured Energy, from April 2005, Brasília-DF
- Concession Contract number 128/2001 – ANEEL (National Agency for Electric Energy), signed on November 7th, 2001
- ONS procedure "Sub-module 12.3 - Maintenance of the metering system for invoicing"
- Metrum Laboratório de Ensaio INMETRO Accreditation Certificate, from 27-02-2012
- Metrum Laboratório de Ensaio INMETRO Certificate of Calibration, number 1906/2011, from 02-09-2011
- CAM Brasil Multiserviços Ltda INMETRO Accreditation Certificate, number 0334 from 19-06-2006
- Calibration certificate – Substation Main Meter - PT-0902A259-01
- Calibration certificate – Substation Back up Meter - PT-0902A301-01

¹ Brazilian Chamber of Commerce for Electric Energy.

- Calibration certificate – Substation Main Meter - PT-0907A212-01
- Calibration certificate – Substation Back up Meter - PT-0810A884-01
- Calibration certificate – Substation Main Meter - PT-0907A215-01
- Calibration certificate – Substation Back-up Meter - PT-0907A574-01
- Calibration certificate – Substation Main Meter - PT-0902A220-01
- Calibration certificate – Substation Back up Meter – PT 0907A571-01
- Approved consolidated baseline and monitoring methodology ACM0002, version 13
- Methodological tool “Tool to calculate the emission factor for an electricity system”, version 02.2.1
- VCS Monitoring Report Template, version 3.1
- VCS Verification Report Template, version 3.2
- VCS Standard, version 3.3

3.3 Interviews

Background investigation and follow-up interviews with personnel of the project developer were conducted during the site visit on October 16th, 2012.

During the site visit, Bureau Veritas Certification performed interviews with the project participants to confirm selected information and to resolve issues identified in the document review.

The following representatives of Foz do Chapecó and Enerbio Consultoria were interviewed:

Foz do Chapecó Energia:

- Gerson Luiz Amadeo – Contracts / Acquisitions assistant

Enerbio Consultoria:

- Denis Padoveze – Environmental Analyst

Project Proponents have been interviewed. The main topics of the interviews were:

- Project Design and implementation;
- Technical Equipment and operation;
- Equipment calibration;
- Monitoring Plan;
- Monitored data;
- Data uncertainty and residual risks;
- GHG Calculation;
- Environmental Impacts;
- Compliance with National Laws and regulations;
- Licenses.

3.4 Site Inspections

On-site assessment was conducted on 16/10/2012, in order to crosscheck all the relevant information and

data provided by the PP, against to the physical documentation and registers, as well as to assess the project description, as per the MR and PD, to that observed in the field.

3.5 Resolution of Any Material Discrepancy

During the verification process some corrective action requests (CAR) and clarification requests (CL) identified by the verifier were raised in the verification protocol and submitted to the PP to be addressed before the conclusion of the verification process.

The resolution of CARs and CLs were carried out by the PP through adjustments in the project documentation, especially in the MR and calculation spreadsheet. In some cases, these adjustments were supported by evidences, additional documentation or technical explanation.

No FARs (Forward Action Requests) were raised during the validation process.

The objective of this phase of the verification 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 GHG emission reduction calculation.

Findings established during the initial verification can either be seen as a non-fulfillment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CAR) is issued, where:

- (a) Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- (b) Mistakes have been made in applying assumptions, data or calculations of emission reductions, which would impair the estimate of emission reductions.

The Clarification Request (CL) is used if information is insufficient or not clear enough to determine whether the applicable VCS version 3 requirements have been met.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol found in the Section 7, below.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

There are no pending CARs or CLs issued in the course of the verification that still needs to be properly addressed to get closed. Before issuance of the final verification report, these CARs and CLs were adequately answered by the project proponent, and are all closed.

The project has a 10-year crediting period, twice renewable.

The first 10-year crediting period is from 14th October 2010 to 14th October 2020. The total Emission Reductions forecasted for that period are 7,678,253 tCO₂e.

The Foz do Chapecó Hydropower Plant Project Activity start date is 14th October 2010, that refers to the first turbine start operating².

Project activity is in commercial operation since 14th October 2010 (first generating turbine). The second generating unit started commercial operations on 23th November 2010. The third generating turbine started on 30th December 2010 and the fourth 12th March 2011. The amount of net electricity generation in 2010 was 479,182.761 MWh and in 2011 was 4,932,552.424 MWh and 2012 was 807,614.138 MWh.

The parameters required by the monitoring plan and the way the Verification Team has verified the values in the Monitoring Report Version 04 are described below:

Data Reported in Monitoring

Data Unit / Parameter:	Electricity Supplied to the Grid – Net Electricity (EG _{facility,y})
Data unit:	MWh/yr
Description:	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y.
Source of data:	Project Activity Site (Meters).
Description of measurement methods and procedures to be applied:	The following parameters shall be measured: (i) The quantity of electricity supplied by the project plant/unit to the grid; and (ii) The quantity of electricity delivered to the project plant/unit from the grid Spreadsheets were used, obtained directly from the meters with information generated hourly, or according to what was programmed by CCEE (Câmara de Comercialização de Energia Elétrica/ Electric Power Commercialization Chamber).

² According to ANEEL Dispatch 3,058 (13-10-2010) – Approval of start of operations for 14-10-2010.

	Monthly, the information was checked with the generation spreadsheets available at the CCEE's website. Besides, information of generation can be checked by receipt of sales, if it is necessary to do so.
Frequency of monitoring/recording:	Continuous measurement and at least monthly recording.
Value monitored:	The values of $EG_{facility,y}$ for each year are: Year 2010 : 479,182.761; year 2011 : 4,932,552.424; Year 2012 807,614.138. These values can be checked in the CCEE official generation spreadsheet of 2010, 2011 and 2012. The verification team accessed the CCEE online platform and was able to download all the official energy generation reports of Foz do Chapecó HPP for this monitoring period. Therefore. All energy generation data used by PP in the last version of the Monitoring Report was crosschecked by the verification team with official CCEE Reports, which are publicly available online.
Monitoring equipment:	Each Generation Unit has two specific meters (principal and backup) located in the substation that registers the net electricity supplied to the Grid by the Unit. Each meter has the same model. The manufacturer is Schneider, model ION8600C, with accuracy class 0.2. The serial numbers of the main meters are: PT-0902A259-01 (UG1), PT-0907A212-01 (UG2), PT-0907A215-01 (UG3), PT-0902A220-01 (UG4). The serial numbers for back up meters are: PT-0902A301-01 (UG1), PT-0810A884-01 (UG2), PT-0907A574-01 (UG3), PT-0907A571-01 (UG4).
QA/QC procedures to be applied:	The uncertainty level for these data is low. They are used to calculate the emission reductions.

	The electricity generated is monitored by the project participants and checked by spreadsheets available at the CCEE's Website (information comparison between operation data and CCEE reports). The first calibrations of the principal and rear meters for UG1 were in: 10/08/2009 (<i>both</i>), for UG2 were in: 11/09/2009 and 27/07/2009, for UG3 were in 11/09/2009 (<i>both</i>) and UG4 were in 10/08/2009 and 11/09/2009. ONS Grid Procedures (Sub-module 12.3) establishes calibration frequency and other maintenance procedures. By the time of completion of this document, the frequency of calibration is a maximum of two years, but in the case of any changes occurred in the ONS Grid Procedures, the project owners shall follow the rules from the relevant sector organizations (e.g. ONS, ANEEL, CCEE). The meters should had been calibrated in august/2011. However a new calibration was just carried out on 29 February 2012. Therefore, between 27/07/2011 to 29/02/2012, the meters were not calibrated. However, according to the "Guidelines for assessing compliance with the calibration frequency requirements", version 01, paragraph 04, if during verification of a certain monitoring period, the DOE identifies that the calibration has been delayed and the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are available), the DOE may conclude its verification, provided the following conservative approach is adopted in the calculation of emission reductions: (a) Applying the maximum permissible error of
--	---

	the instrument to the measured values, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error; or (b) Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment. The company controls the information of net electricity generation in a consolidated way (considering the four generator units), Thus, during this period, the net electricity generated by Foz do Chapecó was calculated according to the item “a” and with the table 01, appendix -1 of this same guidelines.
Calculation method:	The electricity supplied to the grid is calculated in a direct way with information controlled by the meters. For the period of August/2011 to February/2012, the requirements of the Guidelines for assessing compliance with the calibration frequency requirements were followed once the meters were just calibrated on 29 February, 2012.
Any comment:	-

Data Unit / Parameter:	$EF_{grid,CM,y}$ - Combined Margin CO ₂ Emission Factor
Data unit:	tCO ₂ /MWh
Description:	The 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 combined margin CO₂ emission factor used on Foz do Chapecó Project was calculated based on data supplied for the National Interconnected System by Brazilian DNA.

Source of data:	Ex-post emission factor was calculated by project participants with data supplied by MCTI (Ministry of Science and Technology) with ONS (National Electric System Operator) data. The variables $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$, necessary for $EF_{grid,CM,y}$ calculation, was also monitored and calculated by MCTI and ONS, through the Dispatch Data of the National Interconnected System. Data from MCTI is available at: http://www.mct.gov.br/index.php/content/view/74689.html (The verification team used this website to validate the values used by PP in ERs calculation).
Description of measurement methods and procedures to be applied:	As described in the most recent version of the “Tool to calculate the emission factor for an electricity system”.
Frequency of monitoring/recording:	Annually
Value applied:	The values of Combined Margin CO₂, Emission Factor $EF_{grid,CM,y}$ 2010 is: 0.3095 tCO₂/MWh Factor $EF_{grid,CM,y}$ 2011 is: 0.1988 tCO₂/MWh Factor $EF_{grid,CM,y}$ 2012 is: 0.1988 tCO₂/MWh³
Monitoring equipment:	As per the “tool to calculate the emission factor for an electricity system”.
QA/QC procedures to be applied:	As described in the most recent version of the “Tool to calculate the emission factor for an electricity system”. The uncertainty level for these data is low.
Calculation method:	As per the “tool to calculate the emission factor for an electricity system”. Dispatch Data Analysis OM is the Operation Margin Emission Factor method used and the build margin emission factor is updated annually. Both

³ For 2012, it was adopted 2011 vintage for build margin and operation margin calculation as they are the latest data available at de Brazilian DNA website. Accessed on September 2012.

	Operating Margin Emission Factor and Build Margin Emission factor are supplied by MCTI. The combined margin emission factor considers the default value of 0.5 for each Emission factor as recommended by the methodology.
Any comment:	-

Data Unit / Parameter:	Cap _{pi}
Data unit:	W
Description:	Installed Capacity of the hydro power plant after the implementation of the project activity.
Source of data:	Project site
Description of measurement methods and procedures to be applied:	The installed capacity is monitored annually by ANEEL, environment regulators or by sub-hired companies, according recognized standards. It will be monitored yearly.
Frequency of monitoring/recording:	Yearly
Value applied:	855,000,000 W
Monitoring equipment:	The generator capacity at the project site
QA/QC procedures to be applied:	The uncertainty level for these data is low. The installed capacity is determined on the project's beginning and it will be monitored by the Regulator Agent.
Calculation method:	The total of 4 generators capacity (nominal power of 213.75 MW each generator). This was checked by the verification team during site visit, by observing the identification plates attached to the equipment on site.
Any comment:	-

Data Unit / Parameter:	A _{pi}
------------------------	-----------------

Data unit:	m ²
Description:	Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full.
Source of data:	Project site
<i>Description of measurement methods and procedures to be applied:</i>	Measured from topographical surveys and satellite pictures. The reservoir area is also controlled by Brazilian Environmental Agency (Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis – IBAMA) through the operation license. The reservoir area is defined by the engineering project and it would just change due to modifications in the project. To promote any changes in the reservoir area is necessary to have approvals by Environmental Agency. Therefore, the Operation License is an evidence for reservoir area.
Frequency of monitoring/recording:	Yearly
Value applied:	The area of the reservoir of HPP Foz do Chapecó is 79,930,000 m ² from the “principal reservoir” ⁴ + 90,000 m ² from the “passage way” ⁵ . Total of 80,020,000 m ² .
Monitoring equipment:	Topographical measurement to measure the area of the reservoir.
QA/QC procedures to be applied:	The uncertainty level for these data is low. The reservoir area is monitored by environment

⁴ ANEEL's Dispatch 911 of 30/03/2007 for flooded reservoir area of 79.93 km²

⁵ Consolidated Basic Engineering Project prepared by CENEC Engenharia S.A. “HFC-RT1P-GEG00-1001-0”

	regulators.
Calculation method:	The flooded area is demarcated by pickets. Each picket has precise geographical coordinates which generate a faithful reference to the area flooded. After the fulfillment of the reservoir, the water levels will get the base of each picket that will be monitored systematically during the plants operation. The level of water near to the pickets assures that the area of the reservoir is not changed.
Any comment:	-

The DOE crosschecked all the information above, available on the Monitoring Report version 04, with the internal records data related to gross and net electric generation, official national grid emission factor issued by Brazilian DNA (CIMGC - MCTI), official electric generation report records issued by CCEE.

The net electric generation presented in the VERs calculation spreadsheet in hourly base, was crosschecked by the verification team, against the CCEE hourly registry. The CCEE hourly registry system was accessed by the PP and presented to the verification team during the site visit

Also the "*Guidelines for assessing compliance with the calibration frequency requirements*", version 01, was analyzed in order to assess the correct application of the procedures regarding energy calculation for meters that had their calibration delayed or had been replaced during the verification period.

The monitoring of the project activity is implemented in conformity with the Monitoring Plan described in the VCS PD version 3. Therefore, the monitoring plan was followed properly.

No remaining issues from previous validation were identified.

4.2 Accuracy of GHG Emission Reduction or Removal Calculations

The parameters used for the emission reduction calculation are: Quantity of net electricity generation supplied by the project plant/unit to the grid ($EG_{\text{facility},y}$), Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ}), Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (A_{PJ}), Combined margin CO_2 emission factor for grid connected power generation ($EF_{\text{grid.CM},y}$).

For the first parameter ($EG_{\text{facility},y}$), the electricity supplied by the project activity to the grid was double checked with official documents from CCEE. CCEE is a Brazilian government entity, which monitors the electricity on the national interconnected grid.

For the second parameter (Cap_{PJ}), the installed capacity was determined by official entities and was confirmed during on-site visit verifications through the Operational License and by observing the identification plates attached to the equipment on site.

The third parameter (A_{PJ}), was measured from topographical surveys, maps, satellite pictures, etc. (once at the time of the project conception) and water levels (during the project crediting period). It was monitored through Operational License.

The fourth parameter ($EF_{\text{grid},CM,y}$), this value is up-dated annually according to data from the Brazilian DNA and following the prescription of the emission factor tool, since option C) for the calculation of the operating margin was chosen. The $EF_{\text{grid},CM,y}$ was calculated based in the two below mentioned parameters ($EF_{\text{grid},OM,y}$ and $EF_{\text{grid},BM,y}$), by following the procedures of the “Tool to calculate the emission factor for an electricity system”, for hydropower plants ($W_{OM} = 0.5$ and $W_{BM} = 0.5$). Data from the Brazilian DNA (CIMCG – MCTI) is online available at: <http://www.mct.gov.br/index.php/content/view/74689.html>

Project sponsor has proceeded with the necessary measures for the power control and monitoring. Together with the information produced by both project sponsor and the Electric Energy Commercialization Chamber (CCEE), it was possible to monitor the power generation of the project (in MWh/year). CCEE makes feasible and regulates the electricity energy commercialization in Brazil.

Energy data is measured by the meters in real time. Monthly, consolidations are made for payment purposes. Cross check is made between reports from CCEE and power plant.

According to ONS procedures, these meters have to be calibrated every two years after operation starts. All meters calibration was done by ONS requirements, available at: http://www.ons.org.br/download/procedimentos/modulos/Modulo_12/Submodulo%2012.3_Rev_1.0.pdf.

The last calibration of the principal and back-up meters was conducted as follow:

Table 1: Calibration dates of the energy meters

Unit Generator	Type	Location	Meters	Serial Numbers	1 st Calibration date	2 nd Calibration date
GEU1P	Net	substation	Main	PT-0902A259-01	10/08/2009	29/02/2012
GEU1R	Net	substation	Back-up	PT-0902A301-01	10/08/2009	29/02/2012
GEU2P	Net	substation	Main	PT-0907A212-01	11/09/2009	29/02/2012

GEU2R	Net	substation	Back-up	PT-0810A884-01	27/07/2009	29/02/2012
GEU3P	Net	substation	Main	PT-0907A215-01	11/09/2009	29/02/2012
GEU3R	Net	substation	Back-up	PT-0907A574-01	11/09/2009	29/02/2012
GEU4P	Net	substation	Main	PT-0902A220-01	10/08/2009	29/02/2012
GEU4R	Net	substation	Back-up	PT-0907A571-01	11/09/2009	29/02/2012

Therefore, the meters calibrations were made following ONS procedures and according to the “Guidelines for assessing compliance with the calibration frequency requirements”, version 01, paragraph 04, if during verification of a certain monitoring period, the DOE identifies that the calibration has been delayed and the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are available), the DOE may conclude its verification, provided the following conservative approach is adopted in the calculation of emission reductions:

- (a) Applying the maximum permissible error of the instrument to the measured values, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error; or
- (b) Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment.

Thus, during this period, the net electricity generated by Foz do Chapecó was calculated according to the item “a” and with the table 01, appendix -1 of these same guidelines.

The verification team had access and verified the Calibration Certificates of all the energy measurement equipments.

According to the selected approved methodology ACM0002, the emission reductions for the first monitoring period were calculated as follows:

Emission reductions (ER_y)

$$ER_y = BE_y - PE_y$$

Where:

ER_y = Emission Reduction in year y (tCO₂e/yr)

BE_y = Baseline emissions in year y (tCO₂e/yr)

PE_y = Project emissions in year y (tCO₂e/yr)

Baseline emissions (BE_y)

$$BE_y = EG_{PJ,y} * EF_{grid,CM,y}$$

Where:

- BE_y = Baseline emissions in year y (tCO₂/yr)
- EG_{PJ,y} = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
- EF_{grid,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” (tCO₂/MWh)

For Greenfield projects, as it is the case of the proposed project activity:

$$EG_{PJ,y} = EG_{facility,y}$$

Where:

- EG_{PJ,y} = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
- EG_{facility,y} = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

Project Emissions (PE_y)

If the power density (PD) of the project is greater than 10W/m², PE_y = 0

The power density of the project activity is calculated as follows:

$$PD = Cap_{PJ} - Cap_{BL} / A_{PJ} - A_{BL}$$

Where:

- PD = Power density of the project activity, in W/m²
- Cap_{PJ} = Installed capacity of the hydro power plant after the implementation of the project activity (W)
- Cap_{BL} = Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero
- A_{PJ} = Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m²)
- A_{BL} = Area of the reservoir measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m²). For new reservoirs, this value is zero

For Foz do Chapecó:

Capacity of the project = 855 MW

Reservoir area = 80 km²

Power density = $855 / 80 = 10.68 \text{ W/m}^2$, so $PE_y = 0$.

Please refer to the Validation Report of this project for a description on how the project's power density was validated.

Leakage

According to the PD and Validation report, there is no leakage emissions involved in the project.

The two parameters ($EG_{PJ,y}$ and $EF_{grid,CM,y}$), used to calculate the baseline emission, were crosschecked by the verification team against the official records from CCEE (monthly records) and Brazilian DNA (monthly records) and no discrepancy was found.

4.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

The evidences used to determine GHG emission reductions were the official monthly energy generation reports from CCEE. The Electric Power Commercialization Chamber - CCEE is an independent entity that manages and enables the activities of buying and selling of energy throughout the entire country of Brazil (www.ccee.org.br).

All monthly reports (100%) were crosschecked by the verification team, and no discrepancies were found. These reports are publicly available on the CCEE website (for 2011 and 2012 data) or have been provided by CCEE (from 2010 data). Since CCEE is a reliable and independent entity, the verification team confirms that the evidences used to determine GHG Emission Reductions are reliable, sufficient and appropriate for the determination of GHG emission reductions or removals.

4.4 Management and Operational System

As presented in the Monitoring Report version 04, Section 3.3:

HPP Foz do Chapecó Operation and Maintenance Manager is responsible for the operation and maintenance activities of the plant and for the activities of consolidation and analysis of gross and net electricity. Measurements activities are carried out by the operators of the Technology Information team.

Daily, operators of Foz do Chapecó operation team collects electricity generation data from each meter. This activity occurs online with the software. Information of net electricity supplied by the principal meters is consolidated in one spreadsheet.

Data of net electricity generation may be confronted with the information present in the website of the CCEE (Câmara de Comercialização de Energia Elétrica/ Electric Power Commercialization Chamber)

(CCEE - Entity responsible for measurements, accounting and settlement on Brazilian electric energy market).

The emission factor for power generation connected to Brazilian National Interconnected System was made available by Ministry of Science, Technology and Innovation (MCTI) with data of National System Operator, ONS. The variables $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ were calculated and monitored by Enerbio Consultoria through the dispatch data of National Interconnected System. Emission reductions calculations are carried out by Enerbio team.

ONS Grid Procedures (Sub-module 12.3) defines the calibration frequency and other maintenance procedures. By the time of completion of this document, the frequency of calibration is a maximum of two years, but in the case of any changes occurred in the ONS Grid Procedures, the project owners shall follow the rules from the relevant sector organizations (e.g. ONS, ANEEL, CCEE)".

The responsibilities and authorities for monitoring and reporting have been found to be in accordance with the monitoring plan, in the registered PD.

5 VERIFICATION CONCLUSION

Foz do Chapecó has commissioned Bureau Veritas Certification to carry out the 1st periodic verification of the Foz do Chapecó Hydropower Plant Project Activity with regard to the relevant requirements for VCS project activities. The project reduces GHG emissions by supplying clean hydroelectric energy to the Brazilian National Interconnected System (SIN) that in a scenario without the project activity would have been generated by the operation of a grid-connected power plant and by the addition of new generating sources, some of them based in fossil fuel.

This verification covers the period from 14-October-2010 to 30-June-2012.

In the course of the verification, Corrective Action Requests (CAR) and Clarification Requests (CL) were raised and successfully closed. There were 07 CAR and 03 CL raised. No FARs were raised. The verification conclusion is based on the first Monitoring Report (version 4, dated 19-11-2012), the VCS PD (version 3, dated 15-09-2012), Emission Reduction Calculation spreadsheet, version 2 and supporting documents made available to Bureau Veritas Certification by the project participant.

As a result of this verification, the DOE confirms that:

- Bureau Veritas Certification confirms that the project is implemented as planned and described in the Project Description. The monitoring plan is in place and the project is generating GHG emission reductions. The DOE concludes that all operations of the project are implemented and installed as planned and described as in the validated project description;
- The monitoring plan is in accordance with the applied approved CDM methodology, i.e., ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources",

version 13;

- The monitoring system is in place and functional. The project has generated GHG emission reductions.

Bureau Veritas Certification confirms that Monitoring Report version 4 and Emission Reduction Calculation spreadsheet, version 2 are in accordance with the registered monitoring plan and all the calculations were based in reliable monitored data, in the case of non-monitored and pre-defined parameters, has correctly followed the parameters stated in the validated VCS PD, version 3, dated 15-09-2012.

The DOE also confirms that all the data and information used to elaborate this Verification Report are treated confidentially by Bureau Veritas Certification.

Reporting period from 14-October-2010 to 30-June-2012.

Verified GHG emission reductions or removals in the above reporting period:

GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions 2010	148,323.037
Baseline Emissions 2011	980,488.660
Baseline Emissions 2012	160,536.865
Baseline Emissions (total)	1,289,348.563
Project Emissions (total)	0
Leakage (total)	0
Net GHG emission reductions or removals (2010)	148,323.037
Net GHG emission reductions or removals (2011)	980,488.660
Net GHG emission reductions or removals (2012)	160,536.865
Net GHG emission reductions or removals (total)	1,289,348.563



Guilherme Borba Lefèvre
Team Leader
Date: 21/11/2012



Diego Machado Serrano
Internal Technical Reviewer
Date: 21/11/2012

6 VERIFIERS' CVS

Bureau Veritas Certification Lead GHG Verifier

Guilherme B. Lefèvre – He is graduated in Law with experience in GHG Programs, both compulsory and voluntary. Guilherme has vast experience in the development and analysis of CDM, VCS, Social Carbon and CCBS projects. He has an MSc in Environmental Science - São Paulo University. Guilherme trained as a lead auditor in the fields of environment (ISO 14001) and GHG – Green House Gas.

Bureau Veritas Certification GHG Verifier

Maria Cláudia Martinelli Trabulsi - She is graduated in Forest Engineering and has graduated as master in Energy in Agriculture. She has experience in GHG Inventories and Clean development mechanism projects.

Bureau Veritas Certification Internal Technical Reviewer

Diego Serrano - He is a forest engineer graduated by the ESALQ / USP Superior School of Agriculture "Luiz de Queiroz." University of São Paulo, Diego has master degree in Energetic System Planning with forest residues in the State University of Campinas (UNICAMP). His abilities include coordination and elaboration of PDD's in the scopes 1, 4, 13 and 14. Diego is trained as a lead auditor in the fields of environment (ISO 14001) and GHG – Green House Gas.

7 VCS VERIFICATION PROTOCOL

Table 1 **Verification requirements based on the Voluntary Carbon Standard 3**

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
1 Project implementation in accordance with the registered project document			
a Are all physical features of the proposed VCS project proposed in the registered PD in place?	Yes.	OK	OK
b Have the project participants operated the proposed VCS project as per the registered PD?	Yes.	OK	OK
c Was an on-site visit conducted?	Yes. The site visit was conducted on October 16 th 2012.	OK	OK
d If not, justify the rationale of the decision.	Not applicable.	OK	OK
e Does the implementation or operation of VCS project conform with the description contained in the registered PD?	Yes. The implementation status of the Project is described in item 2.2 of Monitoring Report version 01 and crosschecked during the site visit.	OK	OK
f If not, which are the potential impacts due to these changes?	See item “1 e” above.	OK	OK
g Is a grouped project?	Not applicable.	OK	OK
2 Compliance of the monitoring plan with the monitoring methodology			
a Is the validated monitoring plan in accordance with the approved methodology applied by the proposed VCS project?	Yes. However, the calibration of the equipments haven't occurred in the period stipulated by the procedure, but it was calculated according to the “Guidelines for assessing compliance with the calibration frequency requirements”,	OK	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
	version 01.		

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
b Are there any monitoring aspects of the project that are not specified in the methodology (e.g. additional monitoring parameters, monitoring frequency and calibration frequency)?	No. See item “2 a” above.	OK	OK
3 Compliance of monitoring with the monitoring plan			
a Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	All the meter calibration certificates were checked. CAR 01: The “Certificate of calibration standard” of Metrum and CAM wasn’t evidenced. Provide the certificate of calibration standard and the Certificate that Metrum is accredited in RBC (Brazilian Calibration Network, from portuguese Rede Brasileira de Calibração).	CAR 01	OK
b Have all parameters stated in the monitoring plan, the applied methodology been sufficiently monitored and updated as applicable, including:		OK	OK
i Project emission parameters?	Yes. The project emissions are 0. In the methodology ACM 0002, version 13.0.0 says “if the power density of the project activity is greater than 10 W/m², the project emissions are considered to be 0”. The power density of Foz do Chapecó Power Plant is 10.68 W/m².	OK	OK
ii Baseline emission parameters?	See CAR 02, CAR 04 and CAR 05.	OK	OK
iii Leakage parameters?	Yes. There is no leakage.	OK	OK
iv Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the	Yes.	OK	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
monitoring plan?			
c Are equipment controlled and calibrated in accordance with the monitoring plan?	See item “2 a” above.	OK	OK
d Are monitoring results consistently recorded as per approved frequency?	See item “2 a” above.	OK	OK
e Have quality assurance and quality control procedures been applied in accordance with the monitoring plan?	Yes.	OK	OK
4 Assessment of data and calculation of greenhouse gas emission reductions			
a Is a complete set of data for the specified monitoring period available? (If no, i.e., only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the validator shall make the most conservative assumption theoretically possible in finalizing the verification report).	The Monitoring Report version 1 and excel spreadsheet were analyzed and crosschecked with CCEE Reports, PPA, Calibration Certificates, Operational License and Operational Manual from the period October 2010 to June 2012. CAR 02: Provide the CCEE official reports as evidence of electricity supplied to the Grid in 2010. CAR 03: Exclude cell D26 of the file “Electricity Generation” from excel spreadsheet, so the reader can better understand how the value of D27 has been obtained.	CAR 02 CAR 03	OK
b Has information provided in the monitoring report been cross-checked with other sources such as plant	Yes. It was crosschecked with CCEE Reports, PPA, Calibration Certificates, Operational License and Operational	CAR 04	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
log books, inventories, purchase records, laboratory analysis?	Manual from the period October 2010 to June 2012. CAR 04: Provide the latest Environmental Report regarding the Operational License conditions.		
c Have calculations of baseline emissions, proposed project emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	CAR 05: Add a third decimal in the values included in the file "CCEE" from excel spreadsheet, so the values are exactly as the CCEE Reports. CAR 06: According to the "Guidelines for assessing compliance with the calibration frequency requirements", version 01, the error is supposed to be 0,2 % or 0,002 in the file "Correction Factor".	CAR 05 CAR 06	OK
d Have any assumptions used in emission calculations been justified?	CL 01: In the footnote 6, page 12, include "build margin and operation margin". CAR 07: In Section 2.1 of the MR version 1, PP states: The amount of net electricity generation in 2010 (October to December) was 577,400.45 MWh, in 2011 was 4,932,760.62 MWh and in 2012 (January to June) was 807,775.92 MWh.". These values are not in accordance with the information	CL 01 CAR 07	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
	provided in the VCUs calculation spreadsheet. CL 02: Regarding Section 2.1 of the MR version 1, please clarify in the MR was “assured energy” means and how it was calculated. CL 03: In Section 2.2, PP states: “(...) <i>between August/2011 to February/2012, the meters were not calibrated. Thus, during these eight months (...)</i>”. However, according to the calculation spreadsheet, the month July of 2011 was also included in the recalculation of electricity generation (eight months). Please make this more clear in the MR.		
e Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	See <u>CAR 06.</u>	OK	OK

Table 2 Resolution of Corrective Action / Forward Action / Clarification Requests

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
CAR 01: The “Certificate of calibration standard” of Metrum and CAM wasn’t evidenced. Provide the certificate of calibration standard and the Certificate that Metrum is accredited in RBC (Brazilian Calibration Network, from portuguese Rede Brasileira de Calibração).	3a	The certificate of calibration Standard for Metrum (certificate number 1906/2011) and CAM (certificate number 037-09 and 038-09) were provided. CAM certification document are outdated because the calibration frequency is annual and this equipment is no longer used by suppliers.	OK. CAR 01 was closed.
CAR 02: Provide the CCEE official reports as evidence of electricity supplied to the Grid in 2010.	4a	The CCEE official reports were provided. For the purpose of emission reduction the electricity generating test was deduced.	CAR 02 was closed.
CAR 03: Exclude cell D26 of the file “Electricity Generation” from excel spreadsheet, so the reader can better understand how the value of D27 has been obtained.	4a	Cell D26 of the file “Electricity Generation” from excel spreadsheet was excluded.	OK. CAR 03 was closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
CAR 04: Provide the latest Environmental Report regarding the Operational License conditions.	4b	The latest Environmental Report regarding the Operational License conditions was provided.	OK. CAR 04 was closed.
CAR 05: Add a third decimal in the values included in the file “CCEE” from excel spreadsheet, so the values are exactly as the CCEE Reports.	4c	The third decimal was added in the file CCEE.	OK. CAR 05 was closed.
CAR 06: According to the “Guidelines for assessing compliance with the calibration frequency requirements”, version 01, the error is supposed to be 0.2 % or 0.002 in the file “Correction Factor”.	4c	The error was corrected in the file “Correction Factor”.	OK. CAR 06 was closed.
CAR 07: In Section 2.1 of the MR version 1, PP states: The amount of net electricity generation in 2010 (October to December) was 577,400.45 MWh, in 2011 was 4,932,760.62 MWh and in 2012 (January to June) was 807,775.92 MWh.”. These values are not in	4d	PP first response: The amount of net electricity was corrected in the entire monitoring report.	DOE FIRST ANALYSIS: The values in the second paragraph of item 2.1 in the MR version 02 still not in

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
accordance with the information provided in the VCUs calculation spreadsheet.		PP second response: - The information was corrected. - In table 4 the values are correct and presented with the third decimal. - The year was corrected in the the spread sheet Relatório de Geração CCEE.xlsx	accordance with the information provided in the VCUs calculation spreadsheet and MR version 02. And check the “points” and “comma” in the values of net electricity and baseline emissions <u>in the entire Monitoring Report version 02</u>. For example: on page 21, table 4, comma and points are located wrongly in the values. Also, please correct the spread sheet Relatório de Geração CCEE.xlsx. In the 2010 tab, it mentions the year 2011. So, CAR 07 is not closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
			DOE SECOND ANALYSIS: PP has addressed all issues and CAR 07 is closed.
CL 01: In the footnote 6, page 12, include “build margin and operation margin”.	4d	“Build margin and operation margin” were included in the footnote 6 page 12.	OK. CL 01 was closed.
CL 02: Regarding Section 2.1 of the MR version 1, please clarify in the MR was “assured energy” means and how it was calculated.	4d	The assured energy was described in the Monitoring PD section 2.1.	OK. CL 02 was closed.
CL 03: In Section 2.2, PP states: “(...) <i>between August/2011 to February/2012, the meters were not calibrated. Thus, during these eight</i>	4d	The monitoring report was corrected.	OK. CL 03 was closed.

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
months (...). However, according to the calculation spreadsheet, the month July of 2011 was also included in the recalculation of electricity generation (eight months). Please correct in the entire monitoring report where August is mentioned instead of July.			