



**CDM Verification and Certification  
Report for Ceran's Monte Claro run-  
of-river Hydropower Plant CDM  
Project Activity**

**Period:**

**01 March 2005 to 31 December 2006**

28<sup>th</sup> September 2007

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# Verification and Certification Report for Ceran's Monte Claro Run-of-river Hydropower Plant CDM Project Activity

## 1 Summary

- 1.1 *SGS United Kingdom Ltd has verified the implementation of the monitoring plan in the registered project number 0773 and the application of the monitoring methodology ACM0002 version 6 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".*
- 1.2 *This report presents the results of the first verification assessment. A site visit was carried out to verify the data collected during the following period: 1<sup>st</sup> March, 2005 to 31<sup>st</sup> December, 2006.*

## 2 Introduction

SGS United Kingdom Ltd was contracted by Ecoinvest to perform the first verification of Ceran's Monte Claro Run-of-river Hydropower Plant CDM Project Activity. This report covers the following monitoring period:

- 1<sup>st</sup> March 2005 to 31<sup>st</sup> December, 2006

This report presents the findings of the first assessment and provides justification for the verification process and the verification and certification opinion.

## 3 Objectives

The purposes of this verification exercise are, by review of objective evidence, to establish that:

- The emissions report conforms with the requirements of the monitoring plan in the registered PDD and the approved methodology; and
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

## 4 Scope

This engagement covers emissions and emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the Ceran's Monte Claro Run-of-river Hydropower Plant CDM Project Activity (number CDM 0773) during the period: 1<sup>st</sup> March, 2005 to 31<sup>st</sup> December, 2006.

The project consists in a run-of-river hydropower plant with a total installed capacity of 130MW. The project is located in the cities of Bento Gonçalves, Nova Roma do Sul and Veranópolis, state of Rio Grande do Sul, Brazil. The first turbine (65MW) started operation on 29<sup>th</sup> December 2004 and second turbine starts on 29<sup>th</sup> November 2006.

The emissions reductions are achieved by avoiding the dispatch of the same amount of the energy produced by fossil-fuelled thermal plants to that grid. The monitoring methodology applied is ACM0002, version 6.

## 5 Verification Team

Team leader: Fabian Gonçalves  
Local Assessor: Geisa Príncipe (trainee lead assessor)  
Technical reviewer: Siddharth Yadav

## 6 Itinerary

The Verification team spent a total of 2 man day on site (not including travel time) and 3 man day offsite for document and records review. The verification visit was carried out on 30<sup>th</sup> and 31<sup>st</sup> July, 2007.

## 7 Verification process

### 7.1 Summary

The verification process is a two-stage process.

In the first stage, SGS completed a strategic review and risk assessment of CERAN's activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

At the end of this stage, SGS produced:

- A Periodic Verification Checklist which is based on the risk assessment of the parameters and data collection and handling processes for each of those parameters, describes the periodic verification protocol.
- Corrective Action Requests and New Information Requests, if necessary.

In the second stage, SGS verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question, using the Periodic Verification Checklist. This involved a site visit and a desk review of the monitoring report.

At the end of this stage, SGS produced this verification report which will form the basis of any future requests to the CDM EB.

## 8 Results

Assessment against the provisions of Decision 17/CP.7:

Is the project documentation in accordance with the requirements of the registered PDD and relevant provision of decision 17/CP.7, EB decisions and guidance and the COP/MOP?

*Yes. The results of the compliance assessment are recorded in the verification checklist which is used as an internal report only.*

Have on-site inspections been performed that may comprise, *inter alia*, a review of performance records, interviews with project participants and local stakeholders, collection of measurements, observations of established practices and testing of the accuracy of monitoring equipment?

*Yes. The local assessor visited the Ceran's hydro plant, located in the cities of Bento Gonçalves, Nova Roma do Sul and Veranópolis. The plant was in operation and it was possible to verify the installation, equipments and monitoring system. The team undertook interviews, collected data, audited the implementation of procedures, checked data, inter alia. The results of the site visit are recorded in the verification checklist which is used as an internal report only.*

*The energy meters were verified on site: ZIV, 5CTE-E5A-2F640UC model; serial numbers 490006 and 490177. During site visit was presented the calibration certificates "PS1058806/04 (serial numbers 490006 and 490177)" issued on 21/12/2004 for the installed meters. According to the calibration procedure issued by ONS (Manutenção do sistema de medição para faturamento, Submódulo 12.3 Anexo 1, 31/01/2007), the calibration of the meters should be carried out each 2 years. Also Ceran's has provided a declaration from LACTEC that evidences the meters (5CTE-E5A-2F6402UC model, serial numbers 490006 and 490177) complies with standard of the National System Operator (ONS).*

Has data from additional sources been used? If yes, please detail the source and significance.

*Yes. The ex-ante baseline emission factor associated to the electricity (0.2647tCO<sub>2</sub>/MWh) was obtained using data from governmental agencies. The value reported complies with the emission factor calculated and presented in the registered PDD (Ref.1).*

Please review the monitoring results and verify that the monitoring methodologies for the estimation of reductions in anthropogenic emissions by sources have been applied correctly and their documentation is complete and transparent.

*Yes. The amount the electricity delivered to the grid was verified through the reports from internal report, CCEE and CPFL (official source).*

*The energy generated and delivered to the grid is continuously measured. The energy meter registers the energy delivered to the grid on a continuous basis. The project measures EGY every 5 minutes; which is even more frequent than stated in the registered PDD (sec D.2.1.3). The monitoring report presents the consolidated monthly data. The detailed information was verified during verification assessment.*

*Three CAR were raised (see section 8.1).*

*The energy data are consistent with monitoring report, version 2. The monitoring plan was correctly applied in accordance with approved methodology ACM0002 version 6 and registered PDD.*

Have any recommendations for changes to the monitoring methodology for any future crediting period been issued to the project participant? If yes, please detail.

*No.*

Determine the reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CDM project activity, based on the data and information using calculation procedures consistent with those contained in the registered project design document and the monitoring plan.

*The number can be determined with a high level of assurance.*

*The number below was calculated considering the period (1<sup>st</sup> March, 2005 to 31<sup>st</sup> December, 2006).*

*ERs = Electricity sold to the grid during the monitoring period \* baseline emission factor*

*Total electricity generated in the period (2005-2006): 512,615.78MWh  
The ex-ante baseline emission factor: 0.2647 tCO<sub>2</sub>e/MWh.*

*Total emission reduction (03/2005-2006): 512,615.78 MWh \* 0.2647 = 135,689 t CO<sub>2</sub> e*

Identify and inform the project participants of any concerns related to the conformity of the actual project activity and its operation with the registered project design document. Project participants shall address the concerns and supply relevant additional information.

*No concerns were identified.*

Post monitoring report on UNFCCC website

*Yes, the monitoring report and tables are available at  
<http://cdm.unfccc.int/Issuance/MonitoringReports>*

## **8.1 Corrective Action Requests**

### CAR 1

Detail of the non-compliance: The registered PDD (number 0773) mention that the “Electricity generation of the project delivered to grid EGY” will be collected and archived monthly. During site visit was verified that the monitoring report doesn’t comply with the monitoring plan of the PDD. The monitoring report version 1, mention that the electricity delivered is verified, monitored and double checked by report emitted by CCEE. During site visit it was not possible to make double check of the internal report against the CCEE report.

Objective evidence: Provide information about electricity generation according registered monitoring plan.

Close out detail: It was presented a declaration from CPFL that provides information about the electricity generated monthly as requested in the monitoring plan. The declaration complies with electricity generation data provided by CCEE (official data). It was possible to make the cross check data using internal report, CPFL declaration and CCEE data. CAR 1 was closed out.

### CAR 2:

Detail of the non-compliance: The spreadsheet with emission reduction calculation presented by Ecoinvest doesn’t comply with the monitoring plan in the registered PDD.

Objective evidence: Provide “the spreadsheet emission reductions calculation” detailed with monthly data for year 2006.

Close out detail: A new version of the spreadsheet with emission reduction calculation was presented with monthly data for years 2005 and 2006. All information regarding emission reduction calculation in the spreadsheet is correct. CAR 2 was close out.

**CAR 3:**

Detail of the non-compliance: During site visit was presented the calibration certificate "PS1058806/04 (serial numbers 490006 and 490177)" issued on 21/12/2004. According to the calibration procedure issued by ONS (Manutenção do sistema de medição para faturamento, Submódulo 12.3 Anexo 1, 31/01/2007), the calibration of the meters should be carried out each 2 years; therefore, the calibration certificate is valid until 20/12/2006.

Objective evidence: Please, provide evidence that the meters were calibrated on the period 21/12/2006 until 31/12/2006.

Close out detail: The Ceran's company provided a declaration from LACTEC that evidences the meters (5CTE-E5A-2F6402UC model, serial numbers 490006 and 490177) complies with standard of the National System Operator (ONS). CAR 3 was closed out.

**8.2 Observations**

N/A

**8.3 Confirmation of data verified**

Reporting period:

01 March, 2005 to 31 December, 2006

Verified total emission reductions in the above reporting period: 135,689 tCO<sub>2</sub> equivalents

| Period                          | Amount of electricity sold to the grid | Total Emission reductions (t CO <sub>2</sub> equivalents)<br>Net electricity sold* 0,2647 |
|---------------------------------|--|---|
| 01 March to 31 December, 2005   | 243,623.14                             | 64,487.04   |
| 01 January to 31 December, 2006 | 268,992.64                             | 71,202.35   |
| Total                           | 512,615.78                             | 135,689   |



## 9 Conclusion on data quality and decision on materiality

### Compliance:

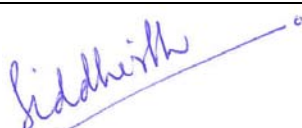
Considering that the CAR raised during the verification are adequately addressed, the monitoring report is considered in compliance with the approved monitoring methodologies and with the Project Design Document registered.

### Data:

The data presented in the revised monitoring report, and the emission reductions determined from that data, are considered to be complete, transparent and free of material error or omission.

## 10 Recommendation

The Verification Lead Assessor recommends that SGS United Kingdom Ltd issue a verification and certification opinion.

|   |   |
|---|---|
| Name and reference number of project  | Ceran's Monte Claro Run-of-river Hydropower Plant CDM Project Activity ( CDM registration reference number 0773)  |
| Scope of Verification   | This scope of this engagement covers the verification and certification of greenhouse gas emission reductions in accordance with section I of Decision 17/CP.7, and relevant decisions of the CDM EB and CoP/MoP. |
| Total GHG emission reductions verified                                      | 135,689t CO <sub>2</sub> equivalents  |
| Registered PDD and Approved Methodology used for Verification               | Ceran's Monte Claro Run-of-river Hydropower Plant CDM Project Activity (registered on 08 <sup>th</sup> April 2007) and methodology ACM0002 version 06.  |
| Verification Opinion with regard to data quality and materiality            | The data are considered to be complete, transparent and free of material error or omission.   |
| Applicable period   | 01 March, 2005 to 31 December, 2006   |
| Dated and signed on behalf of the verification body by authorized signatory | <br>28-09-2007   |

## Annex 1

### Key reference documents:

/1/ Ceran's Monte Claro Run-of-River Hydropower Plant CDM Project Activity (PDD registered on 08<sup>th</sup> April 2007 as a CDM project number 0773).

/2/ ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (version 06, 19 May 2006).

/3/ Ceran`s Monte Claro Run-of-River Hydropower Plant Project Activity - Monitoring Report (version 1, 5<sup>th</sup> June 2007), (version 2, 7<sup>th</sup> August, 2007) and (version 3, 28<sup>th</sup> September, 2007).

*Other documents provided by the Client:*

/4/ ANEEL document, N. 1.100, 28<sup>th</sup> December 2004.

/5/ ANEEL document, N. 2.803, 28 November 2006.

/6/ (a) Calibration certificate, number PS1058806/04, (serial numbers 490006 and 490177), 21/12/2006, issued by Eletrosul.

/7/ Calibration procedure issued by ONS.

/8/ CCEE Procedure

/9/ (a, b and c) Operation license

/10/ Lactec declaration.

/11/ Energy generation procedure

/12/ Ceran report

/13/ CPFL report

/14/ CCEE report

/15/ CERs spreadsheet

*Persons interviewed:*

Luiz Carlos Silveira – Ceran (Operacional Manager)  
Gustavo Furini – Ceran (Environmental assistant)  
Eduardo Bess Ferraz – Ceran ( Operation Engineer)  
Eduardo Barros – Ceran (Finance Annalist)  
José Ângelo Ohro – Ecoinvest (Consultant)  
Karen Nagai – Ecoinvest (Consultant)