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# **Validation Report**

**BERTIN LTDA.**

## **Validation of the Brasil Central Energia S.A. – Sacre 2 Small Hydro Power Plant Project**

**Report No. 893664, rev. 4**

**March 13, 2008**

TÜV SÜD Industrie Service GmbH  
Carbon Management Service  
Westendstr. 199 - 80686 Munich – GERMANY

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| <b>Executing Operational Unit:</b>   |   | TÜV SÜD Industrie Service GmbH<br>Carbon Management Service<br>Westendstr. 199 - 80686 Munich<br>Federal Republic of Germany |                              |                      |
| <b>Contact:</b>  |   | <a href="http://www.tuev-sued.de">www.tuev-sued.de</a>   |                              |                      |
| <b>Client:</b>   |   | Bertin Ltda.<br>Parque Industrial<br>Cx. Postal 211<br>Lins, Sao Paulo<br>ZIP code: 16404-110<br>Brazil.                     |                              |                      |
| <b>Contract approved by:</b>   |   | Werner Betzenbichler   |                              |                      |
| <b>Report Title:</b>   |   | Brasil Central Energia S.A. – Sacre 2 Small Hydro Power Plant Project  |                              |                      |
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| <p>Summary:</p> <p>The Certification Body "Climate and Energy" has been ordered by Bertin Ltda. and Ecoinvest Carbon Brasil Ltda. to perform a validation of the above mentioned project.</p> <p>In summary, it is TÜV SÜD's opinion that the project "Brasil Central Energia S.A. – Sacre 2 Small Hydro Power Plant Project", as described in the revised project design document of May 28, 2007, meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board and that the project furthermore meets all relevant host country criteria and correctly applies the baseline and monitoring methodology ACM0002 - "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (Version 6, May 19<sup>th</sup>,2006).</p> <p>Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.</p> <p>Additionally the assessment team reviewed the estimation of the projected emission reductions. We can confirm that the indicated amount of emission reductions of 445 961 tonnes CO<sub>2e</sub> over a crediting period of seven years, resulting in a calculated annual average of 63 709 tonnes CO<sub>2e</sub> represents a reasonable estimation using the assumptions given by the project documents.</p> |   |  |                              |                      |
| Work carried out by:   | Markus Knödseder (ATL)<br>Johann Thaler (GHG-A)<br>Sergio Degener (GHG-A) |  | Internal Quality Control by: | Werner Betzenbichler |

## Abbreviations

|          |  |
|----------|--|
| CAR      | Corrective Action Request                                  |
| CDM      | Clean Development Mechanism                                |
| CER      | Certified Emission Reduction                               |
| CR       | Clarification Request                                      |
| DNA      | Designated National Authority                              |
| DOE      | Designated Operational Entity                              |
| EIA / EA | Environmental Impact Assessment / Environmental Assessment |
| ER       | Emission reduction   |
| GHG      | Greenhouse gas(es)   |
| KP       | Kyoto Protocol   |
| MP       | Monitoring Plan  |
| ONS      | Operador Nacional do Sistema Eletrico                      |
| PDD      | Project Design Document                                    |
| SHP      | Small Hydroelectric Power Plant                            |
| TÜV SÜD  | TÜV SÜD Industrie Service GmbH                             |
| UNFCCC   | United Nations Framework Convention on Climate Change      |
| VVM      | Validation and Verification Manual                         |

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## 1 INTRODUCTION

### 1.1 Objective

Ecoinvest Carbon Brasil Ltda. has commissioned TÜV SÜD Industrie Service GmbH (TÜV SÜD) to validate the Brasil Central Energia S.A. – Sacre 2 Small Hydro Power Plant Project. The validation serves as design verification and is a requirement of all CDM projects. The purpose of a validation is to have an independent third party assess 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 meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

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

### 1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. TÜV SÜD has, based on the recommendations in the Validation and Verification Manual employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The audit team has been provided with the first PDD-version in September 2006. Based on this documentation a document review and a fact finding mission in form of an on site audit has taken place. The demanded additional information is addressed in annex 1. Requested information was given and the PDD was updated accordingly. That final PDD version 9 was submitted on May 28, 2007 and serves as the basis for the final assessment presented herewith. In the final PDD some information has been added and changed. However, the changes were not significant, thus it was not necessary to repeat the global stakeholder process.

Studying the existing project documentation, it was obvious that the competence and capability of the validation team has to cover at least the following aspects:

- Knowledge of Kyoto Protocol and the Marrakech Accords
- Environmental and Social Impact Assessment
- Skills in environmental auditing (ISO 14000, EMAS)
- Quality assurance
- Operations in SHPs including knowledge about technology used in small hydropower plants.
- Monitoring concepts
- Political, economical and technical random conditions in host country

According to these requirements TÜV SÜD has assembled a project team in accordance with the appointment rules of the TÜV certification body "climate and energy":

**Markus Knödlseeder** is an auditor for climate change projects and GHG emission inventories at the department “Carbon Management Service” in the head office of TÜV SÜD Industrie Service GmbH, Munich. He has been involved in the topic of environmental auditing, baselining, monitoring and verification due to the requirements of the Kyoto Protocol since Oct. 2001. His main focus lies on renewable energies.

**Johann Thaler** graduated as Master of environmental Economy at the University of Augsburg. During his study he got first experiences in environmental management systems. His master thesis was about a fuel switch program in Brazil as a CDM project. Based in Brazil he has been working for TÜV SÜD as a GHG auditor on freelance basis since March 2005.

**Sergio Degener** is a GHG auditor at the “Carbon Management Service” in the head office of TÜV SÜD Industrie Service GmbH, Germany. Mr. Degener studied environmental engineer at the University of Applied Science in Bingen, Germany. Beside his main focus in studies of environmental economics and law, he dealt with environmental management and environmental controlling issues.

The audit team covers following requirements:

- Knowledge of Kyoto Protocol and the Marrakech Accords (All)
- Environmental and Social Impact Assessment (All)
- Skills in environmental auditing (ISO 14000, EMAS) (Knödlseeder)
- Quality assurance (Knödlseeder)
- Operations in SHPs including knowledge about technology used in small hydropower plants (All)
- Monitoring concepts (All)
- Political, economical and technical random conditions in host country (Thaler)

In order to have an internal quality control of the project, a team of the following persons has been composed by the certification body “climate and energy”:

Werner Betzenbichler (head of certification body)

### 1.3 GHG Project Description

The project consists of a small hydroelectric power plant (SHP) called Sacre 2 with 30 MW of installed capacity. The plant is located in Brasnorte on the Sacre River, in the state of Mato Grosso, Midwest region of Brazil. The power plant became operational in September, 2006.

The main objective of “Sacre 2 Small Hydro Power Plant Project” is to supply the grid with clean, renewable hydroelectric power while contributing to the regional/local economic development.

Brasil Central Energia S.A., the owner of Sacre 2 Project, is a company from Bertin Group. Bertin Group is a holding 100% national and has 28 productive units with divisions in: farming, food, biodiesel, cosmetic, leather, dog toy, individual protection equipments, industrial hygiene and cleaning, energy, transport, sanitation and construction.

The estimated amount of GHG emission reductions from the project is 445 961 tonnes of CO<sub>2e</sub> during the first crediting period (7 years) resulting in estimated average annual emission reductions of 63 709 tonnes of CO<sub>2e</sub>.

Project participants are Brasil Central Energia S.A. and Ecoinvest Carbon Brasil Ltda. Host Party of the project activity is Brazil and it consists of a unilateral project.

The sectoral category of the project activity is Sectoral Scope: 1 – Energy industries (renewable - / non-renewable sources). “Sacre 2 Small Hydro Power Plant Project” generates renewable electricity for the Brazilian South-Southeast-Midwest interconnected grid.

The approved and applied baseline and monitoring methodology is ACM0002 - “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (Version 6, May 19<sup>th</sup>,2006).

According to the PDD and involved parties the starting date of the project activity is September 14, 2006. The crediting period is committed as a 7 years renewable crediting period and it starts on July 1, 2008.

## 2 METHODOLOGY

The validation of the project consists of the following three phases:

- Desk review
- Follow-up interviews
- Resolution of clarification and corrective action requests

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

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

The completed validation protocol is enclosed in Annex 1 to this report.

| Validation Protocol Table 1: Mandatory Requirements |   |   |   |
|---|---|---|---|
| Requirement   | Reference   | Conclusion  | Cross reference   |
| The requirements the project must meet.             | Gives reference to the legislation or agreement where the requirement is found. | This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) of risk or non-compliance with stated requirements. The corrective action requests are numbered and presented to the client in the Validation report. | Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process. |

| Validation Protocol Table 2: Requirement checklist   |   |  |  |  |
|--|---|--|--|--|
| Checklist Question   | Reference   | Means of verification (MoV)  | Comment  | Draft and/or Final Conclusion  |
| The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further subdivided. The lowest level constitutes a checklist question. | Gives reference to documents where the answer to the checklist question or item is found. | Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable. | The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached. | This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification is used when the validation team has identified a need for further clarification. |

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

Figure 1 Validation Protocol Tables

## 2.1 Review of Documents

The project design document submitted by the client and additional background documents related to the project design and baseline were reviewed. The audit team has been provided with the first PDD-version issued on September 15, 2006 which had been made public on [www.netinform.de](http://www.netinform.de). The project design document was assessed by a revision due to a corrective action request and clarification requests issued by TÜV SÜD. The final updated PDD version 9 issued on May 28, 2007 serves as the basis for the assessment presented herewith.

## 2.2 Follow-up Interviews

In October 2006 TÜV SÜD performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Brasil Central Energia S.A. and Ecoinvest Carbon Brasil Ltda. were interviewed. The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

| Interviewed organization                       | Interview topics   |
|--|--|
| Representatives of Brasil Central Energia S.A. | <ul style="list-style-type: none"> <li>• Project design</li> <li>• Technical equipment</li> <li>• Sustainable development issues</li> <li>• Additionality</li> <li>• Crediting period</li> <li>• Monitoring plan</li> <li>• Management system</li> <li>• Environmental impacts</li> <li>• Stakeholder process</li> </ul> |
| Ecoinvest Carbon Brasil Ltda.                  | <ul style="list-style-type: none"> <li>• Project design</li> <li>• Technical equipment</li> </ul>  |

|  |   |
|--|---|
|  | <ul style="list-style-type: none"><li>• Sustainable development issues</li><li>• Baseline determination</li><li>• Additionality</li><li>• Crediting period</li><li>• Monitoring plan</li><li>• Environmental impacts</li><li>• Stakeholder process</li><li>• Approval by the host country</li></ul> |
|--|---|

## 2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which needed to be clarified for TÜV SÜD's positive conclusion on the project design. The Corrective Action Requests (CAR) and Clarification Requests (CR) raised by TÜV SÜD were resolved during communications between the Client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are summarized in chapter 3 below and documented in more detail in the validation protocol in Annex 1.

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.

### 3 VALIDATION FINDINGS

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

- 1) The findings from the desk review of the project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Validation Protocol in Annex 1.
- 2) Where TÜV SÜD had identified issues that needed clarification or that represented a risk to fulfil project objectives, a Clarification Request or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Annex 1. The validation of the project resulted in two Corrective Action Requests and six Clarification Requests.
- 3) Where Clarification or Corrective Action Requests have been issued, the exchanges between the Client and TÜV SÜD to resolve these Clarification or Corrective Action Requests is summarized.
- 4) The final conclusions for validation subject are presented.

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

#### 3.1 General Description of Project Activity

##### 3.1.1 Discussion

The project participants are Brasil Central Energia S.A. and Ecoinvest Carbon Brasil Ltda. The project is developed by Ecoinvest Carbon Brasil Ltda. Brazil as the host Party meets all relevant participation requirements. The project has been approved by the national DNA and the Letter of Approval has been issued.

The objective of the project "Brasil Central Energia S.A. – Sacre 2 Small Hydro Power Plant Project" is to avoid greenhouse gas emissions by Sacre 2 Small Hydro Power Plant through supplying clean, renewable electricity to the Brazilian South-Southeast-Midwest interconnected grid system and thus avoiding the use of fossil fuel fired thermal plants. Besides, the project contributes to environmental, social and economic sustainability by increasing the renewable energy's share of the total Brazilian electricity consumption. The project design does reflect current good practice. The design has been professionally developed. A validation of the compatibility of the single components carried out by the project developer resulted in a positive conclusion. The project does moreover apply state of the art equipment.

The project boundaries are clearly defined. The South-Southeast-Midwest interconnected sub-system of the Brazilian grid where the project activity is located is considered as the spatial boundary. Considering that Sacre 2 has no reservoir, there are no emissions from the project activity neither a spatial boundary for project activity emissions.

The project equipment can be expected to run for the whole project period and it can not be expected that it will be replaced by more efficient technologies. Initial training and maintenance efforts are required. In the PDD and during the visit on site the project developer confirmed that such training has taken place and/or is envisaged.

The project is currently in line with the relevant legislation and plans in the host country. The required environmental licenses are valid and have been submitted to the validation team.

The project is fulfilling the requirements made by the Brazilian DNA and is considered to be in line with the sustainable development policies of Brazil as destruction of GHG emissions in order to combat global climate change and increase the share of renewable energies are relevant issues in the national Brazilian policy.

The environmental impacts of the project are considered small by the host country definition of small-hydro plants, principally as well because the project consists of a run-of-river hydro plant. Thus, no water reservoir is necessary for the project, what avoids possible environmental impacts.

The funding for the project does not lead to a diversion of official development assistance, as according to the information obtained by the audit team, ODA does not contribute to the financing of the project.

The project starting date and the operational lifetime are clearly defined. The crediting period is clearly defined.

### **3.1.2 Findings**

#### Corrective Action Request 1:

Page 3 (line 3), page 4 (line 6), page 6 (A.4.2.), page 9 (B.3.), page 21 (Step 5), page 36 and page 38 of the PDD are mentioning Sacre II as hydro-power plant with reservoir. Ecoinvest should correct the type of power plant to run-of-river as it has been identified on-site by the validation team.

#### Answer:

Information has been amended in the last submitted PDD.

#### Corrective Action Request 2:

Ecoinvest has to update the PDD with the new project start of April 1<sup>st</sup>, 2007 and thus change the emission reduction calculation.

#### Answer:

Information has been updated in the last submitted PDD. The project start is determined for September 14, 2006.

#### Clarification Request 1:

The description of the project activity should include the emission projection, i.e. how many tonnes CO<sub>2</sub> the project will reduce.

#### Answer:

The emission projection is presented in A.4.4. It shows estimated amount of emission reductions over the chosen crediting period.

#### Clarification Request 2:

The sectoral category 01 should be mentioned in the PDD under A.4.2.

#### Answer:

Information has been updated in the last submitted PDD.

### 3.1.3 Conclusion

The corrective action and clarification requests have been resolved and the project does comply with the requirements.

Further details to that conclusion are documented in annex 1 of that validation report.

## 3.2 Baseline Methodology

### 3.2.1 Discussion

The project is based on the approved methodology: ACM0002 - "Consolidated baseline methodology for grid-connected electricity generation from renewable sources". The most updated version 6 of the methodology has been approved by the CDM Executive Board on May 19<sup>th</sup>, 2006. The selected methodology has been designed for this project and hence the project is part of the methodology on which it is build upon. Therefore the respective baseline methodology is deemed to be the most applicable one for this project. The PDD responds convincingly to each of the applicability criteria which are outlined in the baseline methodology.

The application of the methodology and the discussion and determination of the baseline are transparent. The application follows exactly each of the steps outlined in the methodology and answers the corresponding sections in a proper manner.

The baseline is been determined using reliable assumptions. The parameter "Electricity generation of the project delivered to the grid" as one of the decisive parameters for the quantitative prognosis is determined by flow-meters. The energy meters (two) are specified by the energy distribution company and approved by ONS. Sacre 2 utilizes an ION 8600, SM 3050/3 type, manufactured by Schlumberger. These meters are calibrated by CEMAT - Centrais Elétricas Matogrosses S.A at every 2 years, according NBR 14521 (Brazilian Norms – Proceedings for accepting a portion of electric energy electronic meters, from the Portuguese *Procedimentos de Aceitação de lotes de medidores eletrônicos de energia elétrica*). The equipments and meters used in Sacre 2 SHP have been successfully applied to similar projects in Brazil and around the world and have by legal requirements extremely low level of uncertainty. Measurements are controlled in real time by the SHP Digital System and compared between the two meters at the substation, so that any problems can be detected (like water shortage, materials inside the turbines, meter inaccuracy, etc). In case of any problem, plant personnel will be put in action.

During the visit on site this measurement approach has been confirmed by the owner of the project.

Regarding the emissions factor, as a decisive parameter for the calculation of the baseline, the project participants decided at the end of the validation process to switch from the ex-post approach to the ex-ante approach.

The validation team has been informed the project participants that data of 2006 are already available to calculate the emissions factor for 2006. However, as Brazil has a large number of power plants and the system is very complex, the calculation of the Operating Margin emission factor ( $EF_{OM}$ ) demands a long time for analyzing the data, calculation and revision. At the time of concluding the validation for the purpose of submitting the validation report to the DNA, no further current data than here presented was available. Due to that the emissions factor calculation of 2005 (0.2611 tCO<sub>2</sub>/MWh) is based on data from the National Dispatch Center ONS from 2003, 2004 and 2005.

In order to determine if the project activity is additional, the additionality tool approved by the Executive Board is applied, with the following steps:

| <b>Additionality of the project activity according to PDD</b>   | <b>Evaluation by Validation Team</b>   |
|---|--|
| Step 0: Not applicable.   | The validation team agrees that Step 0 of additionality tool is not applicable.  |
| Step 1. Identification of alternatives to the project activity consistent with current laws and regulations<br><br>Sub-step 1a. Define alternatives to the project activity<br><br>Sub-step 1b. Enforcement of applicable laws and regulations: | The validation team agrees that the continuation of the baseline situation is the most likely scenario.<br><br>At the moment of validation both the baseline scenario and the project scenario are in compliance with all regulations.   |
| Step 2. Investment analysis   | The investment analysis has not been applied.  |
| Step 3. Barrier analysis  | The investment and institutional barriers mentioned in the PDD are plausible and the validation team agrees that they are obstacles for the implementation of the project. The cash-flow calculation including the calculation of the IRR (Internal Rate of Return) without and with CER credits (see Annex 3) made by Ecoinvest shows how the CER revenues help to overcome the investment barrier. |
| Step 4. Common Practice Analysis<br><br>Sub-step 4a: Analyse other activities similar to the proposed project activity<br><br>Sub-step 4b: Discuss any similar options that are occurring   | According to local experience the validation team agrees that similar projects being developed in the country are participating in the PROINFA Program, and those which are not part of the PROINFA program are realised as CDM projects.  |
| Step 5. Impact of CDM registration  | The validation team is convinced that the project will not be implemented in the foreseeable future without CDM  |

Concluding it can be stated that it has been made plausible that the chosen baseline scenario is the one deemed most realistic under the given frame conditions.

References have been made to all data sources used.

### 3.2.2 Findings

None

### 3.2.3 Conclusion

The project does comply with the requirements. The calculation of the South-Southeast-Midwest grid factor according to the ACM0002 is based on the years 2003, 2004 and 2005. More recent data are not available so far. The validation team, however, agrees to that calculation and data basis only on the assumption that during the issuance of the Letter of Approval by the Brazilian

Designated National Authority the available data basis can not be updated. In case of updated available data the appropriate grid factor has to be updated.

Further details to that conclusion are documented in annex 1 of that validation report.

### **3.3 Duration of the Project / Crediting Period**

#### **3.3.1 Discussion**

According to the PDD and involved parties the starting date of the project activity is on September 14, 2006. The crediting period is committed as a 7 years renewable crediting period and it starts on July 1<sup>st</sup>, 2008.

#### **3.3.2 Findings**

None

#### **3.3.3 Conclusion**

The project does comply with the requirements. Further details to that conclusion are documented in annex 1 of that validation report.

### **3.4 Monitoring Plan**

#### **3.4.1 Discussion**

The project is based on an approved monitoring methodology ACM0002 - "Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources". The most updated version 6 of the methodology has been approved by the CDM Executive Board on May 19<sup>th</sup>, 2006.

The selected methodology has been designed for this project and hence the project is part of the methodology it is build upon. Therefore the respective monitoring methodology is deemed to be the most applicable one for this project. The PDD responds convincingly to each of the applicability criteria which are outlined in the monitoring methodology.

Details of the methodology as parameters to be obtained, recording frequency and archiving methods are considered being reasonable and appropriate.

The monitoring plan does include all relevant parameters to determine baseline emissions and it is possible to monitor and/or measure the currently specified GHG indicators. The indicators which are not measured can be obtained from IPCC documents. The parameters defined allow calculating the baseline emissions in a proper manner.

The project is considered to have no negative environmental, social and economic effects and a monitoring of such data is also not required by the applied monitoring methodology. This approach is deemed sufficient.

It is clearly determined who will be responsible for registration, monitoring, measurement, reporting, maintenance and operation and who will be responsible for calibration of the flow-meters.

### **3.4.2 Findings**

#### Clarification Request 4:

Table B.7.1. of the PDD should mention the uncertainty levels for the parameters  $EF_y$ ,  $EG_y$  and  $m^2$ .

#### Answer:

Information regarding uncertainty level of the variables was included in the last submitted PDD.

#### Clarification Request 5:

There were no documented procedures to cover those situations. The operation, maintenance and emergency manual which are mentioned in Annex 4 (Monitoring Plan) should be provided to the validation team.

#### Answer:

Annex 4 (Monitoring Plan) has been changed. The operation maintenance and emergency manual is not mentioned anymore.

Contract between Rede Comercializadora de Energia S/A who will be responsible for the operation and maintenance of Sacre 2 SHP and Sacre 2 has been submitted to the validation team.

#### Clarification Request 6:

Information dealing with possible monitoring data adjustments and uncertainties, for review of reported results/data, for internal audits of GHG project compliance with operational requirements and for corrective actions should be submitted to the validation team.

#### Answer:

All the information regards to possible monitoring data adjustments and uncertainties, related to GHG Project, are in compliance with all operational requirements and they were submitted to the validation team.

### **3.4.3 Conclusion**

The validation team can not identify any risks due to inadequate management structure or quality assurance. The above mentioned requests are answered sufficiently for validation purposes. Further details to that conclusion are documented in annex 1 of that validation report.

### **3.5 Calculation of GHG Emissions by Source**

#### **3.5.1 Discussion**

The project spatial boundary is clearly described and limited to the South-Southeast-Midwest interconnected grid subsystem. An exact and correct description of the project boundary is included in chapter B.3 of the PDD.

Details of direct and indirect emissions are discussed in the PDD in an appropriate manner. All aspects are covered by the current approach.

The calculations resulting in the final numbers have been submitted. The formulae used are correctly applied.

The calculation of the emission grid factor is based on plants' daily dispatch information provided by ONS (National System Operator). The data used are from the years 2003, 2004 and 2005. The validation team agrees to that calculation and data basis only on the assumption that during the issuance of the Letter of Approval by the Brazilian Designated National Authority the available data basis can not be updated. In case of updated available data the appropriate emission grid factor has to be updated.

Some estimates are derived from accepted international sources, it seems reasonable to assume that they are accurate. The approach is deemed sufficient.

In the given project leakage emissions are expected not to occur.

Concluding it can be stated that the project emissions will be reduced compared to the baseline scenario by 445 961 tonnes CO<sub>2</sub>e over a crediting period of seven years, resulting in a calculated annual average of 63 709 tonnes CO<sub>2</sub> over a crediting period of seven years.

#### **3.5.2 Findings**

##### Clarification Request 3:

The relevant grid, namely South-Southeast-Midwest grid should be mentioned and described as spatial boundary in Chapter B.3. as well as the spatial boundary for project activity emissions (emissions from reservoir).

##### Answer:

Information has been updated in the last submitted PDD.

#### **3.5.3 Conclusion**

The clarification request has been resolved and the project does comply with the requirements. Further details to that conclusion are documented in annex 1 of that validation report.

### **3.6 Environmental Impacts**

#### **3.6.1 Discussion**

The plant has obtained preliminary, construction and operation licenses. The operation license was issued by the State Environmental Secretary SEMA (Mato Grosso). According to information given to the validation team on-site an EIA is not necessary.

Negative environmental effects are not expected to be created by the project. Given the nature of the project design this seems to be reasonable.

Transboundary effects are not expected as the project site is far from the national boundary.

As no significant environmental impacts are expected, such impacts have not influenced the project design.

### **3.6.2 Findings**

None

### **3.6.3 Conclusion**

The project does comply with the environmental requirements.

## **3.7 Comments by Local Stakeholders**

### **3.7.1 Discussion**

Local stakeholders were invited to comment on the project in accordance with the requirements of Resolution 1 of the Brazilian Interministerial Commission on Global Climate Change, the Brazilian DNA. The City Hall, the City Council, the state and municipal environmental agencies, the Brazilian forum of NGOs, the local community association and the state public attorney were invited to comment on the project. The letters sent to these local stakeholders were verified during the on-site visit. One comment of the Brazilian forum of NGOs has been received. The comment has been taken into account and answered respectively.

### **3.7.2 Findings**

None

### **3.7.3 Conclusion**

The project complies with the requirements. Further details to that conclusion are documented in annex 1 of that validation report

## **4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS**

TÜV SÜD published the project documents on its website from October 11 until November 09, 2006 and invited comments within 30 days, by Parties, stakeholders and non-governmental organizations.

Published on:

[http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=2168&Ebene1\\_ID=26&Ebene2\\_ID=647&mode=1](http://www.netinform.de/KE/Wegweiser/Guide2.aspx?ID=2168&Ebene1_ID=26&Ebene2_ID=647&mode=1)

During the commenting period there have been no comments received.

## 5 VALIDATION OPINION

The Certification Body "Climate and Energy" has been ordered by Bertin Ltda. and Ecoinvest Carbon Brasil Ltda. to validate the project "Brasil Central Energia S.A. – Sacre 2 Small Hydro Power Plant Project".

Through generation of renewable electricity from a small hydropower plant and its supply into the Brazilian South-Southeast-Midwest interconnected grid subsystem, the project results in reductions of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. By applying the additionality tool it is demonstrated 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 as designed, the project is likely to achieve the estimated amount of emission reductions.

Additionally the assessment team reviewed the estimation of the projected emission reductions. TÜV SÜD can confirm that the indicated amount of emission reductions of 445 961 tonnes CO<sub>2e</sub> over a crediting period of seven years, resulting in a calculated annual average of 63 709 tonnes CO<sub>2e</sub> represents a reasonable estimation using the assumptions given by the project documents.

It is opinion of TÜV SÜD that the project as described in the final project design document issued on May 28, 2007 meets all relevant UNFCCC requirements for the CDM, set by the Kyoto Protocol, the Marrakech Accords and relevant guidance by the CDM Executive Board; furthermore that the project meets all relevant host country criteria and correctly applies the baseline and monitoring methodology ACM0002 - "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (Version 6, May 19<sup>th</sup>, 2006).

Hence, TÜV SÜD will recommend the project for registration as CDM project activity by the CDM Executive Board.

Prior to the submission of this validation report to the CDM Executive Board, TÜV SÜD will have to receive the written approval of the DNA of involved parties, including confirmation by the DNA of Brazil that the project assists in achieving sustainable development. The validation is based on the information made available to TÜV SÜD and the engagement conditions detailed in this report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

Munich, 2008/03/13



**Werner Betzenbichler**

Deputy head certification body  
"climate and energy"

Munich, 2008/03/13



**Markus Knödlseeder**

Project Manager

Document: Validation Report Sacre .doc

Validation of the Brasil Central Energia S.A. – Sacre 2 Small Hydro  
Power Plant Project



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## **Annex 1: Validation Protocol**

## Validation Protocol

Project Title: "Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project"

Date of Completion: 13.03.2008

Number of Pages: 1



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**Table 1 Conformity of Project Activity and PDD**

| CHECKLIST TOPIC / QUESTION                        |   | Ref.   | COMMENTS   | PDD in GSP                          | Final PDD                           |
|---|---|--------|--|-------------------------------------|-------------------------------------|
| <b>A. General description of project activity</b> |   |        |  |                                     |                                     |
| <b>A.1. Title of the project activity</b>         |   |        |  |                                     |                                     |
| A.1.1.  | Does the used project title clearly enable to identify the unique CDM activity?       | 2      | Yes, the project title clearly enables to identify the unique CDM activity.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.1.2.  | Are there any indication concerning the revision number and the date of the revision? | 2      | Yes, the revision number and the date of revision of the PDD are clearly presented.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.1.3.  | Is this consistent with the time line of the project's history?                       | 2      | Yes, the information aforementioned is consistent with the time line of the project's history.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>A.2. Description of the project activity</b>   |   |        |  |                                     |                                     |
| A.2.1.  | Is the description delivering a transparent overview of the project activities?       | 1<br>2 | <p>The project activity is well described, nevertheless through the whole PDD it is not clear stated whether Sacre II is a run-of-river hydro power plant or a hydro power plant with reservoir. The validation team has clearly identified during the on-site visit that the project activity corresponds to a run-of-river hydro power plant without reservoir.</p> <p><b>Corrective Action Request No.1</b></p> <p>Page 3 (line 3), page 4 (line 6), page 6 (A.4.2.), page 9 (B.3.), page 21 (Step 5), page 36 and page 38 of the PDD are mentioning Sacre II as hydro-power plant with reservoir. Ecoinvest should correct the type of power plant to run-of-river as it has been identified on-site by the validation team.</p> | CAR1                                | <input checked="" type="checkbox"/> |
| A.2.2.  | What proofs are available demonstrating   | 1      | Yes, enough proofs were review such as purchase agreement  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

## Validation Protocol

Project Title: "Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project"

Date of Completion: 13.03.2008

Number of Pages: 2



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| CHECKLIST TOPIC / QUESTION   |  | Ref.   | COMMENTS   | PDD in GSP                          | Final PDD                           |
|--|--|--------|--|-------------------------------------|-------------------------------------|
| that the project description is in compliance with the actual situation or planning? |  | 2      | and contracts demonstrating the compliance with the actual situation and planning of the project.  |                                     |                                     |
| A.2.3.   | Is the information provided by these proofs consistent with the information provided by the PDD?   | 1<br>2 | <b>Clarification Request No. 1</b><br>The description of the project activity should include the emission projection, i.e. how many tones CO2 the project will reduce. | CR1                                 | <input checked="" type="checkbox"/> |
| A.2.4.   | Is all information presented consistent with details provided by further chapters of the PDD?  | 1<br>2 | See Section A.2.1.   | See CAR1                            | <input checked="" type="checkbox"/> |
| <b>A.3. Project participants</b>   |  |        |  |                                     |                                     |
| A.3.1.   | Is the form required for the indication of project participants correctly applied?   | 2      | Yes. The form is correctly applied.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.3.2.   | Is the participation of the listed entities or Parties confirmed by each one of them?  | 1<br>2 | Yes. The voluntary participation of all listed entities or Parties is confirmed by each of them.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.3.3.   | Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)? | 2      | Yes, information presented is consistent with the information presented in further chapters of the PDD.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>A.4. Technical description of the project activity</b>                            |  |        |  |                                     |                                     |
| <b>A.4.1. Location of the project activity</b>                                       |  |        |  |                                     |                                     |
| A.4.1.1.   | Does the information provided on the location of the project activity allow for a clear  | 1<br>2 | Yes. Given GPS data in the PDD allow a clear identification of the site.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

## Validation Protocol

Project Title: "Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project"

Date of Completion: 13.03.2008

Number of Pages: 3



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| CHECKLIST TOPIC / QUESTION   | Ref.        | COMMENTS  | PDD in GSP                          | Final PDD                           |
|--|-------------|---|-------------------------------------|-------------------------------------|
| identification of the site(s)?   |             |   |                                     |                                     |
| A.4.1.2.<br>How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?                 | 1<br>2<br>8 | Documents have been presented to the validation team showing that Brasil Central Energia S.A. is allowed to implement the project at the given site.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>A.4.2. Category(ies) of project activity</b>  |             |   |                                     |                                     |
| A.4.2.1.<br>To which category(ies) does the project activity belong to? Is the category correctly identified and indicated?  | 2<br>12     | The project activity belongs to sectoral category 01, which is not mentioned in Section A.4.2 of the PDD.<br><b>Clarification Request No. 2</b><br>The sectoral category 01 should be mentioned in Section A.4.2. of the PDD. | CR2                                 | <input checked="" type="checkbox"/> |
| <b>A.4.3. Technology to be employed by the project activity</b>  |             |   |                                     |                                     |
| A.4.3.1.<br>Does the technical design of the project activity reflect current good practices?  | 2           | Yes. The project design engineering reflects current good practice.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.3.2.<br>Does the description of the technology to be applied provide sufficient and transparent input/ information to evaluate its impact on the greenhouse gas balance? | 1<br>2<br>4 | Yes. The description of the technology to be applied provides a sufficient and transparent input to evaluate its impact on the greenhouse gas balance.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.3.3.<br>Does the implementation of the project activity require any technology transfer from annex-I-countries to the host country(ies)?                                 |             | There is no technology transfer from Annex I countries.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.3.4.<br>Does the technology implemented by the   | 1<br>2      | Yes. All information is provided in compliance with actual situation or planning.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

## Validation Protocol

Project Title: “Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project”

Date of Completion: 13.03.2008

Number of Pages: 4



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| CHECKLIST TOPIC / QUESTION  | Ref.         | COMMENTS  | PDD in GSP                          | Final PDD                           |
|---|--------------|---|-------------------------------------|-------------------------------------|
| project activity environmentally safe?  |              |   |                                     |                                     |
| A.4.3.5.<br>Is the information provided in compliance with actual situation or planning?  |              | Yes, information provided is in compliance with actual and planning situation.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.3.6.<br>Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country? | 1<br>2<br>4  | Yes. The project uses state of the art technology.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.3.7.<br>Is the project technology likely to be substituted by other or more efficient technologies within the project period?   | 1<br>2<br>4  | No. The technology is not likely to be substituted by other or more efficient technologies within the project period.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.3.8.<br>Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?                                      | 1<br>2<br>11 | Training was realised for the employees of operation. The employees of maintenance have sufficient experience with small hydro. Training was realised by Rosch Ingeneering. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.3.9.<br>Is information available on the demand and requirements for training and maintenance?   | 1<br>2       | Yes. Regular training is envisaged. See also Section A.4.3.8.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.3.10.<br>Is a schedule available for the implementation of the project and are there any risks for delays?  | 1<br>2       | According to information of Ecoinvest the project start will be postponed to April 1 <sup>st</sup> , 2007.<br><br><b>Corrective Action Request No.2</b>                     | CAR2                                | <input checked="" type="checkbox"/> |

## Validation Protocol

Project Title: "Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project"

Date of Completion: 13.03.2008

Number of Pages: 5



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| CHECKLIST TOPIC / QUESTION   | Ref.        | COMMENTS   | PDD in GSP                          | Final PDD                           |
|--|-------------|--|-------------------------------------|-------------------------------------|
|  |             | Ecoinvest has to update the PDD with the new project start of April 1 <sup>st</sup> , 2007 and thus change the emission reduction calculation. |                                     |                                     |
| <b>A.4.4. Estimated amount of emission reductions over the chosen crediting period</b>   |             |  |                                     |                                     |
| A.4.4.1. Is the form required for the indication of projected emission reductions correctly applied?   | 2           | Yes. The form required for the indication of projected emission reductions is correctly applied.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.4.2. Are the figures provided consistent with other data presented in the PDD?   |             | Yes, figures provided in this section of the PDD are consistent with information provided in further chapters of the PDD.                      | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>A.4.5. Public funding of the project activity</b>   |             |  |                                     |                                     |
| A.4.5.1. Is the information provided on public funding in compliance with the actual situation or planning as available by the project participants? | 1<br>2<br>6 | According to the information obtained by the audit team, ODA does not contribute to the financing of the project.                              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| A.4.5.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?                     | 2           | Yes, the information provided in this section of the PDD is consistent with the details presented in further chapters of the PDD.              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>B. Application of a baseline and monitoring methodology</b>   |             |  |                                     |                                     |
| <b>B.1. Title and reference of the approved baseline and monitoring methodology</b>  |             |  |                                     |                                     |
| B.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?                                 | 2           | The PDD provides clear reference to the number, version and title of the baseline and monitoring methodology.                                  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

# Validation Protocol

Project Title: “Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project”

Date of Completion: 13.03.2008

Number of Pages: 6



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| CHECKLIST TOPIC / QUESTION  | Ref.     | COMMENTS   | PDD in GSP                          | Final PDD                           |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
|---|----------|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|----------------------|-----|--------------------------------|-----|----------------------|-----|-------------------------------------|-------------------------------------|
|   |          |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| B.1.2. Is the applied version the most recent one and / or is this version still applicable?  |          | The version of the methodology used is applicable until August 13 <sup>th</sup> , 2008.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| B.2. Justification of the choice of the methodology and why it is applicable to the project activity  |          |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| B.2.1. Is the applied methodology considered the most appropriate one?  | 2<br>12  | Yes. The methodology ACM0002 is the one deemed most applicable for this project.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| Fill in the required amount of sub checklists for applicability criteria as given by the methodology applied and comment at least every line answered with “No” |          |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| B.2.2. Criterion 1:<br>Type of capacity addition by renewable energy  |          | <table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist             | Yes / No                            | Criterion discussed in the PDD?     | Yes                                 | Compliance provable? | Yes | Evidences provided in the PDD? | Yes | Compliance verified? | Yes | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Applicability checklist   | Yes / No |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| Criterion discussed in the PDD?   | Yes      |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| Compliance provable?  | Yes      |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| Evidences provided in the PDD?  | Yes      |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| Compliance verified?  | Yes      |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| B.2.3. Criterion 2:<br>Exclusion of fuel switching activities   |          | <table><tr><td>Applicability checklist</td><td>Yes / No</td></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Evidences provided in the PDD?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table> | Applicability checklist             | Yes / No                            | Criterion discussed in the PDD?     | Yes                                 | Compliance provable? | Yes | Evidences provided in the PDD? | Yes | Compliance verified? | Yes | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Applicability checklist   | Yes / No |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| Criterion discussed in the PDD?   | Yes      |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| Compliance provable?  | Yes      |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| Evidences provided in the PDD?  | Yes      |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| Compliance verified?  | Yes      |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |
| B.2.4. Criterion 3:<br>Defined electricity grid boundaries  |          | <table><tr><td>Applicability checklist</td><td>Yes / No</td></tr></table>  | Applicability checklist             | Yes / No                            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                      |     |                                |     |                      |     |                                     |                                     |
| Applicability checklist   | Yes / No |  |                                     |                                     |                                     |                                     |                      |     |                                |     |                      |     |                                     |                                     |

## Validation Protocol

Project Title: "Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project"

Date of Completion: 13.03.2008

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| CHECKLIST TOPIC / QUESTION  | Ref.     | COMMENTS   |     | PDD in GSP         | Final PDD |  |    |                                  |    |   |    |                                   |    |   |   |
|---|----------|--|-----|--------------------|-----------|--|----|----------------------------------|----|---|----|-----------------------------------|----|---|---|
|   |          | Criterion discussed in the PDD?  | Yes |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
|   |          | Compliance provable?   | Yes |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
|   |          | Evidences provided in the PDD?   | Yes |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
|   |          | Compliance verified?   | Yes |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| B.2.5. Criterion 4:<br>Approved inclusion in other methodologies (if applied only)  |          | Not applicable.  |     | ☑                  | ☑         |  |    |                                  |    |   |    |                                   |    |   |   |
| B.3. Description of the sources and gases included in the project boundary  |          |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| Integrate the required amount of sub-checklists for sources and gases as given by the methodology applied and comment on at least every line answered with “No”       |          |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| B.3.1. Source:<br>Fugitive Emissions from non-condensable gases (geothermal activities only)<br>Gas(es): CO <sub>2</sub> , CH <sub>4</sub><br>Type: Project Emissions |          | <table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed by the PDD?</td><td>No</td></tr><tr><td>Inclusion / exclusion justified?</td><td>No</td></tr><tr><td>Explanation / Justification sufficient?</td><td>No</td></tr><tr><td>Consistency with monitoring plan?</td><td>No</td></tr></table> The project does not include geothermal activities. |     | Boundary checklist | Yes / No  | Source and gas(es) discussed by the PDD? | No | Inclusion / exclusion justified? | No | Explanation / Justification sufficient? | No | Consistency with monitoring plan? | No | ☑ | ☑ |
| Boundary checklist  | Yes / No |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| Source and gas(es) discussed by the PDD?  | No       |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| Inclusion / exclusion justified?  | No       |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| Explanation / Justification sufficient?   | No       |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| Consistency with monitoring plan?   | No       |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| B.3.2. Source:<br>Emissions from combustion of fossil fuels (geothermal activities only)<br>Gas(es): CO <sub>2</sub><br>Type: Project Emissions                       |          | <table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Source and gas(es) discussed by the PDD?</td><td>No</td></tr><tr><td>Inclusion / exclusion justified?</td><td>No</td></tr><tr><td>Explanation / Justification sufficient?</td><td>No</td></tr><tr><td>Consistency with monitoring plan?</td><td>No</td></tr></table> The project does not include geothermal activities. |     | Boundary checklist | Yes / No  | Source and gas(es) discussed by the PDD? | No | Inclusion / exclusion justified? | No | Explanation / Justification sufficient? | No | Consistency with monitoring plan? | No | ☑ | ☑ |
| Boundary checklist  | Yes / No |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| Source and gas(es) discussed by the PDD?  | No       |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| Inclusion / exclusion justified?  | No       |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| Explanation / Justification sufficient?   | No       |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| Consistency with monitoring plan?   | No       |  |     |                    |           |  |    |                                  |    |   |    |                                   |    |   |   |
| B.3.3. Source:  |          |  |     | ☑                  | ☑         |  |    |                                  |    |   |    |                                   |    |   |   |

# Validation Protocol

Project Title: "Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project"

Date of Completion: 13.03.2008

Number of Pages: 8



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| CHECKLIST TOPIC / QUESTION  | Ref. | COMMENTS  |          | PDD in GSP                          | Final PDD                           |
|---|------|---|----------|-------------------------------------|-------------------------------------|
| Emissions from the reservoir (new hydroelectric activities only)<br>Gas(es): CO <sub>2</sub> , CH <sub>4</sub><br>Type: Project Emissions   |      | Boundary checklist  | Yes / No |                                     |                                     |
|   |      | Source and gas(es) discussed by the PDD?                                    | No       |                                     |                                     |
|   |      | Inclusion / exclusion justified?  | No       |                                     |                                     |
|   |      | Explanation / Justification sufficient?                                     | No       |                                     |                                     |
|   |      | Consistency with monitoring plan?   | No       |                                     |                                     |
|   |      | The project does not include a reservoir.                                   |          |                                     |                                     |
| B.3.4. Source:<br>Emissions from electricity generation in fossil fuel fired power plants of the project electricity system<br>Gas(es): CO <sub>2</sub><br>Type: Baseline Emissions   |      | Boundary checklist  | Yes / No | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|   |      | Source and gas(es) discussed by the PDD?                                    | No       |                                     |                                     |
|   |      | Inclusion / exclusion justified?  | No       |                                     |                                     |
|   |      | Explanation / Justification sufficient?                                     | No       |                                     |                                     |
|   |      | Consistency with monitoring plan?   | No       |                                     |                                     |
|   |      | No fossil fuel power plants are included in the project electricity system. |          |                                     |                                     |
| B.3.5. Source:<br>Emissions from electricity generation in fossil fuel fired power plants of any connected electricity system<br>Gas(es): CO <sub>2</sub><br>Type: Baseline Emissions |      | Boundary checklist  | Yes / No | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|   |      | Source and gas(es) discussed by the PDD?                                    | Yes      |                                     |                                     |
|   |      | Inclusion / exclusion justified?  | Yes      |                                     |                                     |
|   |      | Explanation / Justification sufficient?                                     | Yes      |                                     |                                     |
|   |      | Consistency with monitoring plan?   | Yes      |                                     |                                     |
| B.3.6. Source:<br>Emissions from electricity generation in fossil fuel fired power plants of imported electricity (project electricity consumption)<br>Gas(es): CO <sub>2</sub>       |      | Boundary checklist  | Yes / No | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|   |      | Source and gas(es) discussed by the PDD?                                    | Yes      |                                     |                                     |
|   |      | Inclusion / exclusion justified?  | Yes      |                                     |                                     |
|   |      | Explanation / Justification sufficient?                                     | Yes      |                                     |                                     |
|   |      | Consistency with monitoring plan?   | NA       |                                     |                                     |

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|--|------|---|-------------------------------------|-------------------------------------|
| B.3.7. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by the PDD?   |      | No Applicable.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario</b>   |      |   |                                     |                                     |
| B.4.1. Is it clearly described that the baseline is represented by the combined margin of the grid the activity will be connected to?  |      | <p>In the provided PDD is not mentioned the relevant grid, named South-Southeast-Midwest grid.</p> <p><b><u>Clarification Request No. 3</u></b></p> <p>The relevant grid, namely South-Southeast-Midwest grid should be mentioned and described as spatial boundary in Chapter B.3 as well as the spatial boundary for project activity emissions (emissions from reservoir).</p> | CR3                                 | <input checked="" type="checkbox"/> |
| B.4.2. In case of any modification or retrofit of existing facilities:<br>Is data available to determine the historic production level?  |      | No modification or retrofit of existing facilities is involved in the project.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.4.3. In case of any modification or retrofit of existing facilities:<br>Have conservative assumptions been applied in order to estimate the point in time when the existing equipment needs to be replaced?                        |      | See comment above.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered CDM project activity (assessment and demonstration of additionality):</b> |      |   |                                     |                                     |
| B.5.1. Is evidence provided, that CDM has been   |      |   |                                     |                                     |

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|---|------|--|-------------------------------------|-------------------------------------|
| considered seriously in the decision to proceed with the project activity (CDM decision before project start)?  |      |  |                                     |                                     |
| B.5.2. Have realistic and credible alternatives been identified providing comparable outputs or services? (step 1a)   |      | Yes, alternatives have been identified.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.3. Is the project activity without CDM included in these alternatives? (step 1a)  |      | Yes, it is considered the alternative of the project activity without CDM.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.4. Is a discussion provided for all identified alternatives concerning the compliance with applicable laws and regulations? (step 1b)   |      | Yes, compliance with applicable laws and regulations is discussed in the PDD.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.5. In case the PDD argues that specific laws are not enforced in the country or region: Is evidence available concerning that statement? (step 1b)                              |      | The item is not applicable as it is not mentioned in the PDD that specific laws are not enforced in the country or region. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.6. In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?                                       |      | Step 2 has not been applied.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.7. In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than CDM income?  |      | Not applicable.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.8. In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)? |      | Not applicable.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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|--|------|--|-------------------------------------|-------------------------------------|
| B.5.9. In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?             |      | Not applicable.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.10. In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?                 |      | Not applicable.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.11. In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?                             |      | Not applicable.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.12. In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?          |      | Yes, a complete list of barriers is presented.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.13. In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?                          |      | Yes, is well explained the existence and significance of the barriers.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.14. In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alternatives is not prevented by the identified barriers? |      | Yes, it is discussed that the execution of at least one of the alternatives is not prevented by the identified barriers. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.15. Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)?     |      | See section B.5.16..   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.5.16. If similar activities are occurring: Is it demonstrated that in spite of these simi-   |      | The PDD presents a clear demonstration that the project would not be implemented without the CDM component.              | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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| CHECKLIST TOPIC / QUESTION  | Ref. | COMMENTS   | PDD in GSP                          | Final PDD                           |
|---|------|--|-------------------------------------|-------------------------------------|
| larities the project activity would not be implemented without the CDM component (step 4b)?   |      |  |                                     |                                     |
| B.5.17. Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers?             |      | Explanation on how the approval of the project would help overcome the identified barriers is presented in the PDD.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>B.6. Emissions reductions</b>  |      |  |                                     |                                     |
| <i>B.6.1. Explanation of methodological choices</i>   |      |  |                                     |                                     |
| B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?   |      | It is explained how the procedures provided by the methodology are applied by the proposed project activity.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?                      |      | Yes, every selection is transparently justified.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.1.3. Are the formulae required for the determination of project emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored? |      | <p>According the methodology, "For most renewable energy project activities, <math>PE_y = 0</math>. However, for following categories of projects, project emissions needs to be estimated". The categories are:</p> <ul style="list-style-type: none"> <li>• Geothermal project activities,</li> <li>• New Hydro electric power projects with reservoirs</li> </ul> <p>Thus, considering that the project is a run-of-river dam, no project emissions are estimated for the project activities.</p> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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|---|------|---|-------------------------------------|-------------------------------------|
| B.6.1.4.<br>re the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?      |      | Yes, the formulae required for determining baseline emissions are correctly presented.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.1.5.<br>s the choice of options to determine the emissions factor (OM, BM) justified in a suitable and transparent manner?  |      | Yes, justification of choice of options is correctly presented in section B.6.3 of the provided PDD version 10.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.1.6.<br>n case of alternative weighing factors for the Combined Margin: Is the quantification of the alternative weighing factor justified in a suitable and transparent manner?      |      | No alternative weighing factors has been used.  |                                     |                                     |
| B.6.1.7.<br>n case of alternative weighing factors for the Combined Margin: Is the guidance for the PDD concerning the acceptability of alternative weights considered in the discussion? |      | No alternative weighing factors has been used.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.1.8.<br>re the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?       |      | No leakage calculation is required by the methodology while “the main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction, fuel handling (extraction, processing, and transport), and land inundation (for hydroelectric projects – see applicability conditions above)”. Thus, no leakage emissions have been considered. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.1.9.  |      | All formulae required for the determination of emission reductions  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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| CHECKLIST TOPIC / QUESTION  | Ref.     | COMMENTS   | PDD in GSP     | Final PDD |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
|---|----------|--|----------------|-----------|---------------------------------|-----|--------------------------------|----|---------------------------------------|----|----------------------------|----|-------------------------|----|-------------------------------|----|-------------------------------------|----|---|----|---|---|
| re formulae required for the determination of emission reductions correctly presented?  |          | are correctly presented.   |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| B.6.2. Data and parameters that are available at validation   |          |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| B.6.2.1. s the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?  |          | The list of parameters presented in Section B.6.2 of the PDD is considered to be complete.   | ☑              | ☑         |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| B.6.2.2. s the choice of ex-ante or ex-post vintage of OM and BM factors clearly specified in the PDD?  |          | Yes, the choice of ex-ante has been established in the PDD.  | ☑              | ☑         |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Fill in the required amount of sub checklists for monitoring parameter and comment any line answered with “No”                                      |          |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| B.6.2.3. arameter Title:<br>Annual electricity supplied to the grid prior to retrofit<br>(applicable only for retrofit and modification activities) |          | <table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>No</td></tr><tr><td>Data unit correctly expressed?</td><td>No</td></tr><tr><td>Appropriate description of parameter?</td><td>No</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided?</td><td>No</td></tr><tr><td>Has this value been verified?</td><td>No</td></tr><tr><td>Choice of data correctly justified?</td><td>No</td></tr><tr><td>Measurement method correctly described?</td><td>No</td></tr></table> <p>This item does not apply as this is not a retrofit or modification project activity.</p> | Data Checklist | Yes / No  | Title in line with methodology? | No  | Data unit correctly expressed? | No | Appropriate description of parameter? | No | Source clearly referenced? | No | Correct value provided? | No | Has this value been verified? | No | Choice of data correctly justified? | No | Measurement method correctly described? | No | ☑ | ☑ |
| Data Checklist  | Yes / No |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Title in line with methodology?   | No       |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Data unit correctly expressed?  | No       |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Appropriate description of parameter?   | No       |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Source clearly referenced?  | No       |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Correct value provided?   | No       |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Has this value been verified?   | No       |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Choice of data correctly justified?   | No       |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Measurement method correctly described?   | No       |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| B.6.2.4. arameter Title:<br>Emission factor of the grid (EF <sub>CM</sub> in  |          | <table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr></table>  | Data Checklist | Yes / No  | Title in line with methodology? | Yes | ☑                              | ☑  |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Data Checklist  | Yes / No |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |
| Title in line with methodology?   | Yes      |  |                |           |                                 |     |                                |    |                                       |    |                            |    |                         |    |                               |    |                                     |    |   |    |   |   |

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|---|----------|--|--|--------------------------------|-----------|---------------------------------------|-----|--------------------------------|-----|---------------------------------------|-----|-------------------------------|-----|-------------------------------------|-----|---|-----|-------------------------------------|-----|---|-----|-------------------------------------|-------------------------------------|
| tCO <sub>2</sub> /MWh)  |          | <table><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>   |  | Data unit correctly expressed? | Yes       | Appropriate description of parameter? | Yes | Source clearly referenced?     | Yes | Correct value provided?               | Yes | Has this value been verified? | Yes | Choice of data correctly justified? | Yes | Measurement method correctly described? | Yes |                                     |     |   |     |                                     |                                     |
| Data unit correctly expressed?  | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Appropriate description of parameter?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Source clearly referenced?  | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Correct value provided?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Has this value been verified?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Choice of data correctly justified?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Measurement method correctly described?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| B.6.2.5.<br>Parameter Title:<br>Operating margin (EF <sub>OM</sub> in tCO <sub>2</sub> /MWh)<br>emission factor of the grid |          | <table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table>              |  | Data Checklist                 | Yes / No  | Title in line with methodology?       | Yes | Data unit correctly expressed? | Yes | Appropriate description?              | Yes | Source clearly referenced?    | Yes | Correct value provided?             | Yes | Has this value been verified?           | Yes | Choice of data correctly justified? | Yes | Measurement method correctly described? | Yes | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Data Checklist  | Yes / No |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Title in line with methodology?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Data unit correctly expressed?  | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Appropriate description?  | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Source clearly referenced?  | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Correct value provided?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Has this value been verified?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Choice of data correctly justified?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Measurement method correctly described?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| B.6.2.6.<br>Parameter Title:<br>Build margin (EF <sub>BM</sub> intCO <sub>2</sub> /MWh) emission<br>factor of the grid      |          | <table><tr><td>Data Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> |  | Data Checklist                 | Yes / No  | Title in line with methodology?       | Yes | Data unit correctly expressed? | Yes | Appropriate description of parameter? | Yes | Source clearly referenced?    | Yes | Correct value provided?             | Yes | Has this value been verified?           | Yes | Choice of data correctly justified? | Yes | Measurement method correctly described? | Yes | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Data Checklist  | Yes / No |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Title in line with methodology?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Data unit correctly expressed?  | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Appropriate description of parameter?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Source clearly referenced?  | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Correct value provided?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Has this value been verified?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Choice of data correctly justified?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |
| Measurement method correctly described?   | Yes      |  |  |                                |           |                                       |     |                                |     |                                       |     |                               |     |                                     |     |   |     |                                     |     |   |     |                                     |                                     |

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| CHECKLIST TOPIC / QUESTION  | Ref.     | COMMENTS   | PDD in GSP     | Final PDD |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
|---|----------|--|----------------|-----------|---------------------------------|-----|--------------------------------|-----|---------------------------------------|-----|----------------------------|-----|-------------------------|-----|-------------------------------|-----|-------------------------------------|-----|---|-----|---|---|
|   |          |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| B.6.2.7.<br>Parameter Title:<br>fuel consumption of each power source<br>(F, mass or volume unit)   |          | <table border="1"> <thead> <tr> <th>Data Checklist</th> <th>Yes / No</th> </tr> </thead> <tbody> <tr> <td>Title in line with methodology?</td> <td>Yes</td> </tr> <tr> <td>Data unit correctly expressed?</td> <td>Yes</td> </tr> <tr> <td>Appropriate description of parameter?</td> <td>Yes</td> </tr> <tr> <td>Source clearly referenced?</td> <td>No</td> </tr> <tr> <td>Correct value provided?</td> <td>Yes</td> </tr> <tr> <td>Has this value been verified?</td> <td>Yes</td> </tr> <tr> <td>Choice of data correctly justified?</td> <td>Yes</td> </tr> <tr> <td>Measurement method correctly described?</td> <td>Yes</td> </tr> </tbody> </table> <p>Further reference for the value provided in parameter “fuel consumption of each power source is presented in Annex 5 Bibliography present in the PDD.</p> | Data Checklist | Yes / No  | Title in line with methodology? | Yes | Data unit correctly expressed? | Yes | Appropriate description of parameter? | Yes | Source clearly referenced? | No  | Correct value provided? | Yes | Has this value been verified? | Yes | Choice of data correctly justified? | Yes | Measurement method correctly described? | Yes | ☑ | ☑ |
| Data Checklist  | Yes / No |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Title in line with methodology?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Data unit correctly expressed?  | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Appropriate description of parameter?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Source clearly referenced?  | No       |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Correct value provided?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Has this value been verified?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Choice of data correctly justified?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Measurement method correctly described?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| B.6.2.8.<br>Parameter Title:<br>emission coefficient of each fuel (COEF of<br>grid, in tCO <sub>2</sub> / mass or volume unit of the<br>fuel) |          | <table border="1"> <thead> <tr> <th>Data Checklist</th> <th>Yes / No</th> </tr> </thead> <tbody> <tr> <td>Title in line with methodology?</td> <td>Yes</td> </tr> <tr> <td>Data unit correctly expressed?</td> <td>Yes</td> </tr> <tr> <td>Appropriate description of parameter?</td> <td>Yes</td> </tr> <tr> <td>Source clearly referenced?</td> <td>Yes</td> </tr> <tr> <td>Correct value provided?</td> <td>Yes</td> </tr> <tr> <td>Has this value been verified?</td> <td>Yes</td> </tr> <tr> <td>Choice of data correctly justified?</td> <td>Yes</td> </tr> <tr> <td>Measurement method correctly described?</td> <td>Yes</td> </tr> </tbody> </table> <p>Further references for the data used in parameter “emission coefficient of each fuel” is presented in Annex 5 Bibliography present in the PDD.</p>       | Data Checklist | Yes / No  | Title in line with methodology? | Yes | Data unit correctly expressed? | Yes | Appropriate description of parameter? | Yes | Source clearly referenced? | Yes | Correct value provided? | Yes | Has this value been verified? | Yes | Choice of data correctly justified? | Yes | Measurement method correctly described? | Yes | ☑ | ☑ |
| Data Checklist  | Yes / No |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Title in line with methodology?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Data unit correctly expressed?  | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Appropriate description of parameter?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Source clearly referenced?  | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Correct value provided?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Has this value been verified?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Choice of data correctly justified?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |
| Measurement method correctly described?   | Yes      |  |                |           |                                 |     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |   |   |

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| CHECKLIST TOPIC / QUESTION  | Ref.     | COMMENTS   | PDD in GSP     | Final PDD |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
|---|----------|--|----------------|-----------|-------------------------------------|-------------------------------------|--------------------------------|-----|---------------------------------------|-----|----------------------------|-----|-------------------------|-----|-------------------------------|-----|-------------------------------------|-----|---|-----|-------------------------------------|-------------------------------------|
| B.6.2.9.<br>Parameter Title:<br>electricity generation of each power source (GEN in MWh)                      |          | <table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>No</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table> <p>Include further references for the data used for the parameter “electricity generation of each power source” is presented in Annex 5 Bibliography present in the PDD.</p> | Data Checklist | Yes / No  | Title in line with methodology?     | Yes                                 | Data unit correctly expressed? | Yes | Appropriate description of parameter? | Yes | Source clearly referenced? | No  | Correct value provided? | Yes | Has this value been verified? | Yes | Choice of data correctly justified? | Yes | Measurement method correctly described? | Yes | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Data Checklist  | Yes / No |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Title in line with methodology?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Data unit correctly expressed?  | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Appropriate description of parameter?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Source clearly referenced?  | No       |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Correct value provided?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Has this value been verified?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Choice of data correctly justified?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Measurement method correctly described?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| B.6.2.10.<br>Parameter Title:<br>surface area of full reservoir level (for new hydroelectric activities only) |          | <table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>NA</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>NA</td></tr></table> <p>This parameter should not be considered as the project activity is a run-of-river hydropower plant and no reservoir is expected.</p>                                       | Data Checklist | Yes / No  | Title in line with methodology?     | Yes                                 | Data unit correctly expressed? | Yes | Appropriate description of parameter? | NA  | Source clearly referenced? | Yes | Correct value provided? | Yes | Has this value been verified? | Yes | Choice of data correctly justified? | Yes | Measurement method correctly described? | NA  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Data Checklist  | Yes / No |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Title in line with methodology?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Data unit correctly expressed?  | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Appropriate description of parameter?   | NA       |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Source clearly referenced?  | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Correct value provided?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Has this value been verified?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Choice of data correctly justified?   | Yes      |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Measurement method correctly described?   | NA       |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| B.6.2.11.<br>Parameter Title:   |          | <table><tr><th>Data Checklist</th><th>Yes / No</th></tr></table>   | Data Checklist | Yes / No  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |
| Data Checklist  | Yes / No |  |                |           |                                     |                                     |                                |     |                                       |     |                            |     |                         |     |                               |     |                                     |     |   |     |                                     |                                     |

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| CHECKLIST TOPIC / QUESTION   | Ref. | COMMENTS                                |          | PDD in GSP                          | Final PDD                           |
|--|------|---|----------|-------------------------------------|-------------------------------------|
| fraction of time with low costs /must run plant at the margin<br>(for simple adjusted OM only)   |      | Title in line with methodology?         | Yes      |                                     |                                     |
|  |      | Data unit correctly expressed?          | NA       |                                     |                                     |
|  |      | Appropriate description of parameter?   | Yes      |                                     |                                     |
|  |      | Source clearly referenced?              | Yes      |                                     |                                     |
|  |      | Correct value provided?                 | Yes      |                                     |                                     |
|  |      | Has this value been verified?           | Yes      |                                     |                                     |
|  |      | Choice of data correctly justified?     | Yes      |                                     |                                     |
|  |      | Measurement method correctly described? | NA       |                                     |                                     |
| B.6.2.12.<br>Parameter Title:<br>electricity imports from connected grid to the grid (in MWh)  |      | Data Checklist                          | Yes / No | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|  |      | Title in line with methodology?         | Yes      |                                     |                                     |
|  |      | Data unit correctly expressed?          | Yes      |                                     |                                     |
|  |      | Appropriate description of parameter?   | Yes      |                                     |                                     |
|  |      | Source clearly referenced?              | Yes      |                                     |                                     |
|  |      | Correct value provided?                 | Yes      |                                     |                                     |
|  |      | Has this value been verified?           | Yes      |                                     |                                     |
|  |      | Choice of data correctly justified?     | Yes      |                                     |                                     |
|  |      | Measurement method correctly described? | Yes      |                                     |                                     |
| B.6.2.13.<br>Parameter Title:<br>CO <sub>2</sub> emission coefficient of fuels used in connected grids (COEF of connected grid, in tCO <sub>2</sub> / mass or volume unit of the fuel) |      | Data Checklist                          | Yes / No | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|  |      | Title in line with methodology?         | Yes      |                                     |                                     |
|  |      | Data unit correctly expressed?          | Yes      |                                     |                                     |
|  |      | Appropriate description of parameter?   | Yes      |                                     |                                     |
|  |      | Source clearly referenced?              | Yes      |                                     |                                     |
|  |      | Correct value provided?                 | Yes      |                                     |                                     |
|  |      | Has this value been verified?           | Yes      |                                     |                                     |
|  |      | Choice of data correctly justified?     | Yes      |                                     |                                     |

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| CHECKLIST TOPIC / QUESTION   | Ref. | COMMENTS   | PDD in GSP                          | Final PDD                           |
|--|------|--|-------------------------------------|-------------------------------------|
|  |      | Measurement method correctly described? Yes  |                                     |                                     |
| <b>B.6.3. Ex-ante calculation of emission reductions</b>   |      |  |                                     |                                     |
| B.6.3.1.<br>Is the projection based on the same procedures as used for future monitoring?  |      | Projection is based on the same procedures as used for future monitoring.                        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.3.2.<br>Are the GHG calculations documented in a complete and transparent manner?  |      | GHG calculation are documented in a transparent manner.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.3.3.<br>Is the data provided in this section consistent with data as presented in other chapters of the PDD?                             |      | Data provided in this section is consistent with data as presented in other chapters of the PDD. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>B.6.4. Summary of the ex-ante estimation of emission reductions</b>   |      |  |                                     |                                     |
| B.6.4.1.<br>Will the project result in fewer GHG emissions than the baseline scenario?   |      | The project will result in fewer GHG emissions than the baseline scenario.                       | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.4.2.<br>Is the form/table required for the indication of projected emission reductions correctly applied?                                |      | The table used for the indication of projected emission reductions is correctly applied.         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.6.4.3.<br>Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period? |      | The projection presented in the PDD is in line with the envisioned time schedule.                | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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|---|----------|--|-------------------------------------|--|---------------------------------|-----|-------------------------------------|-------------------------------------|
| B.6.4.4.<br>s the data provided in this section in consistency with data as presented in other chapters of the PDD?                                   |          | The data provided in this section of the PDD is consistent with the data presented in other chapters.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/>  |                                 |     |                                     |                                     |
| B.7. Application of the monitoring methodology and description of the monitoring plan   |          |  |                                     |  |                                 |     |                                     |                                     |
| B.7.1. Data and parameters monitored  |          |  |                                     |  |                                 |     |                                     |                                     |
| B.7.1.1.<br>s the list of parameters presented by chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology? |          | <p>It is nothing said about uncertainty levels for the parameters EF<sub>y</sub>, EG<sub>y</sub> and m<sup>2</sup>.</p> <p><b>Clarification Request No. 4</b></p> <p>Table B.7.1 of the PDD should mention the uncertainty levels for the parameters EF<sub>y</sub>, EG<sub>y</sub> and m<sup>2</sup>.</p> <p>Procedures for emergency preparedness for cases where emergencies can cause unintended emissions were not identified.</p> <p><b>Clarification Request No. 5</b></p> <p>There were no documented procedures to cover those situations. The operation, maintenance and emergency manual which is mentioned in Annex 4 (Monitoring Plan) should be provided to the validation team.</p> | CR4<br>CR5                          | <input checked="" type="checkbox"/><br><input checked="" type="checkbox"/> |                                 |     |                                     |                                     |
| Integrate the required amount of sub-checklists for monitoring parameter and comment on any line answered with “No”                                   |          |  |                                     |  |                                 |     |                                     |                                     |
| B.7.1.2.<br>arameter Title:<br>Electricity supplied to the grid (in MWh)  |          | <table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr></table>  | Monitoring Checklist                | Yes / No   | Title in line with methodology? | Yes | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Monitoring Checklist  | Yes / No |  |                                     |  |                                 |     |                                     |                                     |
| Title in line with methodology?   | Yes      |  |                                     |  |                                 |     |                                     |                                     |

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| CHECKLIST TOPIC / QUESTION  | Ref.     | COMMENTS   |                                | PDD in GSP | Final PDD                             |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
|---|----------|--|--------------------------------|------------|---------------------------------------|-----|--------------------------------|-----|--|-----|-------------------------------|-----|---|-----|---------------------------------|-----|---|-----|---------------------------------|-----|----------------------------------|-----|-----------------------------|--|-------------------------------|--|--|--|--|
|   |          | <table><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided for estimation?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr><tr><td>Correct reference to standards?</td><td>Yes</td></tr><tr><td>Indication of accuracy provided?</td><td>Yes</td></tr><tr><td>QA/QC procedures described?</td><td>Yes</td></tr><tr><td>QA/QC procedures appropriate?</td><td>Yes</td></tr></table>  | Data unit correctly expressed? | Yes        | Appropriate description of parameter? | Yes | Source clearly referenced?     | Yes | Correct value provided for estimation? | Yes | Has this value been verified? | Yes | Measurement method correctly described? | Yes | Correct reference to standards? | Yes | Indication of accuracy provided?        | Yes | QA/QC procedures described?     | Yes | QA/QC procedures appropriate?    | Yes |                             |  |                               |  |  |  |  |
| Data unit correctly expressed?  | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Appropriate description of parameter?                                       | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Source clearly referenced?  | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Correct value provided for estimation?                                      | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Has this value been verified?   | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Measurement method correctly described?                                     | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Correct reference to standards?   | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Indication of accuracy provided?  | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| QA/QC procedures described?   | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| QA/QC procedures appropriate?   | Yes      |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
|   |          | Information on this parameter is further provided in Annex 4 of the PDD.   |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| B.7.1.3.<br>Parameter Title:<br>Electricity imported from the grid (in MWh) |          | <table><tr><td>Monitoring Checklist</td><td>Yes / No</td></tr><tr><td>Title in line with methodology?</td><td></td></tr><tr><td>Data unit correctly expressed?</td><td></td></tr><tr><td>Appropriate description of parameter?</td><td></td></tr><tr><td>Source clearly referenced?</td><td></td></tr><tr><td>Correct value provided for estimation?</td><td></td></tr><tr><td>Has this value been verified?</td><td></td></tr><tr><td>Measurement method correctly described?</td><td></td></tr><tr><td>Correct reference to standards?</td><td></td></tr><tr><td>Indication of accuracy provided?</td><td></td></tr><tr><td>QA/QC procedures described?</td><td></td></tr><tr><td>QA/QC procedures appropriate?</td><td></td></tr></table> | Monitoring Checklist           | Yes / No   | Title in line with methodology?       |     | Data unit correctly expressed? |     | Appropriate description of parameter?  |     | Source clearly referenced?    |     | Correct value provided for estimation?  |     | Has this value been verified?   |     | Measurement method correctly described? |     | Correct reference to standards? |     | Indication of accuracy provided? |     | QA/QC procedures described? |  | QA/QC procedures appropriate? |  |  |  |  |
| Monitoring Checklist  | Yes / No |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Title in line with methodology?   |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Data unit correctly expressed?  |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Appropriate description of parameter?                                       |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Source clearly referenced?  |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Correct value provided for estimation?                                      |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Has this value been verified?   |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Measurement method correctly described?                                     |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Correct reference to standards?   |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| Indication of accuracy provided?  |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| QA/QC procedures described?   |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |
| QA/QC procedures appropriate?   |          |  |                                |            |                                       |     |                                |     |  |     |                               |     |   |     |                                 |     |   |     |                                 |     |                                  |     |                             |  |                               |  |  |  |  |

## Validation Protocol

Project Title: "Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project"

Date of Completion: 13.03.2008

Number of Pages: 22



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| CHECKLIST TOPIC / QUESTION  | Ref.     | COMMENTS   | PDD in GSP           | Final PDD |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
|---|----------|--|----------------------|-----------|---------------------------------|-----|--------------------------------|-----|---------------------------------------|-----|----------------------------|-----|--|-----|-------------------------------|-----|---|-----|---------------------------------|-----|----------------------------------|-----|-----------------------------|-----|-------------------------------|-----|-------------------------------------|-------------------------------------|
| B.7.1.4.<br>Parameter Title:<br>Quantity of steam produced<br>(for geothermal projects only)                    |          | <table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table> <p>This parameter is not applicable as this is not a geothermal project.</p> | Monitoring Checklist | Yes / No  | Title in line with methodology? | N/A | Data unit correctly expressed? | N/A | Appropriate description of parameter? | N/A | Source clearly referenced? | N/A | Correct value provided for estimation? | N/A | Has this value been verified? | N/A | Measurement method correctly described? | N/A | Correct reference to standards? | N/A | Indication of accuracy provided? | N/A | QA/QC procedures described? | N/A | QA/QC procedures appropriate? | N/A | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Monitoring Checklist  | Yes / No |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Title in line with methodology?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Data unit correctly expressed?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Appropriate description of parameter?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Source clearly referenced?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Correct value provided for estimation?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Has this value been verified?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Measurement method correctly described?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Correct reference to standards?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Indication of accuracy provided?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| QA/QC procedures described?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| QA/QC procedures appropriate?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| B.7.1.5.<br>Parameter Title:<br>Fraction of CO <sub>2</sub> in steam produced<br>(for geothermal projects only) |          | <table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table> <p>This parameter is not applicable as this is not a geothermal project.</p> | Monitoring Checklist | Yes / No  | Title in line with methodology? | N/A | Data unit correctly expressed? | N/A | Appropriate description of parameter? | N/A | Source clearly referenced? | N/A | Correct value provided for estimation? | N/A | Has this value been verified? | N/A | Measurement method correctly described? | N/A | Correct reference to standards? | N/A | Indication of accuracy provided? | N/A | QA/QC procedures described? | N/A | QA/QC procedures appropriate? | N/A | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Monitoring Checklist  | Yes / No |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Title in line with methodology?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Data unit correctly expressed?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Appropriate description of parameter?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Source clearly referenced?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Correct value provided for estimation?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Has this value been verified?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Measurement method correctly described?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Correct reference to standards?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Indication of accuracy provided?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| QA/QC procedures described?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| QA/QC procedures appropriate?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |

## Validation Protocol

Project Title: “Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project”

Date of Completion: 13.03.2008

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| CHECKLIST TOPIC / QUESTION  | Ref.     | COMMENTS   | PDD in GSP           | Final PDD |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
|---|----------|--|----------------------|-----------|---------------------------------|-----|--------------------------------|-----|---------------------------------------|-----|----------------------------|-----|--|-----|-------------------------------|-----|---|-----|---------------------------------|-----|----------------------------------|-----|-----------------------------|-----|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|   |          |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| B.7.1.6.<br>Parameter Title:<br>Fraction of CH <sub>4</sub> in steam produced<br>(for geothermal projects only)   |          | <table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table> <p>This parameter is not applicable as this is not a geothermal project.</p> | Monitoring Checklist | Yes / No  | Title in line with methodology? | N/A | Data unit correctly expressed? | N/A | Appropriate description of parameter? | N/A | Source clearly referenced? | N/A | Correct value provided for estimation? | N/A | Has this value been verified? | N/A | Measurement method correctly described? | N/A | Correct reference to standards? | N/A | Indication of accuracy provided? | N/A | QA/QC procedures described? | N/A | QA/QC procedures appropriate?       | N/A                                 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Monitoring Checklist  | Yes / No |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Title in line with methodology?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Data unit correctly expressed?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Appropriate description of parameter?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Source clearly referenced?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Correct value provided for estimation?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Has this value been verified?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Measurement method correctly described?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Correct reference to standards?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Indication of accuracy provided?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| QA/QC procedures described?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| QA/QC procedures appropriate?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| B.7.1.7.<br>Parameter Title:<br>Quantity of steam generated during well testing<br>(for geothermal projects only) |          | <table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr></table>   | Monitoring Checklist | Yes / No  | Title in line with methodology? | N/A | Data unit correctly expressed? | N/A | Appropriate description of parameter? | N/A | Source clearly referenced? | N/A | Correct value provided for estimation? | N/A | Has this value been verified? | N/A | Measurement method correctly described? | N/A | Correct reference to standards? | N/A | Indication of accuracy provided? | N/A | QA/QC procedures described? | N/A | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                     |                                     |
| Monitoring Checklist  | Yes / No |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Title in line with methodology?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Data unit correctly expressed?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Appropriate description of parameter?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Source clearly referenced?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Correct value provided for estimation?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Has this value been verified?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Measurement method correctly described?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Correct reference to standards?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| Indication of accuracy provided?  | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |
| QA/QC procedures described?   | N/A      |  |                      |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                                     |                                     |                                     |                                     |

# Validation Protocol

Project Title: "Brasil Central Energia S.A. – Sacre II Small Hydro Power Plant Project"

Date of Completion: 13.03.2008

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| CHECKLIST TOPIC / QUESTION   | Ref.     | COMMENTS   |  | PDD in GSP                    | Final PDD |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
|--|----------|--|--|-------------------------------|-----------|---------------------------------|-----|--------------------------------|-----|---------------------------------------|-----|----------------------------|-----|--|-----|-------------------------------|-----|---|-----|-------------------------------------|-------------------------------------|----------------------------------|-----|-----------------------------|-----|-------------------------------|-----|-------------------------------------|-------------------------------------|
|  |          | <table><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table> <p>This parameter is not applicable as this is not a geothermal project.</p>  |  | QA/QC procedures appropriate? | N/A       |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| QA/QC procedures appropriate?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| B.7.1.8.<br>Parameter Title:<br>Fraction of CO <sub>2</sub> in steam during well testing<br>(for geothermal projects only) |          | <table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table> <p>This parameter is not applicable as this is not a geothermal project.</p> |  | Monitoring Checklist          | Yes / No  | Title in line with methodology? | N/A | Data unit correctly expressed? | N/A | Appropriate description of parameter? | N/A | Source clearly referenced? | N/A | Correct value provided for estimation? | N/A | Has this value been verified? | N/A | Measurement method correctly described? | N/A | Correct reference to standards?     | N/A                                 | Indication of accuracy provided? | N/A | QA/QC procedures described? | N/A | QA/QC procedures appropriate? | N/A | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Monitoring Checklist   | Yes / No |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Title in line with methodology?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Data unit correctly expressed?   | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Appropriate description of parameter?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Source clearly referenced?   | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Correct value provided for estimation?   | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Has this value been verified?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Measurement method correctly described?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Correct reference to standards?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Indication of accuracy provided?   | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| QA/QC procedures described?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| QA/QC procedures appropriate?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| B.7.1.9.<br>Parameter Title:<br>Fraction of CH <sub>4</sub> in steam during well testing<br>(for geothermal projects only) |          | <table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr></table>   |  | Monitoring Checklist          | Yes / No  | Title in line with methodology? | N/A | Data unit correctly expressed? | N/A | Appropriate description of parameter? | N/A | Source clearly referenced? | N/A | Correct value provided for estimation? | N/A | Has this value been verified? | N/A | Measurement method correctly described? | N/A | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                  |     |                             |     |                               |     |                                     |                                     |
| Monitoring Checklist   | Yes / No |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Title in line with methodology?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Data unit correctly expressed?   | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Appropriate description of parameter?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Source clearly referenced?   | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Correct value provided for estimation?   | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Has this value been verified?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |
| Measurement method correctly described?  | N/A      |  |  |                               |           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                     |                                     |                                  |     |                             |     |                               |     |                                     |                                     |

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| CHECKLIST TOPIC / QUESTION  | Ref.     | COMMENTS   |     | PDD in GSP                          | Final PDD                           |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
|---|----------|--|-----|-------------------------------------|-------------------------------------|---------------------------------|-----|--------------------------------|-----|---------------------------------------|-----|----------------------------|-----|--|-----|-------------------------------|-----|---|-----|---------------------------------|-----|----------------------------------|-----|-----------------------------|-----|-------------------------------|-----|-------------------------------------|-------------------------------------|
|   |          | Correct reference to standards?  | N/A |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
|   |          | Indication of accuracy provided?   | N/A |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
|   |          | QA/QC procedures described?  | N/A |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
|   |          | QA/QC procedures appropriate?  | N/A |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
|   |          | This parameter is not applicable as this is not a geothermal project.  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| B.7.1.10.<br>arameter Title:<br>CO <sub>2</sub> emission coefficient of fuel used by the geothermal plant<br>(for geothermal projects only) |          | <table><tr><th>Monitoring Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>N/A</td></tr><tr><td>Data unit correctly expressed?</td><td>N/A</td></tr><tr><td>Appropriate description of parameter?</td><td>N/A</td></tr><tr><td>Source clearly referenced?</td><td>N/A</td></tr><tr><td>Correct value provided for estimation?</td><td>N/A</td></tr><tr><td>Has this value been verified?</td><td>N/A</td></tr><tr><td>Measurement method correctly described?</td><td>N/A</td></tr><tr><td>Correct reference to standards?</td><td>N/A</td></tr><tr><td>Indication of accuracy provided?</td><td>N/A</td></tr><tr><td>QA/QC procedures described?</td><td>N/A</td></tr><tr><td>QA/QC procedures appropriate?</td><td>N/A</td></tr></table> <p>This parameter is not applicable as this is not a geothermal project.</p> |     | Monitoring Checklist                | Yes / No                            | Title in line with methodology? | N/A | Data unit correctly expressed? | N/A | Appropriate description of parameter? | N/A | Source clearly referenced? | N/A | Correct value provided for estimation? | N/A | Has this value been verified? | N/A | Measurement method correctly described? | N/A | Correct reference to standards? | N/A | Indication of accuracy provided? | N/A | QA/QC procedures described? | N/A | QA/QC procedures appropriate? | N/A | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Monitoring Checklist  | Yes / No |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Title in line with methodology?   | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Data unit correctly expressed?  | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Appropriate description of parameter?   | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Source clearly referenced?  | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Correct value provided for estimation?  | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Has this value been verified?   | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Measurement method correctly described?   | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Correct reference to standards?   | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| Indication of accuracy provided?  | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| QA/QC procedures described?   | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| QA/QC procedures appropriate?   | N/A      |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| B.7.2. Description of the monitoring plan   |          |  |     |                                     |                                     |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |
| B.7.2.1.<br>Is the operational and management structure clearly described and in compliance with the envisioned situation?                  |          | The description of the Monitoring Plan is included in the Annex 4.   |     | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |                                 |     |                                |     |                                       |     |                            |     |  |     |                               |     |   |     |                                 |     |                                  |     |                             |     |                               |     |                                     |                                     |

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| CHECKLIST TOPIC / QUESTION   | Ref. | COMMENTS   | PDD in GSP                          | Final PDD                           |
|--|------|--|-------------------------------------|-------------------------------------|
| B.7.2.2.<br>re responsibilities and institutional arrangements for data collection and archiving clearly provided?   |      | See comments presented in Section B.7.2.1.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.7.2.3.<br>oes the monitoring plan provide current good monitoring practice?  |      | See comments presented in Section B.7.2.1.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.7.2.4.<br>f applicable: Does annex 4 provide useful information enabling a better understanding of the envisioned monitoring provisions?   |      | See comments presented in Section B.7.2.1.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)</b>                            |      |  |                                     |                                     |
| B.8.1. Is there any indication of a date when the baseline was determined?   |      | The date indicating the determination of the baseline is presented in this section of the PDD.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.8.2. Is this consistent with the time line of the PDD history?   |      | The date of determination of the baseline is consistent with the time line of the PDD history.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.8.3. Is the information on the person(s) / entity(ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation? |      | The information presented regarding the person and entity responsible for the application of the baseline and monitoring methodology is consistent with the actual situation of the project. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| B.8.4. Is information provided whether this person / entity is also considered a project participant?  |      | The information provided in this section of the PDD states that the entity is a project participant.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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| CHECKLIST TOPIC / QUESTION   | Ref. | COMMENTS  | PDD in GSP                          | Final PDD                           |
|--|------|---|-------------------------------------|-------------------------------------|
| <b>C. Duration of the project activity / crediting period</b>  |      |   |                                     |                                     |
| <b>C.1. Duration of the project activity</b>   |      |   |                                     |                                     |
| C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?  |      | Section C.1 of the PDD provides proper information on the start-ing date and operational lifetime of the project.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>C.2. Choice of the crediting period and related information</b>   |      |   |                                     |                                     |
| C.2.1. Is the assumed crediting time clearly de-fined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)? |      | It is clearly defined that the project participant has chosen a re-newable crediting period of seven years. The starting date of the crediting period is clearly presented as well. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>D. Environmental impacts</b>  |      |   |                                     |                                     |
| <b>D.1. Documentation on the analysis of the environmental impacts, including transboundary impacts</b>  |      |   |                                     |                                     |
| D.1.1. Has the analysis of the environmental im-pacts of the project activity been suffi-ciently described?  |      | Yes. The environmental impact is considered to be small.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| D.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been ap-proved?  |      | An Environmental Impact Assessment (EIA) was necessary in or-der to obtain the environmental licenses. For the CDM project it-self, no EIA is necessary.                            | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| D.1.3. Will the project create any adverse envi-   |      | No adverse environmental effect is expected to be created by the  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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| CHECKLIST TOPIC / QUESTION   |  | Ref. | COMMENTS  | PDD in GSP                          | Final PDD                           |
|--|--|------|---|-------------------------------------|-------------------------------------|
| ronmental effects?   |  |      | project.  |                                     |                                     |
| D.1.4.   | Were transboundary environmental impacts identified in the analysis?   |      | Yes, transboundary environmental effects are considered in the analysis.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party</b> |  |      |   |                                     |                                     |
| D.2.1.   | Have the identified environmental impacts been addressed in the project design sufficiently?   |      | No environmental impacts have been considered significant, thus this item is not applicable.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| D.2.2.   | Does the project comply with environmental legislation in the host country?  |      | See comments in Section D.2.1 in the present protocol.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>E. Stakeholders' comments</b>   |  |      |   |                                     |                                     |
| <b>E.1. Brief description how comments by local stakeholders have been invited and compiled</b>  |  |      |   |                                     |                                     |
| E.1.1.   | Have relevant stakeholders been consulted?   |      | Yes. Relevant stakeholders have been consulted.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| E.1.2.   | Have appropriate media been used to invite comments by local stakeholders?   |      | The invitations to local stakeholders were sent by postal to local stakeholders.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| E.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 |      | The Brazilian DNA gives guidance on how the local stakeholder process has to be conducted. The validation team may confirm that the process has been performed as required. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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| CHECKLIST TOPIC / QUESTION   |   | Ref. | COMMENTS   | PDD in GSP                          | Final PDD                           |
|--|---|------|--|-------------------------------------|-------------------------------------|
| with such regulations/laws?  |   |      |  |                                     |                                     |
| E.1.4.   | Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?                    |      | Yes. The undertaken stakeholder process is described in a complete and transparent manner.                               | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>E.2. Summary of the comments received</b>                             |   |      |  |                                     |                                     |
| E.2.1.   | Is a summary of the stakeholder comments received provided?   |      | No comments have been received.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>E.3. Report on how due account was taken of any comments received</b> |   |      |  |                                     |                                     |
| E.3.1.   | Has due account been taken of any stakeholder comments received?  |      | No comments have been received.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>F. Annexes 1 - 4</b>  |   |      |  |                                     |                                     |
| <b>Annex 1: Contact Information</b>                                      |   |      |  |                                     |                                     |
| F.1.1.   | Is the information provided consistent with the one given under section A.3?  |      | The information provided in this Annex of the PDD is consistent with the information provided in section A.3 of the PDD. | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| F.1.2.   | Is the information on all private participants and directly involved Parties presented?                                       |      | Information on involved parties is correctly presented in Annex 1.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>Annex 2: Information regarding public funding</b>                     |   |      |  |                                     |                                     |
| F.1.3.   | Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by |      | No public funding is involved in the project.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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| CHECKLIST TOPIC / QUESTION             |   | Ref. | COMMENTS  | PDD in GSP                          | Final PDD                           |
|--|---|------|---|-------------------------------------|-------------------------------------|
| the project participants?              |   |      |   |                                     |                                     |
| F.1.4.                                 | If necessary: Is an affirmation available that any such funding from Annex-I- countries does not result in a diversion of ODA?                      |      | This item is not applicable as the project is not a diverted ODA.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>Annex 3: Baseline information</b>   |   |      |   |                                     |                                     |
| F.1.5.                                 | If additional background information on baseline data is provided: Is this information consistent with data presented by other sections of the PDD? |      | Yes, additional information provided in this Annex is consistent with information provided in other chapters of the PDD.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| F.1.6.                                 | Is the data provided verifiable? Has sufficient evidence been provided to the validation team?  |      | Sufficient references are provided in order to verify the information presented.  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| F.1.7.                                 | Does the additional information substantiate / support statements given in other sections of the PDD?   |      | Annex 3 provides further information presented in other sections of the PDD, mainly information used for determining the emission factor.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| <b>Annex 4: Monitoring information</b> |   |      |   |                                     |                                     |
| F.1.8.                                 | If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?    |      | Information regarding the monitoring plan is provided in this annex. As previously said no information of monitoring plan is presented in section B.7.2. See Corrective Action Request No.3.<br><br>The Monitoring Plan mentions the energy distribution company Rede Comercializadora de Energía S/A as responsible party for maintenance of monitoring equipment, for dealing with possible monitoring data adjustments and uncertainties, for review of reported results/data, for internal audits of GHG project compliance with operational requirements and for corrective actions. However | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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| CHECKLIST TOPIC / QUESTION |  | Ref. | COMMENTS   | PDD in GSP                          | Final PDD                           |
|----------------------------|--|------|--|-------------------------------------|-------------------------------------|
|                            |  |      | er, how the procedures will look like, is not described in detail in the Monitoring Plan.<br><br><b><u>Clarification Request No. 6</u></b><br>Information dealing with possible monitoring data adjustments and uncertainties, for review of reported results/data, for internal audits of GHG project compliance with operational requirements and for corrective actions should be submitted to the validation team. |                                     |                                     |
| F.1.9.                     | Is the information provided verifiable? Has sufficient evidence been provided to the validation team?                              |      | The information is verifiable and sufficient information has been provided to the validation team.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| F.1.10.                    | Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD? |      | See comments in section F.1.8 of the present protocol.   | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

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**Table 2 Resolution of Corrective Action and Clarification Requests**

| Clarifications and corrective action requests by validation team  | Ref. to table 1 | Summary of project owner response  | Validation team conclusion   |
|---|-----------------|--|--|
| <b>Corrective Action Request No.1</b><br>Page 3 (line 3), page 4 (line 6), page 6 (A.4.2.), page 9 (B.3.), page 21 (Step 5), page 36 and page 38 of the PDD are mentioning Sacre II as hydro-power plant with reservoir. Ecoinvest should correct the type of power plant to run-of-river as it has been identified on-site by the validation team. | A.2.1           | Information has been amended in the PDD (version 2).   | Issue is considered to be resolved.<br><input checked="" type="checkbox"/> |
| <b>Clarification Request No. 1</b><br>The description of the project activity should include the emission projection, i.e. how many tones CO2 the project will reduce.  | A.2.3           | The project activity tonnes of CO2 results are presented in A.4.4. Estimated amount of emission reductions over the chosen crediting period. | Issue is considered to be resolved.<br><input checked="" type="checkbox"/> |
| <b>Clarification Request No. 2</b><br>The sectoral category 01 should be mentioned in Section A.4.2. of the PDD.  | A.4.2.1         | Information has been updated in the PDD (version 3).   | Issue is considered to be resolved.<br><input checked="" type="checkbox"/> |

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|  |          |  |   |
|--|----------|--|---|
| <b><u>Corrective Action Request No.2</u></b><br>Ecoinvest has to update the PDD with the new project start of April 1 <sup>st</sup> , 2007 and thus change the emission reduction calculation.   | A.4.3.10 | Information has been updated in the PDD.<br>The new project start is determined for September 14, 2006 in the updated PDD, version 3. However, the emission reduction calculation in Table 2 and Table 9 has not been adapted to the new situation.  | The start of crediting period and listed emission reduction is now in PDD version 8 consistent.<br><input checked="" type="checkbox"/>  |
| <b>Clarification Request No. 3</b><br>The relevant grid, namely South-Southeast-Midwest grid should be mentioned and described as spatial boundary in Chapter B.3 as well as the spatial boundary for project activity emissions (emissions from reservoir). | B.4.1    | Information has been updated in the PDD (version 3).   | Issue is considered to be resolved.<br><input checked="" type="checkbox"/>  |
| <b>Clarification Request No. 4</b><br>Table B.7.1 of the PDD should mention the uncertainty levels for the parameters $EF_y$ , $EG_y$ and $m^2$ .  | B.7.1.1  | Information regarding uncertainty level of the variables was included in the new version of the PDD (version 3).   | Issue is considered to be resolved.<br><input checked="" type="checkbox"/>  |
| <b>Clarification Request No. 5</b><br>There were no documented procedures to cover those situations. The operation, maintenance and emergency manual which is mentioned in Annex 4 (Monitoring Plan) should be provided to the validation team.              | B.7.1.1  | Annex 4 (Monitoring Plan) has been changed. The operation maintenance and emergency manual is not mentioned anymore.<br>Contract between Rede Comercializadora de Energia S/A that will be responsible for the operation and maintenance of Sacre 2 SHP and Sacre 2 has been submitted to the validation team. | Issue is considered to be resolved, as a document with some monitoring information were submitted to the validation team showing procedures and operation of monitoring and some risks and their mitigation and control.<br><input checked="" type="checkbox"/> |

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|  |       |  |  |
|--|-------|--|--|
| <b>Clarification Request No. 6</b><br>Information dealing with possible monitoring data adjustments and uncertainties, for review of reported results/data, for internal audits of GHG project compliance with operational requirements and for corrective actions should be submitted to the validation team. | F.1.8 | All the information regards to possible monitoring data adjustments and uncertainties, related to GHG Project, are in compliance with all operational requirements and they were submitted to the validation team. | The information submitted to the validation team is sufficient for validation purposes. Issue is considered to be resolved.<br><input checked="" type="checkbox"/> |
|--|-------|--|--|

Document: Validation Report Sacre .doc


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## **Annex 2: Information Reference List**



|              |            |  |                |  |
|--------------|------------|--|----------------|--|
| Final Report | 13.03.2007 | Validation of the “Brasil Central Energia S.A.-Sacre II Small Hydro Power Plant Project”<br>Information Reference List | Page<br>2 of 2 | <br>Industrie Service |
|--------------|------------|--|----------------|--|

| Reference No. | Document or Type of Information  |
|---------------|--|
|               | 2006)  |
| 13            | ACM0002 “Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources (Version 6, May 19 <sup>th</sup> , 2006). |
| 14            | IPCC: Revised 1996 Guidelines for National Greenhouse Gas Inventories  |
| 15            | IPCC: 2000, Good Practice Guidance   |
| 16            | UNFCCC, CDM: Tool for the demonstration and assessment of additionality. UNFCCC.   |
| 17            | Validation and Verification Manual, IETA/World Bank (PCF), <a href="http://www.vvmanual.info">http://www.vvmanual.info</a>   |
| 18            | Document about calibration, CEMAT Rede, pdf-file, submitted in November 2006.  |
| 19            | Monitoring Manual, pdf-file, submitted in November 2006.   |
| 2             | Project Design Document “Brasil Central Energia S.A.-Sacre II Small Hydro Power Plant Project, version 09a”, Ecoinvest Carbon Brasil Ltda.                             |