VALIDATION REPORT

BT GERADORA DE ENERGIA ELETRICA S.A.

RENEWAL OF CREDITING PERIOD OF THE BT GERADORA DE ENERGIA ELETRICA S.A. – FERRADURA SMALL HYDRO POWER PLANT – SMALL SCALE CDM PROJECT

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BUREAU VERITAS CERTIFICATION

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VALIDATION REPORT

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Client:	**Client ref.:**
BT Geradora de Energia Elétrica S.A.	Mr. Dimas Luiz Tagliani

Summary:

Bureau Veritas Certification has performed the validation of the renewal of the crediting period of BT Geradora de Energia Elétrica S.A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project (UNFCCC Registration Number 0229), owned by BT Geradora de Energia Elétrica S.A., which is located in the municipality of Erval Seco, in the State of Rio Grande do Sul, Brazil on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline update, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

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

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology AMS-I.D version 17 and meets the relevant UNFCCC requirements for the renewal of the crediting period.

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Abbreviations

ANEEL	Brazilian National Energy Agency (from the Portuguese: Agência Nacional de Energia Elétrica)
BVC	Bureau Veritas Certification
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CM	Combined Margin
CO_2	Carbon Dioxide
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
FEPAM	Rio Grande do Sul State Environmental Agency (from the Portuguese: Fundação Estadual de Proteção Ambiental)
GHG	Green House Gas(es)
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
NEPG	Northeast Power Grid
OM	Operating Margin
PDD	Project Design Document
PP	Project Proponent
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation & Verification Manual

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1 INTRODUCTION

BT Geradora de Energia Elétrica S.A. has commissioned Bureau Veritas Certification (BVC) to validate the renewal of the crediting period for its registered CDM Project BT Geradora de Energia Elétrica S.A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project (hereafter called “the Project”) in the municipality of Erval Seco, in the State of Rio Grande do Sul, Brazil.

This report summarizes the findings of the validation of the Project, performed on the basis of UNFCCC criteria, Procedures for renewal of the crediting period of a registered CDM project activity as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The validation of renewal of crediting period serves as assessment of validity of the baseline of project that has opted for a renewal of the crediting period. The validation is an independent third party assessment of the project baseline. In particular, the project's baseline and the monitoring plan (MP) are validated in order to confirm that the project baseline, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Assessment of validation of baseline is a requirement for all CDM projects seeking renewal of the crediting period and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project’s baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Validation team

The validation team consists of the following personnel:

FUNCTION	NAME	CODE HOLDER*	TASK PERFORMED
Lead Verifier	Marcelo Porto	**X Yes ☐ No**	**X DR X SV X RI**
Verifier	Karina Polido	**☐Yes X No**	**X DR ☐SV X RI**
Verifier	Flavia Resende	**☐Yes X No**	**X DR ☐SV X RI**
Technical Specialist	N.A.	**☐Yes ☐ No**	**☐DR ☐SV ☐RI**
Financial Specialist	N.A.	**☐Yes ☐ No**	**☐DR ☐SV ☐RI**
Internal Technical Reviewer (ITR)	Antonio Daraya	**X Yes ☐ No**	**X DR ☐SV X RI**
Specialist supporting ITR	N.A.	**☐Yes ☐ No**	**☐DR ☐SV ☐RI**

*DR = Document Review; SV = Site Visit; RI = Report issuance

2 METHODOLOGY

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

In order to ensure transparency, a validation protocol was customized for the project, according to the version 01.2 of the Clean Development Mechanism Validation and Verification Manual, issued by the Executive Board at its 55th meeting on 30/07/2010. The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol is enclosed in Appendix A to this report.

2.1 Review of documents

The Project Design Document (PDD) submitted by BT Geradora de Energia Elétrica S.A. (hereafter called "the PP") and additional background documents related to the project design and baseline, i.e. Country Law, Guidelines for Completing the Project Design Document (CDM-PDD), Approved Methodology, Kyoto Protocol, Procedures for Renewal of the Crediting Period of a registered CDM Project Activity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests, BT Geradora de Energia Elétrica S.A. revised the PDD and resubmitted it on 10/08/2012.

The validation findings presented in this report relate to the project as described in the PDD version 04.1

2.2 Follow-up interviews

On 13/08/2010, BVC performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the BT Geradora de Energia Elétrica S.A. and Ecopart Assessoria em Negócios Empresariais Ltda were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview Topics

Interviewed organization	Interview topics
BT Geradora de Energia Elétrica S.A. (the PP)	↳ Status of the project and any modifications with respect to the registered PDD; ↳ Monitoring plan; ↳ Plant's operation and maintenance; ↳ Environmental licensing;
Ecopart Assessoria em Negócios Empresariais Ltda. (the Consultant)	↳ Applicability of selected methodology; ↳ National policies and changes; ↳ Baseline of the project and its updates; ↳ Project emission sources; ↳ Emission Factors and their updates; ↳ Monitoring plan.

2.3 Resolution of clarification and corrective action requests

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

Corrective Action Requests (CAR) is issued, where:

(a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;

(b) The CDM requirements have not been met;

(c) There is a risk that emission reductions cannot be monitored or calculated.

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

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

2.4 Internal technical review

The validation report underwent an Internal Technical Review (ITR) before requesting the renewal of crediting period of the project activity.

The ITR is an independent process performed to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as internal Bureau Veritas Certification procedures.

The Lead Verifier provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This will be a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.

The review encompasses all aspects related to the project which includes project design, baseline, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, closure of CARs, CLs and FARs during the validation exercise, review of sample documents.

The reviewer compiles clarification questions for the Lead Verifier and Validation Team and discusses these matters with Lead Verifier.

After the agreement of the responses on the 'Clarification Request' from the Lead Verifier as well as the PP(s) the finalized validation report is accepted for further processing such as uploading on the UNFCCC webpage.

3 VALIDATION CONCLUSIONS

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

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

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in 45 Corrective Action Requests (CARs) and 24 Clarification Requests (CLs).

The CARs and CLs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

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

3.1 Project design document (57)

The validation team hereby confirms that the PDD complies with the latest forms of the guidance documents for completion of PDD:

- Clean Development Mechanism – Project Design Document Form (CDM-SSC-PDD), version 03 **/Ref-K/**.

- Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD) and the Form for Proposed New Small Scale Methodologies (CDM-SSC-NM), version 05 **/Ref-L/.**

3.2 Changes in the project activity

As was observed by the validation team through documentation analysis and during site visit held on 13/08/2010, the project has been implemented in accordance with the descriptions provided in the webhosted PDD.

All changes that have been made to the different versions of the PDD during the validation Process, from the webhosted PDD version 2011.07.04 **/Ref-2/** to the final PDD version 04.1 **/Ref-9/**, have been supported by CARs and CLs opened by the DOE and have already been discussed in the Validation Protocol.

3.3 Project description (64)

The project activity BT Geradora de Energia Elétrica S.A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project was registered as a CDM Project on 22/04/2006 (CDM nr. 0229).

The project activity consist of a SHPP located in the Guarita River, in the city of Erval Seco, State of Rio Grande do Sul (South of Brazil) with 10.1 MW of total installed capacity and reservoir of 0.5335 km^2.

The DOE was able to validate the accuracy and completeness of the project description contained in the PDD version 04.1 with:

- Carrying out of site visit on 13/08/2010 by checking the identification plates of the equipment installed on site.
- Analysing documents: **/Ref-5/ and /Ref-8/.**

The first 7-year renewable crediting period is from 01/01/2004 to 31/12/2010. The PP is applying for a second crediting period started from 01/01/2011 to 31/12/2017.

The DOE hereby confirms that the project description in PDD version 04.1 **/Ref-9/** is accurate and complete in all respects and that there are no changes to the project activity/design or boundary as compared to the webhosted PDD.

3.4 Application of latest approved version of a baseline and monitoring methodology (76-77)

At the time of registration, project participant had used the methodology “Grid connected renewable electricity generation”, AMS-I.D version 7 /**Ref-A**/.

The revised PDD version 04.1 /**Ref-9**/ applies the latest available version of the same methodology “Grid connected renewable electricity generation”, AMS-I.D version 17 /**Ref-B**/. Therefore, it meets the condition that for renewal of the crediting period, the methodology that applied in the original CDM-PDD /**Ref-1**/ shall be used whenever

applicable (in accordance with paragraph 2(a) of the Procedure for renewal of crediting period of a registered CDM project activity, version 06.0 /**Ref-C**/).

The applicability of the methodology was re-assessed based on the knowledge of the project from the initial validation, subsequent verifications and the confirmation from the project participant.

The project activity meets each of the applicability conditions of the methodology as can be observed in Section B.2 of the new PDD version 04.1. It also meets all the other stipulations and limitations mentioned in the other sections of the methodology.

BVC hereby confirms the applicability of the methodology to the Project:

1) *This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass:*
   - *Supplying electricity to a national or a regional grid.*

The Project is a small-hydro power plant connected to the Brazilian Interconnected System (SIN) with maximum output capacity of 10.1 MW, and which will not increase beyond 15 MW. BVC was able to validate this by a site visit performed on 13/08/2010 by checking the identification plates of the equipment installed on site.

2) *This methodology is applicable to project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) Involve a capacity addition; (c) Involve a retrofit of (an) existing plant(s); or (d) Involve a replacement of (an) existing plant(s).*

The Project is a new grid-connected power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant). BVC was able to validate this information with the following documents: /**Ref-1**/, /**Ref-9** and **/Ref-8/**.

3) *Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology:*
   - *The project activity is implemented in an existing reservoir with no change in the volume of reservoir;*
   - *The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m^2;*
   - *The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m^2."*

The project results in a new reservoir and the power density of the project is greater than 4 W/m^2 (18.93 W/m^2). Detailed information of power density calculation is

presented in section B.6.1 of the new PDD. The following evidences were used to validate this applicability condition: installed capacity of 10.1 MW: /**Ref-1**/, /**Ref-9**/, /**Ref-8**/ and /**Ref-H**/. Reservoir area of 0.5335 km^2 was validated with /**Ref-4**/.

As per the requirements of AMS-I.D version 17, the continued validity of the baseline is assessed and the emissions which would result from the baseline scenario are updated at the start of the second and third crediting period.

The DOE hereby confirms that the selected baseline and monitoring methodology AMS-I.D version 17 **/Ref-17/** is previously approved by the CDM Executive Board, and is applicable to the project activity, which, complies with all the applicability conditions therein.

The DOE hereby confirms that, as a result of the implementation of the proposed CDM project activity, there are no greenhouse gas emissions occurring within the proposed CDM project activity boundary, which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

3.5 Validity of the original baseline or its update

As demonstrated in the PDD version 04.1, *"The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid"*. As per VVM paragraph 169 /**Ref-D**/ and per AMS-I.D version 17, the baseline for the Project remains the same as that in the registered (original) PDD.

With reference to version 06.0 of the "Procedure for renewal of the crediting period of a registered CDM project activity" /**Ref-C**/ and version 03.0.1 of the Methodological Tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" /**Ref-E**/, the assessment of the validity of the baseline is an assessment of the emissions, which would have resulted from that scenario. The assessment is done in steps as described below.

Step 1 - Assess the validity of the current baseline for the next crediting period

As per the requirement of the CDM Executive Board to assess the impact of new relevant national and/or sectoral policies and circumstances on the baseline following sub-steps have been used:

Step 1.1 - Assess compliance of the current baseline with relevant mandatory national and/sectoral policies

The current baseline remains the same as it was in the registered PDD. There has been no significant change in the relevant national and/ or sectoral policies since the date of earlier registered PDD till now.

However, as described in the new PDD version 04.1, the delineation of the project electricity system has changed since the Brazilian DNA (CIMGC) has published Resolution # 8 issued on 26th May, 2008 /**Ref-F**/. In this resolution, the Brazilian Interconnected Grid (a single system that covers all the five macro-geographical regions of the country: North, Northeast, South, Southeast and Midwest) is defined as the project electricity system. Therefore, the CO_2 grid emission factor calculations are not restrict to data from the South-Southeast-Midwest grid (as considered in the first crediting period), but encompasses the Brazilian Interconnected Grid (from the Portuguese Sistema Interligado Nacional – SIN). Please refer to Step 1.4 and Step 2.2 below for the calculation of the updated CO_2 grid emission factor.

No other major changes in the relevant national and/or sectoral policies were observed, therefore, the DOE confirms that the current baseline complies with all relevant mandatory national and/or sectoral policies which have come into effect after the submission of the project activity for validation and which are applicable at the time of requesting renewal of the crediting period.

Step 1.2: Assess the impact of circumstances

As per the requirement of this sub-step, it has been assessed that there were no impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline emissions.

However, as already discussed in Step 1.1 above, circumstances related to the calculation of the CO_2 emission factor have changed. Therefore, CO_2 grid emission factor calculations were reviewed for the second crediting period. Please refer also to sections B.6.1 and B.6.3 of the new PDD in its version 04.1.

Step 1.3: Assess whether the continuation of use of current baseline equipment(s) or an investment is the most likely scenario for the crediting period for which renewal is requested.

This sub-step is not applicable, as the baseline scenario is electricity provided by the grid. As described in the new PDD version 04.1, the Brazilian Interconnected System (SIN) is composed by more than 2,400 power plants, each with specific characteristics and equipments[1]. Thus this step does not apply, since the whole system will continue to supply electricity independently of the lifetime of individual equipments.

Seeing the above, it is clear that the grid equipments as a system has a longer lifetime and will exceed the next 7-year crediting period.

Step 1.4: Assessment of the validity of the data and parameters

[1] Crosschecked by the DOE by accessing the online database of the Brazilian National Agency for Electric Energy (ANEEL): http://www.aneel.gov.br/aplicacoes/capacidadebrasil/capacidadebrasil.asp (accessed on 19/07/2012).

As described in the new PDD version 04.1, the CO_2 grid emission factor that was determined only at the start of the previous crediting period is not valid anymore due to the following two changes:

(1) As already described in Step 1.1 above, the project electricity system has changed and now encompasses the entire "SIN", the Brazilian Interconnected System /**Ref-F**/.

(2) The configuration of the relevant grid has changed over the years, due to constant changes in the dispatch capacity of grid-connected power plants, the national energy demand and also due to the addition of new generation sources to the grid.

As per the requirement of AMS-I.D version 17 and as defined by Step 1.4 of the Methodological Tool "Validity of the original/current baseline and to update the baseline at the renewal of a crediting period", if any of the data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period are not valid anymore, the current baseline needs to be updated for the subsequent crediting period. Hence the emission factor needs to be updated accordingly. Please refer to sub-step 2.2 below.

Step 2 - Update the current baseline and the data and parameters

Step 2.1: Update the current baseline

As per the requirement of the sub-step, the update for baseline emissions of the second crediting period should be based on the latest approved version of the methodology applicable to the project activity.

As per AMS-I.D version 17, the baseline for the Project remains the same as that in the registered PDD as *"The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid"*.

Step 2.2: Update the data and parameters

As already described in Step 1.4 above, considering the changes on circumstances related to calculation of CO_2 grid emission factor, the baseline emissions were reviewed in this second crediting period following the latest version of the "Tool to calculate the emission factor for an electricity system" version 02.2.1 /**Ref-G**/. Following the six steps of this Tool, the new CO_2 grid emission factor has been calculated in the Sections B.6.1 and B.6.3 of the PDD version 04.1, as described below.

Step 1-Identify the relevant electricity systems

The Brazilian DNA has published the Resolution # 8 issued on May 26th, 2008 defining the Brazilian Interconnected Grid (the "SIN") as a single system that covers all the five macro-geographical regions of the country (North, Northeast, South, Southeast and Midwest). Hence, this delineation has been followed to calculate the

baseline emission factor of the grid.

BVC was able to verify this by crosschecking the above mentioned resolution online at: http://www.mct.gov.br/upd_blob/0024/24719.pdf (accessed on 19/07/2012).

Step 2-Choose whether to include off-grid power plants in the project electricity system (optional)
Option I: Only grid power plants are included in the calculation.

Step 3-Select a method to determine the operating margin (OM)
For the calculation of the OM emission factor, the Simple Adjusted OM was used in this project.

BVC was able to verify the applicability of this calculation method, checking the last five years electricity generation in the national grid. According to the "Tool to calculate the emission factor for an electricity system", the Simple OM method can only be used if low-cost/must-run resources constitute less than 50% of total grid generation in: 1) average of the five most recent years, or 2) based on long-term averages for hydroelectricity production. The PP demonstrates that this is not the case of the Brazilian National Grid, on which Hydro generation prevailed in the last five years. Grid generation data of the last five years were crosschecked by the DOE on National Electric System Operator (ONS) - Generation History. Available at:
http://www.ons.org.br/historico/geracao_energia.aspx (accessed on 19/07/2012).

Step 4-Calculate the operating margin emission factor according to the selected method
The data on electricity generation were obtained from the Electric System National Operator (ONS). The public information available is only the net energy generation from every Power Plant and the fuel type. As the fuel consumption is not available, the calculation of the CO_2 emission factor is done based in this fuel type and the Power Plant efficiency, following the Option A2 of the Tool.

The data source is deemed reasonable and BVC confirms that the calculation (/**Ref-10**/) is able to be replicated using the data and parameter provided in the PDD.

Step 5-Calculate the build margin (BM) emission factor
The PP adopted, on the first crediting period, in terms of vintage, the Option 1 of the Tool. According to this Option, for the second crediting period, the build margin emission factor should be updated based on the most recent information available on units already built at the time of submission of the request for renewal of the crediting period to the DOE.

The calculation (/**Ref-10**/) is done using the most recent information available on units already built for sample group *m* at the time of CDM-PDD submission to the DOE, *i.e.* 2010.

The sample group of power units *m* used by the PP to calculate the build margin correctly consisted of the set of power capacity additions in the electric system that comprise 20%

of the system generation (in MWh) and that have been built most recently, since this set of plants comprises the larger annual generation.

The data source are deemed reasonable and BVC confirms that the calculation is able to be replicated using the data and parameter provided in the PDD.

Step 6-Calculate the combined margin (CM) emission factor
The PP correctly adopted the method (a) Weighted average CM, provided by the Tool, following their weighted default values for the second crediting period: w_{OM} = 0.25 and w_{BM} = 0.75.

According to Sections B.6.1 and B.6.3 of the new PDD version 04.1 and based on the calculation spreadsheet provided by PP /**Ref-6**/, the new combined margin emission factor ($EF_{grid,CM,y}$) has been calculated in accordance with equation (13) of the "Tool to calculate the emission factor for an electricity system" version 02.2.1:

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times w_{OM} + EF_{grid,BM,y} \times w_{BM}$$

$EF_{grid,CM,y}$ =0.2609 × 0.25 +0.1166 × 0.75= 0.1526 tCO_2/MWh

Where:
$EF_{grid,BM,y}$ = Build margin CO_2 emission factor in year *y* (tCO_2/MWh)
$EF_{grid,OM,y}$ = Operating margin CO_2 emission factor in year *y* (tCO_2/MWh)
w_{OM} = Weighting of operating margin emissions factor (%)
w_{BM} = Weighting of build margin emissions factor (%)

1) Baseline emissions:

$$BE_y = EG_{BL,y} \, x \, EF_{CO2,grid,y}$$

$EG_{BL,y} = EG_{facility,y}$ = 46,954 MWh/year
BE_y = 46,954MWh/year x 0.1526 tCO_2/MWh
BE_y = 7,167 tCO_2/year

Where:
BE_y = Baseline Emissions in year *y* (tCO_2)
$EG_{BL,y}$ = Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year *y* (MWh)
$EF_{CO2,grid,y}$ = CO2 emission factor of the grid in year *y* (t CO2/MWh)

The Project has a total installed capacity of 10.1 MW. In the new PDD version 04.1, for estimative purposes, 46,954 MWh/year was considered as the project's expected yearly quantity of net electricity generation supplied to the grid. Calculations were

based on 5.36 MW-ave assured power and 8,760 hour of operation in the year[2]. The value of 5.36 MW assured power was calculated and defined by the Brazilian National Energy Agency (ANEEL) and can be accessed online at: http://www.aneel.gov.br/aplicacoes/capacidadebrasil/energiaassegurada.asp (accessed on 19/07/2012).[3]

2) Project Emissions:
As can be observed in Sections B.6.1 and B.6.3 of the PDD version 04.1, no project emission need to be considered from emissions from water reservoir ($PE_{HP,y}$), since the Power Density (PD) of the project activity is greater than 10 W/m^2. BVC was able to validate the PD value of 18.93 W/m^2, as described in the new PDD version 04.1, with an installed capacity of 10.1 MW /**Ref-1**/, /**Ref-8**/ and /**Ref-H**/ and a reservoir area of 0.5335 km^2 /**Ref-4**/.

3) Leakage:
No leakage has to be considered for the proposed project activity since none of the energy equipment used in this project was transferred from another activity.

4) Emission reductions:
As per baseline methodology AMS-I.D version 17, the emission reductions (ER_y) are calculated in accordance with equation (10) of this methodology:

$$ER_y = BE_y - PE_y - LE_y$$

ER_y = 7,167 tCO_2/year

Where:
ER_y = Emission reductions in year *y* (tCO_2/y)
BE_y = Baseline Emissions in year *y* (tCO_2/y)
PE_y = Project emissions in year *y* (tCO_2/y)
LE_y = Leakage emissions in year *y* (tCO_2/y)

[2] The Emission Reduction Calculation for the years 2012 and 2016 was done taking into consideration 366 days (8784 hours a year).

[3] During the 4th periodic verification, according to paragraph 2 of Annex 66 from EB 48, the DOE has determined that the actual operation of the Project did not conform with the description contained in the registered PDD version 2005.07.27B, of 05/12/2005 /**Ref-01**/. Seeing that the changes did not raise concerns with respect to aspects outlined in paragraph 10 (c) of the same Annex 66 from EB 48 and the relevant guidelines established by the Executive Board, the DOE submitted documentation in accordance with the procedure outlined in Section C of the Annex 66 from EB 48. On 02/12/2011, the changes from the Project Description in the original PDD /**Ref-01**/ were approved by the Executive Board. In summary, the installed capacity of the SHPP was wrongly described in the original PDD as 9.2 MW, instead of the correct 10.1 MW. For a detailed description regarding how this change in the project description was validated by the DOE, please refer to the Validation Opinion on changes from the project activity as described in the registered PDD (/**Ref-H**/), also available at http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135874208.63/view .

The estimated amount of GHG emission reductions from the project is 50,209 tCO2e during the second crediting period (7 years) from 01/01/2011 to 31/12/2017, resulting in estimated average annual emission reductions of 7,173 tCO2e.

A spreadsheet for the calculation of the emission reductions was provided and checked to confirm the estimated emission reductions */*3/.

3.6 Monitoring plan (124)

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

The steps taken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design are described in the section 3.6.1, 3.6.2 and 3.6.3 below.

The Project uses the approved monitoring methodology AMS-I.D – "Grid connected renewable electricity generation", version 17. The project involves the installation of a new grid connected small hydro power plant.

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

3.6.1 Parameters determined ex-ante

The combined margin emission factor of 0.1526 tCO_2/MWh is determined ex-ante based on the most recent information available at the time of requesting for the crediting period renewal (data from 2008-2010). Please refer to 3.5 above (step 2.2) for a description how BVC was able to validate the combined margin emission factor calculations.

3.6.2 Parameters monitored ex-post

The main parameter monitored ex-post is $EG_{facility,y}$, the quantity of net electricity generation supplied by the Project to the grid in year y.

The Project has a total installed capacity of 10.1 MW, consisting of a SHPP with reservoir area of 0.5335 km^2. The electricity delivered to the grid is monitored both by the project owner (seller) as well as by the energy buyer. A Brazilian government entity CCEE - Chamber of Electric Energy Commercialization (from the Portuguese: Câmara de Comercialização de Energia Elétrica)[4] controls and monitors the electricity available on the national interconnected grid. The amount of electricity delivered to the grid by the

[4] www.ccee.org.br

project activity shall be cross-checked with the Reports issued by CCEE (records for sold electricity).

There are two meters at the Guarita Substation used for $EG_{facility,y}$ measurement. These meters are bidirectional and redundant, so that, in case the first meter fails, the second automatically replaces it. There are no transmission losses to be considered, since measurements are carried out at the output of the transmission line. In addition, the plant operator is committed to follow the procedures of calibration established by ONS (Electric System National Operator), i.e. calibration of energy meters every two years /**Ref-7**/. The company will be responsible for the maintenance of the monitoring equipment; for dealing with possible monitoring data adjustments and uncertainties; for review of reported results/data; organising and training, as appropriate, the staff in the appropriate monitoring, measurement and reporting techniques.

The data monitored and required for verification and issuance will be kept for two years after the end of the crediting period or the last issuance of CERs for this project activity, whichever occurs later.

Therefore, three parameters are measured:

- $EG_{facilityy}$: Quantity of net electricity supplied to the grid in year y, monitored by the owner and CCEE;
- Cap_{PJ}: Installed capacity of the hydro power plant after the implementation of the project activity;
- A_{PJ}: Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity.

3.6.3 Management system and quality assurance

Operational management for the Project is comprehensively detailed in PDD version 04.1, including description of the responsibility, training, equipment details, calibration frequency, maintenance needs, meters location, process description, data collection procedures, data storage procedures and emission reduction calculation procedures. These are all elements, which ensure that the monitoring plan will be followed during the operation of the Project.

4 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of renewal of the crediting period for registered CDM project BT Geradora de Energia Elétrica S.A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project (UNFCCC Registration Number 0229), located in Brazil. The validation was performed on the basis of UNFCCC criteria, procedures for renewal of the crediting period of a registered CDM project activity and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

By the construction of a small hydropower plant with an installed capacity of 10.1 MW and a reservoir area of 0.5335 km^2, renewable energy has been delivered to the Brazilian National Electricity Grid, and the project is likely to result in reductions of GHG emissions partially. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the DOE hereby confirms that the estimated amount of 50,209 tCO_2e emission reductions, during the entire 2nd crediting period, is correct.

The review of the Project Design Documentation (version 04.1) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. Baseline methodology is correctly applied to calculate project and baseline emissions, leakage and emission reductions. Also, calculation of the baseline emissions is replicable using data and values listed in the PDD. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the renewal of the crediting period and provides for appropriate baseline and its update.

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

MARCELO ANTONIAZZI PORTO

Marcelo Porto

Antonio Daraya

Team Leader	Internal Technical Reviewer
Date: 17/08/2012	Date: 17/08/2012

5 REFERENCES

Category 1 Documents:

Documents provided by BT Geradora de Energia Elétrica S.A. that relates directly to the GHG components of the project.

/1/	BT Geradora de Energia Elétrica S. A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project, Project Design Document (ORIGINAL), version 2005.07.27B of 05/12/2005.
/2/	BT Geradora de Energia Elétrica S. A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project, Project Design Document (RENEWAL), version 2011.07.04 of 04/07/2011.
/3/	BT Geradora de Energia Elétrica S. A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project, Project Design Document (RENEWAL), version 04 of 27/02/2012.
/4/	BT Geradora de Energia Elétrica S. A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project, Project Design Document (AFTER CHANGES), version 2011.07.04 of 04/07/2011.
/5/	Operation License granted by Rio Grande do Sul State Environmental Agency (FEPAM) number 3194/2009-DL.
/6/	CERs calculation spreadsheet “Ferradura_CERs_2012.02.27_v.04”, version 04.
/7/	ONS Procedure - Sub module 12.3: maintenance of measuring system for billing, revision 1.1 of 16/09/2010.
/8/	Brazilian National Energy Atlas 2009 (3rd edition), Prepared by ANEEL. Also available online at: http://www.aneel.gov.br/visualizar_texto.cfm?idtxt=1689.
/9/	BT Geradora de Energia Elétrica S. A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project, Project Design Document (RENEWAL), version 4.1 of 10/08/2012.
/10/	Excel Sheet BR EF ex ante 2008 to 2010-def EF tool 2.2-2011.10.06

Category 2 Documents:

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

/A/	Revision to the approved baseline and monitoring methodology AMS-I.D “Grid connected renewable electricity generation”, version 7.
/B/	Approved baseline and monitoring methodology AMS-I.D “Grid connected renewable electricity generation”, version 17.

/C/	Procedure for renewal of crediting period of a registered CDM project activity, version 06.0
/D/	Clean development mechanism validation and verification manual, version 01.2
/E/	Methodological Tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”, version 03.0.1
/F/	Brazilian Designated National Authority (DNA) CIMGC – Resolution # 8 of 26/05/2008, which adopts a single system as definition of a project electric system in the National Interconnected System (SIN) for purposes of CDM project activities in Brazil. Also online available at: http://www.mct.gov.br/upd_blob/0024/24833.pdf.
/G/	Tool to calculate the emission factor for an electricity system, version 02.2.1
/H/	Validation Opinion on changes from the project activity as described in the registered PDD - Report number BR.1003550, version 01, Bureau Veritas Certification, October 2011.
/I/	2010 - Brazilian Energy Balance – Ministry of Mines and Energy (MME). Also available at: https://ben.epe.gov.br/downloads/Relatorio_Final_BEN_2010.pdf.
/J/	Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories for 2006.
/K/	Clean Development Mecanism – Project Design Document Form (CDM-SSC-PDD), version 03
/L/	Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD) and the Form for Proposed New Small Scale Methodologies (CDM-SSC-NM), version 05

Persons interviewed:

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

/a/ Mariluci Duranti (BT Geradora)

/b/ Laércio Correa (BT Geradora)

/c/ Alessandro da Silva (BT Geradora)

/d/ Renata Freitas (Ecopart)

6 CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

Mr. Marcelo Porto	BVC, Brazil	Team Leader Graduated in Electrical Engineering, with a graduate specialization in Quality Engineering and a Master's degree in Industrial Engineering. Quality management expert and auditor, he worked in the electro-electronic, mechanical, medical devices, leather and shoes industries. ISO 9001 and SA8000 auditor, he is also trained as ISO 14001 and OHSAS 18001 lead auditor. Marcelo is qualified as Lead Verifier GHG – Greenhouse Gases.

Ms. Karina Polido	BVC, Brazil	Team Member Ms. Polido has graduated in Civil Engineering with experience in management system audits. She is ISO 9001:2008 and ISO 14001:2004 Lead Auditor. Karina is also qualified as Lead Verifier GHG – Greenhouse Gases.

Mrs. Flavia Resende	BVC, Brazil	Team Member Mrs. Resende has experience on CDM projects since 2002. Master's in Urban and Environmental Policy and Planning from Tufts University (Boston, MA, US) and MBA in Environmental Management by UFRJ (Rio de Janeiro, RJ, Brazil). Currently, holds a verifier position at Bureau Veritas Brazil.

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

APPENDIX A: BT GERADORA DE ENERGIA ELÉTRICA S.A. CDM PROJECT VALIDATION PROTOCOL

VALIDATION PROTOCOL

Table 1 Validation requirements based on the Clean Development Mechanism Validation and Verification Manual (Version 01.2)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
1. Approval			*COUNTRY A (Brazil)*	*COUNTRY B (United Kingdom of Great Britain and Northern Ireland, Japan)*		
a. Have all Parties involved approved the project activity?	VVM	44	The project activity (Project 0229) has already been approved. This is a revalidation process and in accordance with the PROCEDURES FOR RENEWAL OF THE CREDITING PERIOD OF A REGISTERED CDM PROJECT ACTIVITY (Version 05), EB 46 Annex 11, item C.5. – For the purpose of renewal of the crediting period, it is not necessary to obtain a new letter of approval from Parties involved.	**CL01**: Please, clarify the difference between the Parties listed in Table 1 of PDD version 1, Section A.3, and those listed in the CDM's project web page (http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135874208.63/view).	CL01	OK
b. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation,	VVM	45	Refer to item 1.a.	Refer to item 1.a.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
and specify if the letter was received from the project participatn or directly from the DNA)						
c. Does the letter of approval from DNA of each Party involved:	VVM	45				
i. confirm that the Party is a Party of the Kyoto Protocol?	VVM	45.a	Refer to item 1.a.	Refer to item 1.a.	OK	OK
ii. confirm that participation is voluntary?	VVM	45.b	Refer to item 1.a.	Refer to item 1.a.	OK	OK
iii. confirm that, in the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country?	VVM	45.c	Refer to item 1.a.	Refer to item 1.a.	OK	OK
iv. Refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	VVM	45.d	Refer to item 1.a.	Refer to item 1.a.	OK	OK
d. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	Refer to item 1.a.	Refer to item 1.a.	OK	OK
e. Has(ve) the letter(s) of approval been issued by the respective Party's designated national authority (DNA) and is valid for the CDM project activity under validation?	VVM	47	Refer to item 1.a.	Refer to item 1.a.	OK	OK
f. Is there doubt with respect to the authenticity of the letter of approval?	VVM	48	Refer to item 1.a.	Refer to item 1.a.	OK	OK
g. If yes, was verified with the DNA that the letter of approval is authentic?	VVM	48	Refer to item 1.a.	Refer to item 1.a.	OK	OK
2. Participation			*PP1 (BT Geradora de Energia Elétrica S.A.)*	*PP2, PP3 and PP4 (Ecopart Assessoria em Negócios Empresariais Ltda.; The Chugoku Electric Power Co., Inc.;*		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Constellation Energy Commodities Group Inc.)		

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	Yes, in the case of PP1.	**CL02**: Please explain the changes in the list of project participants, when comparing PDD version 1 with the registered one, version 2005.07.27B.	CL02	OK
b. Has the participation of the project participants in the project activity been approved by a Party to the Kyoto Protocol?	VVM	51	Refer to item 1.a.	Refer to item 1.a.	OK	OK
c. Are the project participants listed in tabular form in section A.3 of the PDD?	VVM	52	Yes.	Yes.	OK	OK
d. Is the information in section A.3 consistent with the contact details provided in annex 1 of the PDD?	VVM	52	Yes.	**CAR01**: PDD version 1, Annex 1, does not list information for PPs The Chugoku Electric Power Co., Inc. and Constellation Energy Commodities Group Inc.	CAR01	OK
e. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation? (Provide reference of the approval document for each of the project participants)	VVM	52	Refer to item 1.a.	Refer to item 1.a.	OK	OK
f. Are any entities other than those approved as project participants included in these sections of the PDD?	VVM	52	No.		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
g. Has the approval of participation issued from the relevant DNA?	VVM	53	Refer to item 1.a.	Refer to item 1.a.	OK	OK
h. Is there doubt with respect to (g) above? l	VVM	53	Refer to item 1.a.	Refer to item 1.a.	OK	OK
i. If yes, was verified with the DNA that the approval of participation is valid for the proposed project participant?	VVM	53	Refer to item 1.a.	Refer to item 1.a.	OK	OK
3. Project design document						
a. Is the PDD used as a basis for validation prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website?	VVM	55	Yes. The PDD used as a basis for validation was prepared in accordance with "Clean Development Mechanism Project Design Document Form", (CDM-SSC-PDD), version 03 – in effect as of 22 December 2006.		OK	OK
b. Is the PDD in accordance with the applicable CDM requirements for completing the PDD?	VVM	56	Refer to CARs 02 to 47 and CLs 03 to 24. The reference utilized for the completeness of the PDD was the Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD), version 05, of 14/09/2007.		CAR02 to CAR44 CL03 to CL24	OK
c. In CDM-SSC-PDD section A.1 are following provided?	EB 34	Ann 09				
i. Title of project	EB 34	Ann 09	Yes. BT Geradora de Energia Elétrica S.A. – Ferradura Small Hydro Power Plant – Small Scale CDM Project.		OK	OK
ii. Current version number and date of document	EB	Ann	Yes. Version 01, dated 06/07/2010.		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
	34	09			

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
d. In CDM-SSC-PDD section A.2 are following provided (max. one page)?	EB 34	Ann 09			
i. A brief description of the project activity covering purpose which includes the scenario existing prior to the start of project, present scenario and baseline	EB 34	Ann 09	Yes.	OK	OK
ii. Explanation how the GHG emission reductions are effected	EB 34	Ann 09	**CAR02**: PDD version 01, Section A.2, does not explain the technology being employed.	CAR02	OK
iii. The PP's view on the contribution of project activity to sustainable development	EB 34	Ann 09	Yes.	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	EB 34	Ann 09	N/A	OK	OK
e. In CDM-SSC-PDD section A.3 are following provided in the tabular format?	EB 34	Ann 09			
i. List of project participants and Party(ies)	EB 34	Ann 09	Refer to CL01.	CL01	OK
ii. Identification of host party	EB 34	Ann 09	Yes.	OK	OK
iii. Indication whether the Party wishes to be considered as project participant	EB 34	Ann 09	Yes.	OK	OK
f. In CDM-SSC-PDD section A.4.1 are following	EB	Ann			

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
provided?	34	09			
i. Technical description, location, host party(ies) and address as required?	EB 34	Ann 09	Location, host party and address are provided. Technical description is presented in Section A.4.2, as per the Guidelines for CDM-SSC-PDD.	OK	OK
ii. Detailed physical location with unique identification of the project activity (eg. Longitude/latitude) – not to exceed one page	EB 34	Ann 09	Yes. However, year of ANEEL's resolution needs to be corrected. **CAR03**: PDD version 01, Section A.4.1.4, mentions ANEEL's Resolution 180/2000 as being from 2008, whereas it is from 2000.	CAR03	OK
iii. Are there any changes/modifications compared to the webhosted PDD?	EB 34	Ann 09	N/A	OK	OK
g. In CDM-SSC-PDD section A.4.2 are following provided	EB 34	Ann 09			
i. the list of categories of project activities as per the latest categorization of Appendix B to the simplified modalities and procedures for small-scale CDM project activities, hereafter referred to as Appendix B. (refer http://cdm.unfccc.int/methodologies/SSCmethodologies	EB 34	Ann 09	Yes. Type I – Renewable energy projects, Category I.D. – Grid connected renewable electricity generation.	OK	OK
ii. A description of how environmentally safe and sound technology and know how is being applied by the project activity interalia technology transfer to the Host Party(ies) for	EB 34	Ann 09	The technology applied is environmentally safe and sound, based on a know how that has been used for decades in the Host Party. For this reason,	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
application in the project activity			there is no transfer of technology, as it is a well known one by the Host Party.		
h. In CDM-SSC-PDD section A.4.3 is the estimation of emission reductions provided, as requested, in a tabular format?	EB 34	Ann 09	Yes. **CAR04**: PDD version 01, Section A.4.3, presents the estimated amount of emission reductions in a tabular format with some differences compared to the Guidelines for CDM-SSC-PDD. **CL03**: Please, explain the reason why the annual estimation of emission reductions in 2012 and 2016 is 5,715 tCO_2e, instead of 5,700 tCO_2e. **CAR05**: PDD version 01, Section A.4.3, incorrectly refers to sections B.1 and B.3.	CAR04 CL03 CAR05	OK
i. In CDM-SSC-PDD section A.4.4 is information regarding Public funding provided?	EB 34	Ann 09	Yes.	OK	OK
j. In CDM-SSC-PDD section A.4.5 are the following provided?	EB 34	Ann 09			
i. Confirmation that the small-scale project activity is not a debundled component of a large scale project activity	EB 34	Ann 09	Yes.	OK	OK
ii. Indication if there is a registered small-scale project activity under the CDM or an application	EB	Ann			

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
to register another small-scale project activity under the CDM	54	13			
a. With the same project participants	EB 54	Ann 13	**CAR06**: PDD version 01, Section A.4.5, does not indicate whether there is a registered SSC project activity under the CDM or an application to register another SSC project activity under the CDM with the same project participants.	CAR06	OK
b. Registered within the period of 2 years	EB 54	Ann 13	**CAR07**: PDD version 01, Section A.4.5, does not indicate whether there is a registered SSC project activity under the CDM or an application to register another SSC project activity under the CDM registered within the previous 2 years.	CAR07	OK
c. Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity under the CDM at the closest point.	EB 54	Ann 13	Yes. **CL04**: Please, adjust last paragraph of Section A.4.5, in PDD version 01, to correctly reflect the situation regarding the last criteria for determining whether a SSC project activity is a debundled component.	CL04	OK
iii. Are there any changes/modifications compared to the webhosted PDD?	EB 34	Ann 09	N/A	OK	OK
k. In CDM-SSC-PDD section B.1 is the approved baseline and monitoring methodology and version no provided?	EB 34	Ann 09	Yes. Methodology AMS-I.D. – “Grid connected renewable electricity generation” (version 16).	OK	OK
l. In CDM-SSC-PDD section B.2 are the following provided?	EB 34	Ann 09			

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Justification of the choice of project activity and category?	EB 34	Ann 09	Yes.	OK	OK
ii. Demonstration that the project activity qualifies as a small-scale project activity and that it will remain under the limits of small-scale project activity types during every year of the crediting period as per the following:For Type I : the capacity of the proposed project activity will not exceed 15 MW (or an appropriate equivalent); For Type II: the annual energy savings on account of efficiency improvements will not exceed 60 GWh (or an appropriate equivalent) in any year of the crediting period; For Type III: the estimated emission reductions of the project activity will not exceed 60 ktCO2e in any year of the crediting period.	EB 34	Ann 09	The installed capacity of the project activity, as per registered PDD version 2005.07.27B, is 9.2 MW. PDD version 01, for renewal of the crediting period, Section A.4.2, states the same capacity, under the 15 MW limit of SSC project activities. **CAR08**: PDD version 01, Section B.2, does not demonstrate that the project activity will remain under the limit of SSC project activity Type I during every year of the crediting period.	CAR08	OK
m. In CDM-SSC-PDD section B.3 is the project boundary of the project activity, based on the guidance of the applciable project category, provided?	EB 34	Ann 09	**CL05**: Please, align project boundary definition with AMS-I.D. ver 16. **CL06**: Please, adjust second paragraph of Section B.3, in PDD version 01, as it may mislead someone to undertand that Guarita River is within the project boundary, which is not the case, as per the definition in AMS-I.D. ver 16.	CL05 CL06	OK
n. In CDM-SSC-PDD section B.4 are following provided?	EB 34	Ann 09	**CAR09**: PDD version 01, Section B.4, presents a title which is different from the Guidelines for CDM-	CAR09	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			SSC-PDD.		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. The baseline for the proposed project activity with reference to the chosen project category	EB 34	Ann 09	**CAR10**: PDD version 01, Section B.4, does not specify the baseline as stated in AMS-I.D. ver 16. Besides, currently, there is a national interconnected grid and not an isolated South-Southeast-Midwest grid anymore. Correct all parts of PDD, accordingly.	CAR10	OK
ii. Justification of key assumptions and rationales	EB 34	Ann 09	As per EB 46 Annex 11, in its Annex 1, "Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period", *If the current baseline is not in compliance with the relevant mandatory national and/or sectoral policies […], then the current baseline needs to be updated for the subsequent crediting period.* **CAR11**: PDD version 01 does not mention the operation of 332 kW generating unit, which is operating in the project activity and generating electricity to the grid. This 3rd unit is not covered by any ANEEL's authorizations. As per EB 46 Annex 11, in its Annex 1, *If any of the data and parameters that were only determined at the start of the crediting period and not monitored during the crediting period are not valid anymore, the current baseline needs to be updated for the*	CAR11 CAR12 CAR13 CL07	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			subsequent crediting period. **CAR12**: PDD version 01, Section B.4, Step 2, states there is no need to update the current baseline, whereas due to an installed capacity which is not valid anymore, compared to the registered PDD, "the current baseline needs to be updated for the subsequent crediting period", as per EB 46 Annex 11. - Previous installed capacity, as per registered PDD: 9.2 MW - Current installed capacity, as verified during site visit: 9.67 MW (= 2x 4,669 kW + 332 kW) **CL07**: Please, explain the difference between the annual averages of energy generation used for the ex-ante estimation of emissions reductions, comparing PDD version 01 (46,954 MWh/yr) and registered PDD version 2005.07.27B (46,305 MWh/yr). **CAR13**: PDD version 01, Section B.4, Figure 4, presents an "Avarege growth" with part of the information in Portuguese: values in "MW a.a.".		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Transparent illustration of all data used to determine the baseline emissions (variables, parameters, data sources etc)	EB 34	Ann 09	**CAR14**: PDD version 01, Section B.4, does not illustrate in a transparent manner all data used to determine the baseline emissions.	CAR14	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	EB 34	Ann 09	N/A	OK	OK
o. In CDM-SSC-PDD section B.5 are following provided?	EB 34	Ann 09			
i. Explanation that the proposed project activity is additional as per options provided under attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities	EB 34	Ann 09	See CAR11 and CL07.	CAR11 CL07	OK
ii. National policies and circumstances relevant to the baseline of the proposed project activity	EB 34	Ann 09	No new relevant national and/or sectoral policies and circumstances exist.	OK	OK
iii. Evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, if the starting date of the project activity is before the date of validation. (this is part of the large scale project guidelines. It is better to be retained)	EB 34	Ann 09	Not applicable for the renewal of the crediting period of an already registered project activity.	OK	OK
p. In CDM-SSC-PDD section B.6.1 are following provided?	EB 34	Ann 09			
i. Explanation on how the procedures, in the approved project category to calculate project emissions, baseline emissions, leakage	EB 34	Ann 09	**CAR15**: PDD version 01, Section B.6.1, refers to an incorrect version (number 15) of methodologies	CAR15 CAR16	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
emissions and emission reductions are applied to the proposed project activity.			ACM0002 and AMS-I.D. **CAR16**: PDD version 01, Section B.6.1, mentions "paragraph 14", whereas "19" is the correct one. **CL08**: Please, rewrite first paragraph, using expressions in accordance to AMS-I.D. ver 16. **CL09**: Please, correct the names of the steps of the "Tool to calculate the emission factor for an electricity system". Adjust Section B.6.1 accordingly. **CL10**: Please, clarify, in Section B.6.1, under "Project Emissions (PE_y)", that "Emissions from water reservoirs of hydro power plants" is one of the categories to which first paragraph refers to. **CAR17**: PDD version 01, Section B.6.1, in steps 5 and 6, under "Baseline Emissions", presents a second sentence which is not in accordance with the "Tool to calculate the emission factor for an electricity system" version 02 (see Option 1, page 15).	CAR17 CL08 CL09 CL10	

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Clearly stating of which equations will be used in calculating emission reductions.	EB 34	Ann 09	**CAR18**: PDD version 01, Section B.6.1, presents data units for BE_y, $PE_{GP,y}$, $PE_{HP,y}$, ER_y, PE_y and LE_y which are different from what is established by AMS-I.D. ver 16. **CAR19**: PDD version 01, Section B.6.1, identifies emission factors with incomplete subscripts. **CL11**: Please, use a single symbol for multiplication operations over all sections of the PDD. Currently, three different symbols are used (x, . and *). **CL12**: Please, correct description of $FE_{EL,DD,h}$.	CAR18 CAR19 CL11 CL12	OK
iii. Explanation and justification of all relevant methodological choices, including: where the category provides different options to choose from; where the category provides for different default values	EB 34	Ann 09	**CAR20**: PDD version 01, Section B.6.1, for the calculation of $EF_{CO2,grid,y}$, does not explain nor justifies the choice between options 12(a) and 12(b) of AMS-I.D. ver 16. **CAR21**: PDD version 01, Section B.6.1, does not mention that in terms of vintage data, Option 1 had been chosen for the first crediting period, which reflects in the second one, as per the "Tool to calculate the emission factor for an electricity system" version 02.	CAR20 CAR21 CL13	OK

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			CL13: Please, explain and justify why Option I was chosen, in Step 2, Section B.6.1, PDD version 01.		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
q. In CDM-SSC-PDD section B.6.2 are following provided?	EB 34	Ann 09			
i. A compilation of information on the data and parameters that are not monitored but determined upfront so as to be available for validation	EB 34	Ann 09	**CAR22**: PDD version 01, Section B.6.2, presents parameters relevant to reservoir based hydro plants not included in Table 1 of AMS-I.D. ver 16 that, for this reason, shall be monitored following ACM0002 version 11, which shows A_{PJ} and Cap_{PJ} as data/parameters to be monitored.	CAR22	OK
ii. The actual value applied	EB 34	Ann 09	**CAR23**: PDD version 01, Section B.6.2, presents a rounded number for A_{PJ} (reservoir area), whereas the exact same number, as shown in the environmental operational license LO 3194/2009-DL, shall be used in all sections of the PDD. **CL14**: Please, clarify the difference between ANEEL's and ONS' information on the SHPP installed capacity. As per ANEEL's Resolution 446/2203 (http://www.aneel.gov.br/cedoc/res2003446.pdf), it is 9,200 kW. As per ONS' records of Type 3 Power Plants (http://www.ons.org.br/download/integracao_sin/definicao_modalidade/Modalidade.zip, file "Tipo_3_Em Operação_05_Ago_2010.pdf"), 11.0 MW.	CAR23 CL14 CL15	OK

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			CL15: Please, provide the data books of the equipments of the three generating units installed at the plant.		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Explanation and justification for the choice of the source of data	EB 34	Ann 09	**CAR24**: PDD version 01, Section B.6.2, does not justify the choice of the source of data for the installed capacity.	CAR24	OK
iv. Clear and transparent references or additional documentation in Annex 3	EB 34	Ann 09	Yes.	OK	OK
v. Where values have been measured, a description of the measurement methods and procedures (e.g. which standards have been used), indicated the responsible person/entity having undertaken the measurement, the date of measurement(s) and the measurement results	EB 34	Ann 09	N/A	OK	OK
r. In CDM-SSC-PDD section B.6.3 are following provided?	EB 34	Ann 09			
i. A transparent ex ante calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology	EB 34	Ann 09	Yes.	OK	OK
ii. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation	EB 34	Ann 09	**CAR25**: PDD version 01, Section B.6.3, presents some data/parameters whose identifications are different from Section B.6.1.	CAR25 CAR26 CAR27 CAR28	OK

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			CAR26: PDD version 01, Section B.6.3, presents an incorrect power density of the plant, since its installed capacity is 9.67 MW, instead of 9.2 MW, as verified during the site visit. **CAR27**: PDD version 01, Section B.6.3, presents a sentence, under "Emission Reductions", with an expression in Portuguese. **CAR28**: PDD version 01, Section B.6.3, presents incorrect data unit for ER_y.		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Additional background information and or data in Annex 3, including relevant electronic files (i.e. spreadsheets)	EB 34	Ann 09	**CAR29**: PDD version 01, Annex 3, presents two web links that lead to information in Portuguese, whereas direct links to information in English are available at the Brazilian DNA's web site.	CAR29	OK
iv. Emission reduction calculations for each component are provided separately if more than one component activity is applied	EB 34	Ann 09	There is only one component.	OK	OK
s. In CDM-SSC-PDD section B.6.4 are the results of the ex ante estimation of emission reductions for all years of the crediting period, in a tabular format, provided?	EB 34	Ann 09	**CAR30**: PDD version 01, Section B.6.4, presents a table title with an incorrect unit and Table 4 with data/parameters' units not in accordance with the Guidelines for CDM-SSC-PDD. Besides, the '*' and '**' information is not relevant.	CAR30	OK
t. In CDM-SSC-PDD section B.7.1 are following provided?	EB 34	Ann 09			
i. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB 34	Ann 09	Refer to CAR34 and CL18.	CAR34 CL18	OK
ii. For each below parameter the following information, using the table provided:	EB 34	Ann 09			
a. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred	EB 34	Ann 09	**CAR31**: PDD version 01, Section B.7.1, uses a tabular format which is not in accordance with AMS-I.D. ver 16. **CAR32**: PDD version 01, Section B.7.1, uses an	CAR31 CAR32	OK

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			identification for “Quantity of net electricity supplied to the grid in year y” which is not in accordance with Table 1 of AMS-I.D. ver 16.		

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person/entity that should undertake the measurements and what is the measurement interval; (i) A description of the QA/QC procedures (if any) that should be applied; (ii) Where relevant: any further comment. Provide any relevant further background documentation in Annex 4.	EB 34	Ann 09	**CAR33**: PDD version 01, Section B.7.1, does not mention that a continuous monitoring of $EG_{facility,y}$ is required, as per AMS-I.D. ver 16. **CL16**: Please, rewrite description of "Value of data" for $EF_{CO2,y}$, replacing expression "while the validation". Refer to text under Option 1 of the "Tool to calculate the emission factor for an electricity system" version 02, page 15. **CL17**: Please, clarify that the choice of dispatch data analysis does not allow the ex-ante approach to determine $EF_{grid,OM,y}$.	CAR33 CL16 CL17	OK
iii. A detailed description of the monitoring plan.	EB 34	Ann 09	**CAR34**: PDD version 01, Section B.7.2, refers to monitoring plan procedures in paragraph 17 of AMS-I.D. ver 16, whereas such paragraph relates to lifetime requirements. **CAR35**: PDD version 01, Section B.7.2, refers to EG_y, whereas $EG_{facility,y}$ is the correct identification as per AMS-I.D. ver 16.	CAR34 CAR35	OK
a. The operational and management structure that the project operator will	EB	Ann	**CL18**: Please, clarify management and operational	CAR36	OK

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implement in order to monitor emission reductions and any leakage effects generated by the project activity	34	09	structure for monitoring, including data collection and archiving, considering all parties involved. Additionally, detail the "Area of Operations", which is shown in Item 6 of BGEE's procedure BTCC02 version 02. **CL19**: Please, explain why the main meter (position identified as "A1" in BGEE's panel at RGE's substation) has been removed. Additionally, provide CCEE's records of all measuring events, during the 4th monitoring period, of both energy meters, as per CCEE's "BOM" report ("Boletim de Ocorrência de Medição"). **CL20**: Please, provide documented evidence on the identification (model and serial number) of the energy meter that has been temporarily removed from BGEE's panel at RGE's substation. **CL21**: Please, provide documented evidence on the serial number of the backup meter, which has a warranty label numbered 28998 (position identified as "A2" in BGEE's panel at RGE's substation). **CAR36**: There is a discrepant backup energy meter serial number (90001669) shown on calibration	CL18 CL19 CL20 CL21	

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			certificate CCL 050/10, compared to the serial number 90001696, which needs to be confirmed based on the response to CL21.		

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b. The responsibilities for and institutional arrangements for data collection and archiving	EB 34	Ann 09	Refer to CAR34 and CL18. **CAR37**: PDD version 01, Section B.7.2, establishes storage requirements of monitored data not in accordance with the Guidelines for CDM-SSC-PDD.	CAR37	OK
c. Does the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB 34	Ann 09	Refer to CAR34, CAR37 and CL18.	CAR34 CAR37 CL18	OK
d. Relevant further background information in Annex 4	EB 34	Ann 09	N/A	OK	OK
u. In CDM-SSC-PDD section B.8 are following provided	EB 34	Ann 09			
i. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY	EB 34	Ann 09	Yes.	OK	OK
ii. Contact information of the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity	EB 34	Ann 09	**CL24**: Please, clarify who – person(s)/entity(ies) – was responsible for the application of the baseline and monitoring methodology to the project activity.	CL24	OK
iii. Indicated if the person/entity is also a project participant listed in Annex 1	EB 34	Ann 09	**CAR38**: PDD version 01, Section B.8, does not indicate whether “Comissão Interministerial de Mudança Global do Clima” is a project participant listed in Annex 1.	CAR38	OK

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v. In CDM-SSC-PDD section C.1.1 are following provided?	EB 34	Ann 09			
i. The starting date of a CDM project activity is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun (EB33, Para 76/CDM Glossary of terms/EB41, Para 67)	EB 34	Ann 09	N/A	OK	OK
ii. A description of how this start date has been determined, and a description of the evidence available to support this start date	EB 34	Ann 09	N/A	OK	OK
iii. If this starting date is earlier than the date of publication of the CDM-SSC-PDD for global stakeholder consultation by a DOE, does Section B.5 above contain a description of how the benefits of the CDM were seriously considered prior to the starting date (EB41, Para 68).? (though this is in guideline for large scale projects, it is advisable to maintain this for small scale projects as well)	EB 34	Ann 09	N/A	OK	OK
w. In CDM-SSC-PDD section C.1.2 is the expected operational lifetime of the project activity in years and months provided?	EB 34	Ann 09	Yes. 30y-0m.	OK	OK
x. In CDM-SSC-PDD section C.2 is it stated whether the project activity will use a renewable or a fixed crediting period and completed C.2.1 or C.2.2 accordingly?	EB 34	Ann 09	**CAR39**: PDD version 01, Section C.2, does not state that the project activity uses a renewable crediting period.	CAR39	OK
y. In CDM-SSC-PDD section C.2.1 is it indicated that each crediting period shall be at most 7	EB	Ann 09	Yes.	OK	OK

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years and may be renewed at most two times, provided that, for each renewal, a designated operational entity determines and informs the Executive Board that the original project baseline is still valid or has been updated taking account of new data where applicable?	34				
z. In CDM-SSC-PDD section C.2.1.1 are the dates in the following format: (DD/MM/YYYY) provided?	EB 34	Ann 09	Yes. **CAR40**: PDD version 01, sections C.2.1.1 and C.2.1.2, mention "first" crediting period in the sections' titles, whereas "second" is the correct period.	CAR40	OK
aa. In CDM-SSC-PDD section C.2.1.2 is the length of the first crediting period in years and months?	EB 34	Ann 09	Yes. Refer to CAR40.	CAR40	OK
bb. In CDM-SSC-PDD section C.2.2 is it indicated fixed crediting period at most ten (10) years	EB 34	Ann 09	N/A	OK	OK
cc. In CDM-SSC-PDD section C.2.2.1 are the dates in the format (DD/MM/YYYY) provided?	EB 34	Ann 09	N/A	OK	OK
dd. In CDM-SSC-PDD section C.2.2.2 is the length of the crediting period in years and months provided?	EB 34	Ann 09	N/A	OK	OK
ee. In CDM-SSC-PDD section D.1 is the documentation on the analysis of the	EB	Ann 09	**CAR41**: PDD version 01, Section D.1, presents an incorrect month for the date of ANEEL's Resolution	CAR41	OK

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environmental impacts, if required by Host Party, provided?	34		180/2000. **CAR42**: PDD version 01, Section D.2, presents a statement that is not part of ANEEL's Resolution 652/2003 ("[…] if the area is between 3 km^2 and 13 km^2, it should have a minimum environmental impact.").	CAR42	
ff. In CDM-SSC-PDD section E.1 are following provided?	EB 34	Ann 09			
i. The process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilities comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted	EB 34	Ann 09	N/A	OK	OK
ii. The project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures	EB 34	Ann 09	N/A	OK	OK
iii. The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation	EB 34	Ann 09	N/A	OK	OK
gg. In CDM-SSC-PDD section E.2 are following provided?	EB	Ann 09			

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Local stakeholders that have made comments identified	EB 34	Ann 09	N/A	OK	OK
ii. A summary of these comments	EB 34	Ann 09	N/A	OK	OK
hh. In CDM-SSC-PDD section E.3 is and explanation of how due account have been taken of comments received from local stakeholders provided?	EB 34	Ann 09	N/A	OK	OK
ii. In CDM-SSC-PDD Annex 1 are following provided?	EB 34	Ann 09			
i. Contact information of project participants	EB 34	Ann 09	**CAR43**: PDD version 01, Annex 1, presents an incomplete title, compared to the Guidelines for CDM-SSC-PDD. **CAR44**: PDD version 01, Annex 1, does not list all organisations presented in Section A.3.	CAR43 CAR44	OK
ii. For each organisation listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail	EB 34	Ann 09	Yes. Except for the organisations covered by CAR44.	CAR44	OK
jj. In CDM-SSC-PDD Annex 2 is information from Parties included in Annex I on sources of public funding for the project activity which shall provide an affirmation that such funding does not result in a diversion of official development assistance	EB 34	Ann 09	No public funding is used in the project activity.	OK	OK

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and is separate from and is not counted towards the financial obligations of those Parties provided?					
kk. In CDM-SSC-PDD Annex 3 is the background information used in the application of the baseline methodology provided?	EB 34	Ann 09	See CAR29.	CAR29	OK
ll. In CDM-SSC-PDD Annex 4 is the background information used in the application of the monitoring methodology provided?	EB 34	Ann 09	There is no additional information in Annex 4.	OK	OK
4. Project description					
a. Does the PDD contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation?	VVM	58	Refer to CAR11.	CAR11	OK
b. Is the description of the proposed CDM project activity as contained in the PDD:	VVM	59			OK
i. sufficiently covering all relevant elements?	VVM	59	Refer to CAR11.	CAR11	OK
ii. acurate?	VVM	59	Refer to CAR11. There are two 4,669 kW turbines, manufactured by Möller, in 2003. They feed mechanical energy into two 4.95 MW generators, Model SPA 900, serial numbers 118612 (generator 01) and 118613 (generator 02), manufactured by WEG, in 2003.	CAR11 CAR45 CL22 CL23	OK

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			There is a third generating unit of 332 kW (turbine and generator with same power), manufactured by Rischbieter, serial identification TS KR 01, in 2004. The turbine is submerged, located in the dam. All three generators supply electricity to the grid. **CAR45**: PDD version 01, Section A.4.2, specifies the use of two 4.5 MW turbines, instead of the two 4,669 kW ones that were found operating, during site visit. **CL22**: Please, provide copies of the daily manual records, taken by the plant operators, of the power generation of the 332 kW generating unit, in 2010 ("registro mini central 2010"). **CL23**: Please, provide copies of the daily manual records, taken by the plant operators, of the power generation of generators 01 and 02, in 2010 ("registros grupo gerador 01 e 02"), for every single day when both generators were operating at the same time. Even when that occurred only in part of the day.		

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iii. providing the reader with a clear understanding of the nature of the proposed CDM project activity?	VVM	59	Yes.	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	VVM	59	N/A	OK	OK
c. Is the proposed CDM project activity in existing facilities or or utilizing existing equipments?	VVM	60	The proposed CDM project activity has already been validated and is under the process for renewal of its crediting period. It is in existing facilities and utilizes existing equipments.	OK	OK
d. Is the CDM project activity one of the following types:	VVM	60			
i. Large scale?	VVM	60	No.	OK	OK
ii. Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year?	VVM	60	No.	OK	OK
iii. Bundled small scale projects, each with emission reductions not exceeding 15,000 tonnes?	VVM	60	No.	OK	OK
e. If yes to (c) and (d) above, was a physical site inspection conducted to confirm that the description in the PDD reflects the proposed CDM project activity, unless other means are specified in the methodology?	VVM	60	The site was inspected on 12-13/08/2010.	OK	OK
f. If yes to (d.iii) above, was the number of physical site visits base on samping?	VVM	60	N/A	OK	OK
g. If yes is the sampling size appropriately justified through statistical analysis?	VVM	60	N/A	OK	OK
h. For other individual proposed small scale CDM project activities with emission reductions not	VVM	61	The site was inspected on 12-13/08/2010.	OK	OK

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exceeding 15,000 tonnes per year, was a physical site inspection conducted?					
i. For all other proposed CDM project activities not referred to in paragraphs 59 – 61, was a physical site inspection conducted?	VVM	62	N/A	OK	OK
j. If no, was it appropriately justified?	VVM	62	N/A	OK	OK
k. Does the proposed CDM project activity involve the alteration of an existing installation or process?	VVM	63	N/A	OK	OK
l. If yes, does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	VVM	63	N/A	OK	OK
5. Baseline and monitoring methodology					
a. General requirement					
a. Do the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board?	VVM	65	Yes. Methodology AMS-I.D. ver 16.	OK	OK
b. Is the selected methodology applicable to the project activity?	VVM	66	Refer to (5.b.a) below.	-	-
c. Had the PP correctly applied the selected methodology?	VVM	66	Refer to (5.b.c) below.	-	-
d. Had the selected methodology been correctly applied with respect to project boundary?	VVM	67	Refer to (5.c) below.	-	-
e. Had the selected methodology been correctly applied with respect to baseline identification?	VVM	67	Refer to (5.d) below.	-	-
f. Had the selected methodology been correctly	VVM	67	Refer to (5.e) below.	-	-

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applied with respect to Algorithms and/or formulae used to determine emission reductions?					
g. Had the selected methodology been correctly applied with respect to additionality?	VVM	67	Refer to (6) below.	OK	OK
i. Has the general guidance to the small scale CDM methodologies, information on additionality (attachment A to appendix B) been applied correctly?	AMS	I.D	N.a.	OK	OK
h. Had the selected methodology been correctly applied with respect to monitoring methodology?	VVM	67	Refer to (7) below.	OK	OK
b. Applicability of the selected methodology to the project activity					
a. Is the selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity including that the used version is valid?	VVM	68	Yes.	OK	OK
b. Has the DOE applied specific guidance provided by the CDM Executive Board in respect to the applicable approved methodology?	VVM	69	Yes.	OK	OK
c. Is the methodology correctly quoted?	VVM	70	Yes.	OK	OK
d. Are the applicability conditions of the methodology met?	VVM	71	Yes.	OK	OK
i. Does the project activity comprises renewable energy generation units, such as photovoltic, hydro, tidal/wave, wind, geothermal and renewable biomass that supply electricity to a national or a regional grid? Note: Project activities that displace electricity from an electricity distribution system that is or would	AMS	I.D	Yes.	OK	OK

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have been supplied by at least one fossil fuel fired generating unit shall apply AMS-I.F.					
ii. Has the project participant provided justification in line with the applicabiltiy of methodology with respect to Table 2 of approved methodology ?	AMS	I.D	Yes.	OK	OK
iii. Does the project activity involve i. install a new power plant at site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); ii. involve a capacity addition iii. involve a retrofit of (an) existing plant(s) or iv. involve a replacement of (an) existing plant(s)	AMS	I.D	New power plant	OK	OK
iv. For Hydro power plants with reservoirs, does it satisfy at least one of the following conditions (a) the project activity is implemented in an exisitng reservoir with no change in the volume of reservoir (b) the project activity is implemented in an exisitng reservoir, where the volume of reservoir is increased and the power density of the project activity, is greater than 4 W/m2 (c) the project activity results in new reservoirs and the power density of the power plant is greater than 4 W/m2.	AMS	I.D	(c)	OK	OK

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v. Is the following guideline followed: (a) If the new unit has both renewable and non-renewable components (eg., a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. (b) If the new unit co-fires fossil fuels, the capacity of the entrie unit shall not exceed the limit of 15 MW.	AMS	I.D	n.a.	OK	OK
vi. Is the following guideline followed: Combined heat and power (co-generation) systems are not eligible under this category	AMS	I.D	n.a.	OK	OK
vii. Is the following guideline followed: In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct6 from the existing	AMS	I.D	n.a.	OK	OK
viii. Is the following guideline followed: In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	AMS	I.D	n.a.	OK	OK
e. Is the project activity expected to result in emissions other than those allowed by the methodology?	VVM	71	No.	OK	OK

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f. Is the choice of the methodology justified?	VVM	71	Yes.	OK	OK
g. Have the project participants shown that the project activity meets each of the applicability conditions or the approved methodology?	VVM	71	Refer to (5.b.c) above	-	-
h. Have the project participants shown that the project activity meets each of the applicability conditions of any tool or other methodology component referred to the methodology?	VVM	71	Yes.	OK	OK
i. Is the DOE, based on local and sectoral knowledge, aware that comparable information is available from sources other than that used in the PDD?	VVM	71	Yes.	OK	OK
j. If yes, was the PDD cross checked against the other sources to confirm that the project activity meets the applicability conditions of the methodology? (provide the reference to these choices)	VVM	71	Yes. Environmental licenses and ANEEL's resolutions relevant to the operation of the plant.	OK	OK
k. Can a determination regarding the applicability of the selected methodology to the proposed CDM project activity be made?	VVM	72	Yes.	Ok	OK
l. If no, clarification of the methodoloy was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	72	N/A	OK	OK
m. If answer to (5.b.d) above is "no", revision or deviation from the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	73	N/A	OK	OK
n. If yes to (5.b.l) and (5.b.m) above, a request for registration was submited before the CDM	VVM	74	N/A	OK	OK

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Executive Board has approved the proposed deviation or revision?					
c. Project boundary					
a. Does the PDD correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity?	VVM	78	Refer to CL05 and CL06.	CL05 CL06	OK
i. Does the physical, geographical site of the renewable generation?	AMS	I.D			
b. Is the delineation in the PDD of the project boundary correct and include identification of all locations, processes and equipment including secondary equipment and associated processes such as logistics etc.?	VVM	79	Refer to CL05 and CL06.	CL05 CL06	OK
c. Does the delineation in the PDD of the project boundary meet the requirements of the selected baseline?	VVM	79	Refer to CL05 and CL06.	CL05 CL06	OK
d. Have changes been made to the project boundary in comparison to the webhosted PDD. If yes please comment on the reason for the changes.	VVM	79	N/A	OK	OK
e. Have all sources and GHGs required by the methodology been included within the project boundary?	VVM	79	Yes.	OK	OK
f. Does the methodology allow project participant to choose whether a source or gas is to be included within the project boundary?	VVM	78	No.	OK	OK

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g. If yes, have the project participants justified that choice?	VVM	79	N/A	OK	OK
h. If yes, is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	79	N/A	OK	OK
d. Baseline identification					
a. Does the PDD identify the baseline for the proposed CDM project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CDM project activity?	VVM	81	Refer to CAR10.	CAR10	OK
b. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	82	Yes.	OK	OK
i. Is the following guideline followed: Is the project activity new grid-connected renewable power plant/unit and hence the baseline scenario is the electricity delivered to the grid by the project activity that otherwise would have been generated by the operation of grid-connected power plants and by the addition of new generation sources.	AMS	I.D	Yes.	OK	OK
ii. Is the baseline emissions calculated as the product of electrical energy baseline EGBL, y expressed in MWh of electricity produced by the renewable generating unit multiplied by the grid emission	AMS	I.D	Yes.	OK	OK

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BE y = EG BL y* EF CO2 grid y					
iii. Is the Emission Factor calculated in a transparent and conservative manner as follows: (a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the .Tool to calculate the Emission Factor for an electricity system.. OR (b) The weighted average emissions (in t CO2/MWh) of the current generation mix. The data of the year in which project generation occurs must be used. Calculations shall be based on data from an official source (where available) and made publicly available.	AMS	I.D	(A)	OK	OK
i. Is the following guideline followed: - In the case of landfill gas, waste gas, wastewater treatment and agro-industries projects, recovered methane emissions are eligible under a relevant Type III category. - If the recovered methane is used for electricity generation for supply to a grid then the baseline shall be calculated in accordance with paragraphs below else use other applicable type I methodologies such as AMS-IA or AMS-	AMS	I.D	n.a.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
I.F. - If the recovered methane is used for heat generation or cogeneration it is eligible under category I.C.					
ii. Is the following guideline followed for project activities that involve retrofits or replacements of an existing facility for renewable energy generation: - The baseline scenario is the continuing operation of the existing plant. - The methodology uses historical electricity generation data to determine the electricity generation of the existing plant in the baseline scenario, assuming that the historical situation observed prior to the implementation of the project activity would continue. In the absence of the CDM project activity, the existing facility would continue to provide electricity to the grid BL retrofit y EG, at historical average levels EGhistorical, y until the time at which the electrical generation facility would be likely to be replaced or retrofitted in the absence of the CDM project activity ($DATE_{BaselineRretrofit}$). From that point of time onwards, the baseline scenario is assumed to correspond to the project activity, and baseline electricity production is assumed to equal the project.s	AMS	I.D	n.a.	OK	OK

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net electricity production and no emission reductions are assumed to occur.					
iii. Is the following guideline followed for Retrofit/capacity addition of hydro, solar, wind, geothermal, wave and tidal plants: - Use of standard deviation for calculating baseline elecricity generation. - A minimum of 5 years (60 months) (excluding abnormal years) of historical generation data is required in the case of hydro facilities and for other facilities a minimum of 3 years (36 months) data is required. - In the case that 5 years of historical data are not available - e.g., due to recent retrofits or exceptional circumstances8 - a new methodology or methodology revision shall be proposed. - In the case of wind, solar, wave or tidal power plants, the electricity produced by the added power plant(s) or unit(s) could be directly metered and used to determine EG BL,y. provided that the electricity produced by the added power plant(s) or unit(s) addition is separately metered. - Project activities for capacity addition in hydro or geothermal shall use equation 3 replacing	AMS	I.D	n.a.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
subscript .retrofit. with .capacity addition.					
iv. Is the following guideline followed for Retrofit renewable energy units other than hydro, solar, wind, geothermal, wave and tidal plants: Baseline emissions are calculated as: $BE_{retrofit,CO2,y} = (EG_{PJ,retrofit,y} - EG_{BL,retrofit,y}) * EF_{CO2}$ EG historical - A minimum of 3 years of data is required. In the case that 3 years of historical data are not available 9- e.g., due to recent retrofits or exceptional circumstances - a new methodology or methodology revision shall be proposed	AMS	I.D	n.a.	OK	OK
v. Is the requirements concerning demonstration of the remaining lifetime of the replaced equipment met as described in the general guidelines to SSC methodologies? Note: If the remaining lifetime of the affected systems increases due to the project activity, the crediting period shall be limited to the estimated remaining lifetime, i.e., the time when the affected systems would have been replaced in the absence of the project activity.	AMS	I.D	n.a.	OK	OK
vi. Is the following guideline followed for Capacity addition with renewable energy units other than	AMS	I.D	n.a.	OK	OK

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hydro, solar, wind, geothermal, wave and tidal plants: - The baseline scenario is the existing facility that would continue to supply electricity to the grid at historical levels, until the time at which the generation facility would likely be replaced or retrofitted ($DATE_{BaselineRetrofit}$). - If the existing units shut down, are derated, or otherwise become limited in production, the project activity should not get credit for generating electricity from the same renewable resources that would have otherwise been used by the existing units (or their replacements).					
vii. Does project activity involve co-firing ? If yes, the quantities and types of biomass and biomass to fossil fuel ratio to be used during crediting period is explained and documented transparently and presented in PDD ? Are exante estimation of these values provided in the PDD ?	AMS	I.D	n.a.	OK	OK
c. Does the selected methodology require use of tools (such as the "Tool for the demonstration and assessment of additionality" and the "Combined tool to identify the baseline scenario and demonstrate additionality") to establish the baseline scenario?	VVM	82	Yes. ACM0002 version 11 ("Consolidated baseline methodology for grid-connected electricity generation from renewable sources") and the "Tool to calculate the emission factor for an electricity system" (version 02).	OK	OK

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d. If yes, was the methodology consulted on the application of thes tools? (In such cases, the guidance in the methodology shall supersede the tool.)	VVM	82	Yes.	OK	OK
e. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	No.	OK	OK
f. If yes, are all scenarios that are considered by the project participants and are supplementary to those required by the methodology reasonable in the context of the proposed CDM project activity?	VVM	83	N/A	OK	OK
g. Has any reasonable alternative scenario been excluded?	VVM	83	N/A	OK	OK
h. Is the baseline scenario identified reasonably supported by:	VVM	84	N/A	OK	OK
i. Assumptions?	VVM	84	N/A	OK	OK
ii. Calculations?	VVM	84	N/A	OK	OK
iii. Rationales?	VVM	84	N/A	OK	OK
i. Are the documents and sources referred to in the PDD correctly quoted and interpreted?	VVM	84			
j. Was the information provided in the PDD cross checked with other verifiable and credible sources, such as local expert opinion, if available? (idendify the sources)	VVM	84	Refer to CL14.	CL14	OK
k. Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed CDM project activity?	VVM	85	Yes.	OK	OK

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l. Have all relevant policies and circumstances been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board?	VVM	85	Yes.	OK	OK
m. Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM	86	Yes.	OK	OK
e. Algorithms and/or formulae used to determine emission reductions					
a. Do the steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected baseline and monitoring?	VVM	89	Yes.	OK	OK
b. Have the equations and parameters in the PDD been correctly applied with respect those in the select approved methodology?	VVM	90	Yes.	OK	OK
i. Have project emissions considered as described in recent version of AMS.I.D followed for: - Emissions related to the operation of geothermal power plants; - Emissions from water reservoirs of hydro power plants.	AMS	I.D	n.a.	OK	OK
ii. Is leakage considered, if the energy generating	AMS	I.D	n.a.	OK	OK

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equipment is transfereed from another activity					
iii. Is emission reduction calculated as per equation ER y = BE y − PE y − LE y	AMS	I.D	Yes.	OK	OK
c. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	Yes.	OK	OK
d. If yes, has adequate justification been provided (based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided)?	VVM	90	No. Refer to CAR20, CAR21 and CL13.	CAR20 CAR21 CL13	OK
e. If yes, have correct equations and parameters been used, in accordance with the methodology selected?	VVM	90	Refer to (5.e.b) above	-	-
f. Will data and parameters be monitored throughout the crediting period of the proposed CDM project activity?	VVM	91	Yes.	OK	OK
g. If no, and these data and parameters will remain fixed throughout the crediting period, are all data sources and assumptions:	VVM	91			
i. Appropriate and correct?	VVM	91	N/A	OK	OK
ii. Applicable to the proposed CDM project activity?	VVM	91	N/A	OK	OK
iii. Resulting in a conservative estimate of the emission reductions?	VVM	91	N/A	OK	OK
h. Will data and parameters be monitored on implementation and hence become available only after validation of the project activity?	VVM	91	No.	OK	OK
i. If yes, are the estimates provided in the PDD for	VVM	91	N/A	OK	OK

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these data and parameters reasonable?					
6. Additionality of a project activity					
a. Does the PDD describe how a proposed CDM projet activity is additional?	VVM	94	N/A	OK	OK
b. Has the project participant used the "Tool for the demonstration and assessment of additionality"? (if yes go to item "d")	VVM	94	N/A	OK	OK
c. Has the project participant provided an explanation to show that the project activity would not have occurred anyway due to at least one of the following barriers:	VVM	94	N/A	OK	OK
i. Investment barrier: a financially more viable alternative to the project activity would have led to higher emissions?	VVM	94	N/A	OK	OK
ii. Technological barrier: a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertainty or low market share of the new technology adopted for the project activity and so would have led to higher emissions?	VVM	94	N/A	OK	OK
iii. Barrier due to prevailing practice: prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions?	VVM	94	N/A	OK	OK
iv. Other barriers: without the project activity, for another specific reason identified by the project participant, such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, or	VVM	94	N/A	OK	OK

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capacity to absorb new technologies, emissions would have been higher?					
d. Were the following steps of the tool to assess additionality used:	EB 39	Ann 10			
v. Identification of alternatives to the project activity?	EB 39	Ann 10	N/A	OK	OK
vi. Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible?	EB 39	Ann 10	N/A	OK	OK
vii. Barriers analysis?	EB 39	Ann 10	N/A	OK	OK
viii. Common practice analysis?	EB 39	Ann 10	N/A	OK	OK
e. In step 1 (i) have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 1a: Define alternatives to the project activity	EB 39	Ann 10	N/A	OK	OK
ii. Sub-step 1b: Consistency with mandatory laws and regulations	EB 39	Ann 10	N/A	OK	OK
f. Have the following alternatives been included while defining alternatives as per sub-step 1a?	EB 39	Ann			

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i. (a) The proposed project activity undertaken without being registered as a CDM project activity;	EB 39	Ann 10	N/A	OK	OK
ii. (b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;	EB 39	Ann 10	N/A	OK	OK
iii. (c) If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	EB 39	Ann 10	N/A	OK	OK
g. Has the project participant included the technologies or practices that provide outputs or services with comparable quality, properties and application areas as the proposed CDM project activity and that have been implemented previously or are currently being introduced in the relevant country/region?	EB 39	Ann 10	N/A	OK	OK
h. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	EB 39	Ann 10	N/A	OK	OK
i. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.?	EB 39	Ann 10	N/A	OK	OK

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j. If an alternative does not comply with all mandatory applicable legislation and regulations, has it been shown that, based on an examination of current practice in the country or region in which the law or regulation applies, those applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country?	EB 39	Ann 10	N/A	OK	OK
k. Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations done correctly? Please state the outcome.	EB 39	Ann 10	N/A	OK	OK
l. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	N/A	OK	OK
m. In step 2, have all the sub-steps as below been followed?	EB 39	Ann 10		OK	OK
i. Sub-step 2a: Determine appropriate analysis method;	EB 39	Ann 10	N/A	OK	OK
ii. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	N/A	OK	OK

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iii. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	N/A	OK	OK
iv. Sub-step 2b: Option III. Apply benchmark analysis;	EB 39	Ann 10	N/A	OK	OK
v. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	N/A	OK	OK
vi. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	N/A	OK	OK
n. In sub-step 2a has the determination of appropriate method of analysis done as per the guidance as below?	EB 39	Ann 10			
i. Simple cost analysis if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income (Option I).	EB 39	Ann 10	N/A	OK	OK
ii. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification.	EB 39	Ann 10	N/A	OK	OK
o. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis? Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	EB 39	Ann 10	N/A	OK	OK

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p. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis? Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making context. Please specify	EB 39	Ann 10	N/A	OK	OK
q. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis?	EB 39	Ann 10	N/A	OK	OK
i. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context.	EB 39	Ann 10	N/A	OK	OK
ii. When applying Option II or Option III, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the project activity can be implemented by the project participant, the specific financial/economic situation of the company undertaking the project activity can be considered.	EB 39	Ann 10	N/A	OK	OK
iii. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial)	EB 39	Ann 10	N/A	OK	OK

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expert or documented by official publicly available financial data; (b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views and private equity investors/funds' required return on comparable projects; (c) A company internal benchmark (weighted average capital cost of the company), only in the particular case referred to above in 2. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same benchmark; (d) Government/official approved benchmark where such benchmarks are used for investment decisions; (e) Any other indicators, if the project participants can demonstrate that the above Options are not applicable and their indicator is appropriately justified. Please specify benchmark and justify.					
r. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10			
i. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for	EB 39	Ann 10	N/A	OK	OK

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example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, as appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country.					
ii. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	EB 39	Ann 10	N/A	OK	OK
iii. Justify and/or cite assumptions.	EB 39	Ann 10	N/A	OK	OK
iv. In calculating the financial/economic indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions.	EB 39	Ann 10	N/A	OK	OK
v. Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.	EB 39	Ann 10	N/A	OK	OK
vi. Present in the CDM-PDD a clear comparison of the financial indicator for the proposed CDM activity.Please specify details for above.	EB 39	Ann 10	N/A	OK	OK
s. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II	EB 39	Ann	N/A	OK	OK

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and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.		10			
t. Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10	N/A	OK	OK
u. In step 3: Barrier analysis have all the sub-steps as below been followed?	EB 39	Ann 10		OK	OK
i. Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity;	EB 39	Ann 10	N/A	OK	OK
ii. Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity).	EB 39	Ann 10	N/A	OK	OK
v. Has the below guideline followed for Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project?	EB 39	Ann 10			
i. (a) Investment barriers: For alternatives undertaken and operated by private entities: Similar activities have only been implemented with grants or other non-commercial finance terms. No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project activity is to be implemented, as	EB 39	Ann 10	N/A	OK	OK

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demonstrated by the credit rating of the country or other country investments reports of reputed origin.					
ii. (b) Technological barriers: Skilled and/or properly trained labour to operate and maintain the technology is not available in the relevant country/region, which leads to an unacceptably high risk of equipment disrepair and malfunctioning or other underperformance; Lack of infrastructure for implementation and logistics for maintenance of the technology, Risk of technological failure: the process/technology failure risk in the local circumstances is significantly greater than for other technologies that provide services or outputs comparable to those of the proposed CDM project activity, as demonstrated by relevant scientific literature or technology manufacturer information, The particular technology used in the proposed project activity is not available in the relevant region.	EB 39	Ann 10	N/A	OK	OK
iii. (c) Barriers due to prevailing practice: The project activity is the “first of its kind”.	EB 39	Ann 10	N/A	OK	OK
iv. (d) Other barriers, preferably specified in the underlying methodology as examples.	EB 39	Ann 10	N/A	OK	OK
w. Has the outcome from Step 3a clearly mentioned in PDD?	EB 39	Ann	N/A	OK	OK

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x. Has the below guideline followed for Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)?	EB 39	Ann 10			
i. If the identified barriers also affect other alternatives, explain how they are affected less strongly than they affect the proposed CDM project activity. In other words, demonstrate that the identified barriers do not prevent the implementation of at least one of the alternatives. Any alternative that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration.	EB 39	Ann 10	N/A	OK	OK
ii. Provide transparent and documented evidence, and offer conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of the identified barriers and whether alternatives are prevented by these barriers.	EB 39	Ann 10	N/A	OK	OK
iii. The type of evidence to be provided should include at least one of the following: (a) Relevant legislation, regulatory information or industry norms; (b) Relevant (sectoral) studies or surveys (e.g. market surveys, technology studies, etc) undertaken by universities, research institutions, industry associations, companies, bilateral/multilateral institutions, etc;	EB 39	Ann 10	N/A	OK	OK

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(c) Relevant statistical data from national or international statistics; (d) Documentation of relevant market data (e.g. market prices, tariffs, rules); (e) Written documentation of independent expert judgments from industry, educational institutions (e.g. universities, technical schools, training centres), industry associations and others. Please specify.					
y. Has the outcome from Step 3 clearly mentioned in PDD?	EB 39	Ann 10	N/A	OK	OK
z. In step 4: Common practise analysis have all the sub-steps as below followed?	EB 39	Ann 10			
i. Sub-step 4a: Analyze other activities similar to the proposed project activity;	EB 39	Ann 10	N/A	OK	OK
ii. Sub-step 4b: Discuss any similar Options that are occurring.	EB 39	Ann 10	N/A	OK	OK
aa. Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity? Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other CDM project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to	EB 39	Ann 10	N/A	OK	OK

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which extent similar activities have already diffused in the relevant region.					
bb. Has the below guideline followed for Sub-step 4b: Discuss any similar Options that are occurring? If similar activities are identified, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially/economically attractive (e.g., subsidies or other financial flows) and which the proposed project activity cannot use or did not face the barriers to which the proposed project activity is subject. In case similar projects are not accessible, the PDD should include justification about non-accessibility of data/information.	EB 39	Ann 10	N/A	OK	OK
cc. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	N/A	OK	OK
dd. Has it been proved that the porject is additional?	EB 39	Ann 10	N/A	OK	OK
ee. Has the PP demonstrated additionality by	EB	Ann	N/A	OK	OK

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explaining Investment barrier, Access-to-finance barrier, Technological barrier, Barrier due to prevailing practice or other barriers?	35	34			
ff. If Investment barrier has been explained, is it demonstraed that financilly more viable alternative to the project activity would have led to higher emissions? Please explain.	EB 35	Ann 34	N/A	OK	OK
gg. If Access-to-finance has been explained, is it demonstraed that the project activity could not access appropriate capital without consideration of the CDM revenues? Please explain.	EB 35	Ann 34	N/A	OK	OK
hh. If Technological barrier has been explained, is it demonstraed that a less technologically advanced alternative to the project activity involves lower risks due to the performance uncertinity or low market share of the new technology adopted for the project activity and so would have led to higher emissions? Please explain.	EB 35	Ann 34	N/A	OK	OK
ii. If prevailing practise barrier has been explained, is it demonstrated that the prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions? Please explain.	EB 35	Ann 34	N/A	OK	OK
jj. If other barrier has been explained, is it demonstrated that Other barriers such as institutional barriers or limited information, managerial resources, organizational capacity, or	EB 35	Ann 34	N/A	OK	OK

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capacity to absorb new technologies would prevent the project activity any way?					
kk. Have the project participants identifed the most relevant barrier?	EB 35	Ann 34	N/A	OK	OK
ll. Have the project participants provided transparent and documented third party evidence such as national/international statistics, national/provincial policy and legislation, studies/surveys by independent agencies etc. to demonstrate the most relevant barrier? Please explain.	EB 35	Ann 34	N/A	OK	OK

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a. Prior consideration of the clean development mechanism					
a. Is the project ativity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	98	N/A	OK	OK
b. If yes, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	VVM	98	N/A	OK	OK
c. Is the start date of the project activity, reported in the PDD, in accordance with the "Glossary of CDM terms", which states that "The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins."?	VVM	99	N/A	OK	OK
d. Does the project activity require construction, retrofit or other modifications?	VVM	99	N/A	OK	OK
e. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	N/A	OK	OK
f. Is it a new project activity (a project activity with a start date on or after 02 August 2008) or an existing project activity (a project activity with a start date before 02 August 2008)?	VVM	100	N/A	OK	OK
g. For a new project, for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start date, had the PP informed the Host Party DNA and/or the UNFCCC secretariat in writing of the	VVM	101	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
commencement of the project activity and of their intention to seek CDM status? (Provide reference to such confirmation from host Party DNA and/or UNFCCC secretariat).					
h. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	102			
ii. evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project, including, inter alia:	VVM	102	N/A	OK	OK
a. minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a proposed CDM project activity?	VVM	102	N/A	OK	OK
iii. reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation, including, inter alia:	VVM	102	N/A	OK	OK
a. contract with consultants for CDM/PDD/methodology services?	VVM	102	N/A	OK	OK
b. Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with	VVM	102	N/A	OK	OK

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multilateral financial institutions or carbon funds)?					
c. evidence of agreements or negotiations with a DOE for validation services?	VVM	102	N/A	OK	OK
d. submission of a new methodology to the CDM Executive Board?	VVM	102	N/A	OK	OK
e. publication in newspaper?	VVM	102	N/A	OK	OK
f. interviews with DNA?	VVM	102	N/A	OK	OK
g. earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102	N/A	OK	OK
h. Has the chronology of events including time lines been appropriately captured and explained/detailed in the PDD?	VVM	102	N/A	OK	OK
b. Identification of alternatives					
a. Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVM	105	Yes.	OK	OK
b. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	N/A	OK	OK
c. Does the list of alternatives given in the PDD esure that:	VVM	106		OK	OK
i. the list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity?	VVM	106	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. the list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity?	VVM	106	N/A	OK	OK
iii. the alternatives comply with all applicable and enforced legislation?	VVM	106	N/A	OK	OK
c. Investment analysis					
a. Has investment analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	108	Yes.	OK	OK
b. If yes, does the PDD provide evidence that the proposed CDM project activity would not be:	VVM	108			
i. the most economically or financially attractive alternative?	VVM	108	N/A	OK	OK
ii. economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	N/A	OK	OK
c. Was this shown by one of the following approaches?	VVM	109			
i. The proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity.	VVM	109	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	N/A	OK	OK
iii. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	N/A	OK	OK
d. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 51	Ann 58	N/A	OK	OK
e. Does the project IRR and equity IRR calculations reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	N/A	OK	OK
f. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment?	EB 51	Ann 58	N/A	OK	OK
g. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 51	Ann 58	N/A	OK	OK
h. Does the cash flow in the final year include a fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	N/A	OK	OK
i. Has the fair value been calculated in accordance	EB	Ann	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
with local accounting regulations where available, or international best practice?	51	58			
j. Does the fair value calculations include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets?	EB 51	Ann 58	N/A	OK	OK
k. Was depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, added back to net profits for the purpose of calculating the financial indicator (e.g. IRR, NPV)?	EB 51	Ann 58	N/A	OK	OK
l. Has taxation been included as an expense in the IRR/NPV calculation in cases where the benchmark or other comparator is intended for post-tax comparisons?	EB 51	Ann 58	N/A	OK	OK
m. Are the input values used in all investment analysis valid and applicable at the time of the investment decision taken by the project participant?	EB 51	Ann 58	N/A	OK	OK
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 51	Ann 58	N/A	OK	OK
o. Are all the listed input values been consistently applied in all calculations?	EB 51	Ann 58	N/A	OK	OK
p. Does the investment analysis reflect the economic decision making context at point of the decision to recomence the project in the case of	EB 51	Ann 58	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM?					
q. Have project participants supplied the spreadsheet versions of all investment analysis?	EB 51	Ann 58	N/A	OK	OK
r. Are all formulas used in this analysis readable and all relevant cells be viewable and unprotected?	EB 51	Ann 58	N/A	OK	OK
s. In cases where the project participant does not wish to make such a spreadsheet available to the public has the PP provided an exact read-only or PDF copy for general publication?	EB 51	Ann 58	N/A	OK	OK
t. In case the PP wishes to black-out certain elements of the publicly available version, is it justifiable?	EB 51	Ann 58	N/A	OK	OK
u. Was the cost of financing expenditures (i.e. loan repayments and interest) included in the calculation of project IRR?	EB 51	Ann 58	N/A	OK	OK
v. In the calculation of equity IRR, has only the portion of investment costs which is financed by equity been considered as the net cash outflow?	EB 51	Ann 58	N/A	OK	OK
w. Has the portion of the investment costs which is financed by debt been considered a cash outflow in the calcualtion of equity IRR? (this is not allowed)	EB 51	Ann 58	N/A	OK	OK
x. Was a pre-tax benchmark be applied?	EB 51	Ann	N/A	OK	OK

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		58			

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
y. In cases where a post-tax benchmark is applied, is actual interest payable taken into account in the calculation of income tax?	EB 51	Ann 58	N/A	OK	OK
z. In such situations, was interest calculated according to the prevailing commercial interest rates in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years?	EB 51	Ann 58	N/A	OK	OK
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 51	Ann 58	N/A	OK	OK
bb. Has local commercial lending rates or weighted average costs of capital (WACC) selected as appropriate benchmarks for a project IRR?	EB 51	Ann 58	N/A	OK	OK
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 51	Ann 58	N/A	OK	OK
dd. In case benchmarks supplied by relevant national authorities selected is it applicable to the project activity and the type of IRR calculation presented?	EB 51	Ann 58	N/A	OK	OK
ee. In the cases of projects which could be developed by an entity other than the project participant is the benchmark applied based on publicly available data sources which can be clearly validated?	EB 51	Ann 58	N/A	OK	OK
ff. Have internal company benchmarks/expected	EB	Ann	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC) been applied in cases where there is only one possible project developer?	51	58			
gg. In such cases, have these values been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in the same sector in the country/region?	EB 51	Ann 58	N/A	OK	OK
hh. Has a minimum clear evidence of the resolution by the company's Board and/or shareholders been provided to the effect as above?	EB 51	Ann 58	N/A	OK	OK
ii. Has a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects been conduted?	EB 51	Ann 58	N/A	OK	OK
jj. Does the risk premiums applied in the determination of required returns on equity reflect the risk profile of the project activity being assessed, established according to national/international accounting principles? (It is not considered reasonable to apply the rate general stock market returns as a risk premium for project activities that face a different risk profile than an investment in such indices.)	EB 51	Ann 58	N/A	OK	OK
kk. Has an investment comparison analysis and not	EB	Ann	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
a benchmark analysis used when the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services?	51	58			
ll. Have variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues been subjected to reasonable variation (positive and negative) and the results of this variation been presented in the PDD and be reproducible in the associated spreadsheets?	EB 51	Ann 58	N/A	OK	OK
mm. Have a corrective action been raised for a variable to be included in the sensitivity analysis which constitute less than 20% and have a material impact on the analysis ?	EB 51	Ann 58	N/A	OK	OK
nn. Is the range of variations selected is reasonable in the project context?	EB 51	Ann 58	N/A	OK	OK
oo. Do the variations in the sensitivity analysis at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances?	EB 51	Ann 58	N/A	OK	OK
pp. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative, is an assessment done of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions	EB 51	Ann 58	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity?					
qq. Was the plant load factor defined ex-ante in the CDM-PDD according to one of the following options:	EB 51	Ann 58			
i. The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval?	EB 51	Ann 58	N/A	OK	OK
ii. The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company)?	EB 51	Ann 58	N/A	OK	OK
rr. Was a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices conducted?	VVM	111	N/A	OK	OK
ss. Were the parameters cross-checked agains third-party or publicly available sources, such as invoices or price indices?	VVM	111	N/A	OK	OK
tt. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants reviewed?	VVM	111	N/A	OK	OK
uu. Was the correctnes of computations carried out	VVM	111	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and documented by the project participants assessed?					
vv. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions assessed?	VVM	111	N/A	OK	OK
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented?	VVM	112	N/A	OK	OK
xx. Do any risk premiums applied determining the benchmark reflect the risks associated with the project type or activity?	VVM	112	N/A	OK	OK
yy. To determine this, was it assessed whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by:	VVM	112			
iii. assessing previous investment decisions by the project participants involved?	VVM	112	N/A	OK	OK
iv. determining whether the same benchmark has been applied?	VVM	112	N/A	OK	OK
v. determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	112	N/A	OK	OK
zz. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed CDM project activities?	VVM	113	N/A	OK	OK
xx. If yes:	VVM	113			

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. has the FSR been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed?	VVM	113	N/A	OK	OK
ii. Are the values used in the PDD and associated annexes fully consistent with the FSR?	VVM	113	N/A	OK	OK
iii. If not, was the appropriateness of the values validated?	VVM	113	N/A	OK	OK
iv. On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?	VVM	113	N/A	OK	OK
d. Barrier analysis					
a. Has barrier analysis been used to demonstrated the additionality of the proposed CDM project activity?	VVM	115	Yes.	OK	OK
b. If yes, does the PDD demonstrate that the proposed CDM project activity faces barriers that:	VVM	115			
i. prevent the implementation of this type of proposed CMD project activity?	VVM	115	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. do not prevent the implementation of at least one of the alternatives?	VVM	115	N/A	OK	OK
c. Are there any issues that have a clear direct impact on the financial returns of the project activity, other than: risk related barriers, for example risk of technical failure, that could have negative effects on the financial performance; or barriers related to the unavailability of sources of finance for the project activity? {If yes, these issues cannot be considered barriers and shall be assessed by investment analysis. [Refer to (6.c) above]}	VVM	116	N/A	OK	OK
d. Were the barriers determined as real by:	VVM	117			
i. assessing the available evidence and/or undertaking interviews with relevant individuals (including members of industry associations, government officials or local experts if necessary) to determine whether the barriers listed in the PDD exist?	VVM	117	N/A	OK	OK
ii. ensuring that existence of barriers is substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics?	VVM	117	N/A	OK	OK
iii. Is existence of a barrier substantiated only by the opinions of the project participants? (If yes, this barrier cannot be considered as adequately substantiated)	VVM	117	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
e. Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible alternatives by applying local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed CDM project activity and would not equally prevent implementation of *at least one of* the possible alternatives, in particular the identified baseline scenario?	VVM	117	N/A	OK	OK
e. Common practice analysis					
a. Is this a proposed large-scale, or first-of-its kind small-scale project activity?	VVM	119	No.	OK	OK
b. If yes, was common practice analysis carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality?	VVM	119	N/A	OK	OK
c. Was it assessed whether the geograpphical scope (e.g. defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type? (For certain technologis the relevatn region for assessment will be local and for others it may be transnational/global.	VVM	120	N/A	OK	OK
d. Was a region other than the entire host country chosen?	VVM	120	N/A	OK	OK
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	N/A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
f. Using official sources and local and industry expertise, was it determined to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, have been undertaken in the defined region?	VVM	120	N/A	OK	OK
g. Are similar and operational projects, other than CDM project activities, already ”widely observed and commonly carried out” in the defined region?	VVM	120	N/A	OK	OK
h. If yes, was it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVM	120	N/A	OK	OK
7. Monotoring plan					
a. Does the PDD include a monitoring plan?	VVM	122	Yes. Refer to CARs 23-25, 32-36 and 38, and CLs 14-18.	CAR22 to CAR24 CAR31 to CAR35 CAR37 CL14 to CL18	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	122	Refer to 7a.	CAR22 to CAR24 CAR31 to CAR35 CAR37 CL14 to CL18	OK
c. Were the list of parameters required by the the selected methodology identified?	VVM	123	Refer to 7a.	CAR22 to CAR24 CAR31 to CAR35 CAR37	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
				CL14 to CL18	

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
d. Does the monitoring plan contains all necessary parameters?	VVM	123	Refer to 7a.	CAR22 to CAR24 CAR31 to CAR35 CAR37 CL14 to CL18	OK
e. Are the parameters clearly described?	VVM	123	Refer to 7a.	CAR22 to CAR24 CAR31 to CAR35 CAR37	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
				CL14 to CL18	

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
f. Does the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	123	Refer to 7a.	CAR22 to CAR24 CAR31 to CAR35 CAR37 CL14 to CL18	OK
g. Have all relevant parameters been monitored as indicated in the table of the methodology? State any deviations/omissions.	AMS	I.D	Yes.	OK	OK
h. Has the CO2 emission factor of the grid electricity measured either by Combined Margin or by the Weighted Average emission?	AMS	I.D	Yes.	OK	OK
i. Has the CO2 emission factor of fossil fuel type i measured as per the "Tool to calculate project or leakage CO2 emissions from fossil fuel combustion."	AMS	I.D	Yes.	OK	OK
j. Has the Net calorific value of fossil fuel type i measured as per the "Tool to calculate project or a leakage CO2 emissions from fossil fuel	AMS	I.D	Yes.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
combustion".					
k. Has the Quantity of fossil fuel consumed in year y measured as per the "Tool to calculate project or a leakage CO2 emissions from fossil fuel combustion".	AMS	I.D	Yes.	OK	OK
l. Has the Quantity of net electricity supplied to the grid in year y measured using energy meters.	AMS	I.D	Yes.	OK	OK
m. Is the quantity of net electricity supplied to the grid in year y monitored/recorded - Continuous monitoring, hourly measurement and at least monthly recording? Notes on measurement method: - Calibration should be undertaken as prescribed in the relevant paragraph of General Guidelines to SSC Methodologies. - If applicable, measurement results shall be cross checked with records for sold/purchased electricity (e.g., invoices/receipts) - The net electricity export/supplied to a grid is the difference between the measured quantities of the grid electricity export and the import. If applicable, cross check net electricity supplied to a grid as gross energy generation in the project activity power plant minus the auxiliary/station electricity consumption, technical losses and electricity import from the grid to the project power plant measured at the grid	AMS	I.D	Yes.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
interface/connection used for billing purposes					
n. Is the Quantity of biomass consumed in year y monitored/recorded Continuously or estimate using annual energy/mass balance? Notes on measurement method: - Use mass or volume based measurements. - Adjust for the moisture content in order to determine the quantity of dry biomass. - And/or perform an annual energy/mass balance that is based on purchased quantities and stock. - For projects consuming biomass and fossil fuel to produce electricity, a specific energy consumption11 of each type of fuel (biomass or fossil) to be used should be specified ex ante. The consumption of each type of fuel (biomass or fossil)shall be monitored. If fossil fuel is used, the electricity generation metered should be adjusted by deducting the electricity generation from fossil fuels using the specific energy consumption and the quantity of fossil fuel consumed The amount of electricity generated using biomass fuels calculated then shall be compared with the amount of electricity generated calculated using specific energy consumption and amount of each type of biomass fuel used. The lower of the two values should be used to calculate emission reductions	AMS	I.D	n.a.	ok	ok

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
o. Is the Moisture content of the biomass residues monitored atleast on a monthly basis?	AMS	I.D	n.a.	ok	ok
p. Is the weighted average of the moisture content calculated for each monitoring period and used in the calculations? Notes on measurement method: On-site measurements In case of dry biomass, monitoring of this parameter is not necessary	AMS	I.D	n.a.	ok	ok
q. Is Net calorific value of biomass residue type k monitored annually? Notes on measurement method: Measurement in laboratories according to relevant national/international standards. Measure the NCV based on dry biomass. Check the consistency of the measurements by comparing the measurement results with measurements from previous years, relevant data sources (e.g. values in the literature, values used in the national GHG inventory) and default values by the IPCC. If the measurement results differ significantly from previous measurements or other relevant data sources, conduct additional measurements	AMS	I.D	n.a.	ok	ok
r. Is the Standard deviation of the annual average historical net electricity generation delivered to	AMS	I.D	n.a.	ok	ok

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the grid by the existing renewable energy plant that was operated at the project site prior to the implementation of the project activity calculated from data used to establish Eghistorical?					
s. Is the parameters relevant to reservoir based hydro and geothermal plants monitored following the most recent version of ACM0002?	AMS	I.D	Yes.	OK	OK
t. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVM	123	Refer to 7a.	CAR22 to CAR24 CAR31 to CAR35 CAR37 CL14 to CL18	OK
u. Does the monitoring plan provide details regarding calibration of monitoring equipments/ instruments or does it include zero check as a substitute for calibration? (zero check can not be considered as a substitute for calibration).	EB 24	37			
v. Are the following means of implementation of the	VVM	123	Refer to 7a.	CAR22	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified:				to CAR24 CAR31 to CAR35 CAR37 CL14 to CL18	
i. data management procedures?	VVM	123	Refer to 7a.	CAR22 to CAR24 CAR31 to CAR35 CAR37 CL14 to	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
				CL18	

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. quality assurance procedures?	VVM	123	Refer to 7a.	CAR22 to CAR24 CAR31 to CAR35 CAR37 CL14 to CL18	OK
iii. quality control procedures?	VVM	123	Refer to 7a.	CAR22 to CAR24 CAR31 to CAR35 CAR37	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
				CL14 to CL18	

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
8. Sustainable development					
a. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	125	Yes.	OK	OK
b. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVM	126	Yes.	OK	OK
9. Local stakeholder consultation					
a. Were local stakeholders (public, including individuals, groups or communities affected, of likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity) invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website?	VVM	128	N/A	-	-
b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	N/A	-	-
c. Is the summary of the comments received as provided in the PDD complete?	VVM	129	N/A	-	-
d. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	129	N/A	-	-
10. Environmental impacts					
a. Have the project participants submitted documentation on the analysis of the	VVM	131	Not applicable for the renewal of the crediting	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
environmental impacts of the project activity?			period, since at this time, the plant is already operating, as authorized by the environmental operational licenses of the plant (LO 3194/2009-DL, valid until 28/06/2013) and of its transmission line (LO 2726/2008-DL, valid until 27/05/2012). Such environmental operational licenses are only granted once the organisation has successfully gone through the previous steps an assessment and analysis of the environmental impacts.		
b. Have the project participants undertaken an analysis of environmental impacts?	VVM	132	Refer to 10a.	OK	OK
c. Does the host Party require an environmental impact assessment?	VVM	132	Refer to 10a.	OK	OK
d. If yes, have the project participants undertaken an environmental impact assessment?	VVM	132	Refer to 10a.	OK	OK

Table 2 Specific validation activities

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
1. Project design of small-scale clean development mechanism project activities *(delete this table if the project activity is not a small scale project activity)*					
a. Does the proposed small-scale project activity meet the requirements of the simplified modalities and procedures for small-scale CDM project activities?	VVM	135	Yes.	OK	OK
b. Does the project activity qualify within the thresholds of the three prossble types of small scale project activities? [Type (i) project activities: renewable energy project activities with a maximum output capacity equivalent to up to 15 megawatts; Type (ii) project activities: energy efficiency improvement project activities which reduce energy consumption, on the supply and/or demand side, by up to the equivalent of 15 gigawatt hours per year; Type (iii) project activities: other project activities that both reduce anthropogenic emissions by sources and directly emit less than 15 kilotonnesof carbon dixide equivalent annually.]	VVM	136	Yes. The small-scale project activity whose crediting period is being renewed is a Type (i) project activities: renewable energy project activities with a maximum output capacity equivalent to up to 15 megawatts.	OK	OK
c. Does the project activity conform to one of the approved small-scale categories?	VVM	136	Yes. Type I – Renewable energy projects, Category I.D. – Grid connected renewable electricity generation.	OK	OK
d. Does the project activity apply the relevant tool and methodology?	VVM	136	Refer to (5.b.g) above	-	-
e. Are the small-scale methodologies applied in conjunction with the general guidance to the	VVM	136	Yes.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
methodologies, which provides guidance on equipment capactiy, equipment performance, sampling and other monitoring-related issues?					
f. Is the project activity a debundled component of a large-scale project, i.e., is there a registered small-scael CDM project activity or an application to register another CDM project actifity: (a) with the same project participants; (b) in the same project category and technology/measure; and (c) registered within the previous 2 years; and (d) whose project boundary is within 1 km of the proposed boudary of the proposed small-scale activity at the closest point?	VVM	136	Refer to CAR06, CAR07 and CL04.	CAR06 CAR07 CL04	OK
g. Is and assessment of the environmental impacts of the proposed CDM project activity required by the host Party?	VVM	136	6.c	-	-
h. Is the project additional?	VVM	137	Refer to 6.c above	-	-

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Technology/measure					
1.1. Does the project comprise renewable energy technologies that supply electricity to a grid?	-		Yes. The project comprises hydro energy generation units that supply electricity to an electricity distribution system, that would have been supplied by at least one fossil fuel fired generation unit.	OK	OK
2. Boundary					
2.1. Does the project boundary encompass the physical, geographical site of the renewable generation source?	-		Refer to CL05 and CL06.	CL05 CL06	OK
3. Baseline					
3.1. Did the project participants identify the most plausible baseline scenario among all realistic and credible alternatives(s)?	-		Yes. The baseline of the project related to the generation of renewable energy connected to the grid is the KWh produced by the renewable generating unit multiplied by an emission coefficient (measured in tones of CO2e/KWh) calculated in a transparent and conservative manner, according to a combined margin (CM), resulting from the combination of operating margin (OM) and build margin (BM),	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			according to the procedures prescribed in the "Tool to calculate the emission factor for an electricity system". $BE_y = EG_{BL,y} \times EF_{CO2,grid,y}$		
3.2. Were the emission reductions calculations based on data from an official source and made publicly available?			Yes. The emission reductions of the project are calculated based in the operating margin emission factor and the build margin emission factor, supplied by the Brazilian DNA - Designated National Authority.	OK	OK
4. Monitoring					
4.1. Does the monitoring consist of metering the quantity of electricity generated?	-		Yes. Based on the Methodology AMS I.D, the monitoring consists of metering the amount of electricity supplied to the grid by the project activity.	OK	OK

Table 4 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion

CAR01: PDD version 1, Annex 1, does not list information for PPs The Chugoku Electric Power Co., Inc. and Constellation Energy Commodities Group Inc.	VVM 52	The information about the PPs Chugoku Electric Power Co., Inc. and Constellation Energy Commodities Group Inc. were included in the Annex 1 according to the Modalities of Communication available in the UNFCCC website. Please refer to the second version of the PDD Second response: The only change in the Modalities of Communication dated on 03/08/2007 was the contact person. However, the information presented in the Annex 1 of the PDD was corrected. Please refer to the third version of the PDD. Third response: The name of PP Constellation Energy Commodities Group Inc. was corrected in Annex 1. Please refer to the fourth version of the PDD.	First analysis: PDD Version 02, Annex 1, lists The Chugoku Electric Power Co., Inc. and Constellation Energy Commodities Group Inc. However, Chugoku's information is in accordance with communication dated 15/01/2007, whereas it has been updated in 03/08/2007. *CAR01 is not closed.* Second analysis: PDD version 3, Annex 1, has been updated. However, the name of PP Constellation Energy Commodities Group Inc. included in Annex 1 is not correct yet. **CAR01 is not closed.** Third analysis: The name of PP Constellation Energy Commodities Group Inc. has been corrected. This CAR is closed.

CAR02: PDD version 01, Section A.2, does not explain the technology being employed.	EB 34 Ann 09	This information was included in the Section A.2. Please refer to the second version of the PDD. Second response: The third paragraph in section A.2 was corrected. Please refer to the third version of the PDD.	First analysis: PDD Version 02, Section A.2, third paragraph, makes reference to A.2, whereas A.4.2 is likely to be the correct section to be referenced. *CAR02 is not closed.* Second analysis: The reference to Section A.4.2 has been corrected. **CAR02 is closed.**
CAR03: PDD version 01, Section A.4.1.4, mentions ANEEL's Resolution 180/2000 as being from 2008, whereas it is from 2000.	EB 34 Ann 09	The date of the ANEEL's resolution was corrected. Please refer to the second version of the PDD;	The identification of ANEEL's Resolution 180/2000 has been corrected. **CAR03 is closed.**

CAR04: PDD version 01, Section A.4.3, presents the estimated amount of emission reductions in a tabular format with some differences compared to the Guidelines for CDM-SSC-PDD.	EB 34 Ann 09	The table 3 was corrected according to the Guidelines for CDM-SSC-PDD. Please refer to the second version of the PDD. Second response: The tabular format of the estimated amount of emission reductions has been adjusted to be in accordance with the Guidelines for CDM-SSC-PDD. Please refer to the third version of the PDD.	First analysis: The tabular format of the estimated amount of emission reductions has been adjusted to be in accordance with the Guidelines for CDM-SSC-PDD. However, the '*' and '**" information is not relevant. The use of '*' and '**' also occurs in CERs spreadsheets version 02, <Table 3 – Baseline>. *CAR04 is not closed.* Second analysis: The use of "*" and "**" was disregarded in the PDD version 03 and in CERs spreadsheet version 03, <Table 3 – Baseline>. **CAR04 is closed.**
CAR05: PDD version 01, Section A.4.3, incorrectly refers to sections B.1 and B.3.	EB 34 Ann 09	The referenced section has been corrected. Please refer to the second version of the PDD.	Incorrect reference to sections B.1 and B.3 has been corrected. **CAR05 is closed.**
CAR06: PDD version 01, Section A.4.5, does not indicate whether there is a registered SSC project activity under the CDM or an application to register another SSC project activity under the CDM with the same project participants.	EB 34 Ann 09	This information was included in the Section A.4.5. Please refer to the second version of the PDD.	PDD Version 02, Section A.4.5, indicates that the project activity does not meet the criteria to be deemed a debundled component of a large project activity. **CAR06 is closed.**

CAR07: PDD version 01, Section A.4.5, does not indicate whether there is a registered SSC project activity under the CDM or an application to register another SSC project activity under the CDM registered within the previous 2 years.	EB 34 Ann 09	As mentioned in the CAR 06 above, this information was included in the Section A.4.5. Please refer to the second version of the PDD.	PDD Version 02, Section A.4.5, indicates that the project activity does not meet the criteria to be deemed a debundled component of a large project activity. **CAR07 is closed.**
CAR08: PDD version 01, Section B.2, does not demonstrate that the project activity will remain under the limit of SSC project activity Type I during every year of the crediting period.	EB 34 Ann 09	As mentioned in the Section B.2 of the PDD "*The project activity comprises the implementation of a small-hydro power plant connected to the grid with maximum output capacity of 9.2 MW, and which will not increase beyond 15 MW*".	PDD Version 02, Section B.2, states the output capacity of the hydro power plant will not increase beyond 15 MW. **CAR08 is closed.**
CAR09: PDD version 01, Section B.4, presents a title which is different from the Guidelines for CDM-SSC-PDD.	EB 34 Ann 09	The title of the Section B.4 was corrected. Please refer to the second version of the PDD.	PDD Version 02 presents the correct title for Section B.4 **CAR09 is closed.**
CAR10: PDD version 01, Section B.4, does not specify the baseline as stated in AMS-I.D. ver 16. Besides, currently, there is a national interconnected grid and not an isolated South-Southeast-Midwest grid anymore. Correct all parts of PDD, accordingly.	EB 34 Ann 09	The baseline was included according to the methodology AMS-I.D (version 16). In addition, the Brazilian interconnected grid was corrected. Please refer to the second version of the PDD.	The baseline, as stated in AMS-I.D. ver 16, has been included in PDD Version 02, Section B.4. Grid identification has also been corrected. **CAR10 is closed.**

CAR11: PDD version 01 does not mention the operation of 332 kW generating unit, which is operating in the project activity and generating electricity to the grid. This 3rd unit is not covered by any ANEEL's authorizations.	EB 34 Ann 09	The description of the small turbine was included in the Section A.4.2. Project Participants clarify that the project was designed considering this small turbine. Please refer to the Project Design (from the Portuguese "*Projeto Básico*") – Chapters 4 and 6. This Project Design was approved by the Brazilian Power Regulatory Agency (from the Portuguese *Agência Nacional de Energia Elétrica – ANEEL*). Project Design and ANEEL's approval is attached to this response. Second response: - The description of the submerged turbine was corrected; - The manufacturer of the submerged turbine was corrected; - In fact, Chapter 4 of the Project Design does not mention the small turbine. However, this chapter shows the river flow studies used in Chapter 6, which is mentioned the small turbine. The river flow calculation present in Chapter 4 is important to determine the capacity of the equipment. - As mentioned above, the Chapter 4 presents the river flow studies in the Guarita River. According with these studies, the project owner can dimension the capacity of the plant. As presented in Chapter 6, the river flow available at the point where the small turbine is installed,	First analysis: PDD Version 02, Section A.4.2, mentions the 332 kW generating unit. However: - A "submerged synchronous turbine" is mentioned, while the data book of the third generating unit states there is an induction generator, which is asynchronous; - WEG is mentioned as one of the manufacturers, while the data book only shows Rischbieter Engenharia; - PPs refer to Chapter 4 of the project design of the hydro power plant, whereas such chapter does not address the "small" turbine; - Chapter 6 refers to a 0.222 MW turbine, instead of to a 0.332 MW one; and - ANEEL's approval to which PPs refer does not make it clear such 332 kW generating unit has been approved. Further detailed explanation is required. Additionally, CERs spreadsheets version 02, <Table 2 – Project Description>, does not specify the generator of the 332 kW generating unit. *CAR11 is not closed.*

		defines an installed capacity of 0.222 MW. For this reason, the TAG of the small turbine was corrected to reflect the real power of the equipment, according to net head and river flow. As can be seen in the document "Justificativa potência_2011.03.03.pdf" attached to this response, considering these two variables and their values present at the dam, the turbine capacity is equal to 0.2 MW. For this reason, the value presented in the Section A.4.2 was corrected. Please refer to the third version of the PDD. - In fact, the ANEEL resolution does not mention the smaller turbine. As mentioned above, Project Participants clarify that the project was designed considering this small turbine and was presented to ANEEL. However, BT Geradora de Energia Elétrica S.A. requests to ANEEL the correction of the resolution. The letter with the request for correction of the resolution was registered in ANEEL on April 5th, 2011. Please refer to the letter attached to this response. In addition, the smaller turbine description was included in the CERs spreadsheet. Please refer to the third version of the PDD and spreadsheets.	<u>Second analysis:</u> In PDD Version 03, Section A.4.2: - The description of the submerged turbine has been corrected. - The manufacturer of the submerged turbine has been corrected. - Reference to Chapter 4 has been clarified. - Reference to 0.222 MW in Chapter 6 has been clarified. - PPs have presented a letter sent to ANEEL, requesting the update of its approval on the number of generating unit. CERs spreadsheets version 03, <Table 2 – Project Description>, has been specified the generator of the 332 kW generating unit. **CAR11 is closed.**

CAR12: PDD version 01, Section B.4, Step 2, states there is no need to update the current baseline, whereas due to an installed capacity which is not valid anymore, compared to the registered PDD, "the current baseline needs to be updated for the subsequent crediting period", as per EB 46 Annex 11. - Previous installed capacity, as per registered PDD: 9.2 MW - Current installed capacity, as verified during site visit: 9.67 MW (= 2x 4,669 kW + 332 kW)	EB 34 Ann 09	According to the Step 2 presented in the Procedures for Renewal of the Crediting Period of a Registered CDM Project Activity (version 5), "*This step is only applicable if any of the Steps 1.1, 1.2, 1.3 and/or 1.4 showed that the current baseline needs to be updated*". As can be seen in the PDD, there are no new relevant national and/or sectoral policies and/or circumstances in the electricity generation sector applicable to the project activity since the project starting date. In addition, small hydropower plants still represent less than 3% of the Brazilian electric matrix and remaining technical lifetime of the equipment is not less than the end of the crediting period. Therefore, the baseline scenario is still valid in this renewal of the crediting period. However, the estimated emission reductions were updated considering the CO_2 emission factor published by the Brazilian DNA. Please refer to the new version of the PDD (version 2). PPs clarify that the installed capacity of the project does not affect the baseline or the emission reduction calculation, since the estimated emission reductions presented in the registered PDD (first crediting period) were calculated based on the energy assured of the project.	Clarification by the PPs has been accepted as well as PDD revised due to the notification presents correct turbines capacity. **CAR12 is closed.**

		Therefore, no alterations were needed in the electricity generation of the project.	
CAR13: PDD version 01, Section B.4, Figure 4, presents an "Avarege growth" with part of the information in Portuguese: values in "MW a.a.".	EB 34 Ann 09	The figure was corrected. Please refer to the second version of the PDD. Second response: The figure was correct. Please refer to the third version of the PDD.	First analysis: Expression "a.a.", in Portuguese, has been replaced by its English equivalent. However, the word "avarege" is still incorrect. *CAR13 is not closed.* Second analysis: The word "avarege" has been corrected. **CAR13 is closed.**

CAR14: PDD version 01, Section B.4, does not illustrate in a transparent manner all data used to determine the baseline emissions.	EB 34 Ann 09	The baseline emissions are described in the section B.6. “Emission reductions”. Second response: The main parameters used to determine the baseline emissions were included in section B.4 as per the Guidelines for CDM-SSC-PDD. In addition, a reference to the section B.6.1, where is presented all the data and parameters used to determine the baseline emissions, was included. Please refer to third version of the PDD.	First analysis: The following requirement, for B.4, from the Guidelines for CDM-SSC-PDD, has not been met yet: “Illustrate in a transparent manner all data used to determine the baseline emissions (variables, parameters, data sources etc.)”. *CAR14 is not closed.* Second analysis: All data used to determine the baseline emissions has been illustrated in a transparent manner. **CAR14 is closed.**

CAR15: PDD version 01, Section B.6.1, refers to an incorrect version (number 15) of methodologies ACM0002 and AMS-I.D.	EB 34 Ann 09	The version of the methodologies ACM0002 and AMS-I.D. were corrected. Please refer to the second version of the PDD. Second response: The version of the methodology ACM0002 was corrected for the most recent version available (12.2.0). In addition, the versions of AMS-I.D. (version 17) and the Tool to calculate the emission factor for an electricity system (2.2.1) were updated. Please refer to the third version of the PDD.	First analysis: PDD Version 02, Section B.6.1, refers to the latest approved versions of ACM0002 and AMS-I.D. However, at the time of submission of PDD Version 01 to the DOE, the previous version (11) of ACM0002 was the valid one. *CAR15 is not closed.* Second analysis: In PDD Version 03, Section B.6.1, the version of ACM0002, AMS-I.D and Tool to calculate the emission factor for an electricity system has been updated. **CAR15 is closed.**

CAR16: PDD version 01, Section B.6.1, mentions "paragraph 14", whereas "19" is the correct one.	EB 34 Ann 09	The mention in the Section B.6.1 was corrected. Please refer to the second version of the PDD. Second response: In the new version of the AMS-I.D. methodology is "paragraph 20". For this sense, the CERs spreadsheet and PDD were revised. Please refer to the third version of the documents.	First analysis: PDD Version 02, Section B.6.1, correctly refers to paragraph 19 of AMS-I.D. ver 16. However, CERs spreadsheets version 02, <Table 4 – Project Emission>, Line 4, still mentions incorrect paragraph. *CAR16 is not closed.* Second analysis: The mention of paragraph has been corrected. **CAR16 is closed.**
CAR17: PDD version 01, Section B.6.1, in steps 5 and 6, under "Baseline Emissions", presents a second sentence which is not in accordance with the "Tool to calculate the emission factor for an electricity system" version 02 (see Option 1, page 15).	EB 34 Ann 09	Steps 5 and 6 were corrected. Please refer to the new version of the PDD (version 2).	Incorrect sentences have been corrected in PDD Version 02, Section B.6.1. **CAR17 is closed.**

CAR18: PDD version 01, Section B.6.1, presents data units for BE_y, $PE_{GP,y}$, $PE_{HP,y}$, ER_y, PE_y and LE_y which are different from what is established by AMS-I.D. ver 16.	EB 34 Ann 09	The data units present in the Section B.6.1 was corrected. Please refer to the second version of the PDD. Second response: CERs spreadsheet was revised. Please refer to the third version of the CERs spreadsheet.	First analysis: PDD Version 02, Section B.6.1, presents correct data units for BE_y, $PE_{GP,y}$, $PE_{HP,y}$, ER_y, PE_y and LE_y. However, CERs spreadsheets version 02 still needs to be aligned with PDD Version 02. *CAR18 is not closed.* Second analysis: The Section B.6.1 of PDD and CERs spreadsheets has been corrected. **CAR18 is closed.**
CAR19: PDD version 01, Section B.6.1, identifies emission factors with incomplete subscripts.	EB 34 Ann 09	The subscripts were corrected according to AMS-I.D. Please refer to the second version of the PDD. Second response: The subscripts were corrected. Please refer to the third version of the PDD.	First analysis: Please, refer to Equation 14 of the Tool to calculate the emission factor for an electricity system version 02. *CAR19 is not closed.* Second analysis: The subscripts of emission factors in the PDD, Section B.6.1, have been completed. **CAR19 is closed.**

CAR20: PDD version 01, Section B.6.1, for the calculation of $EF_{CO2,grid,y}$, does not explain nor justifies the choice between options 12(a) and 12(b) of AMS-I.D. ver 16.	EB 34 Ann 09	This information was included in the Section B.6.1 of the PDD. Please refer to the second version of the PDD. Second response: The section B.6.1 of the PDD was updated considering the new version of the Tool to calculate the emission factor for an electricity system (version 2.2.1). It's important to mention that with the revision of this tool, the ex-ante option for the emission factor was chosen. All the rationale is presented in the sections B.6.1 and B.6.3 of the PDD (version 3).	First analysis: PDD Version 02, Section B.6.1, states option 12(a) has been chosen to calculate the emission factor. However, it does not yet explain nor justifies such choice. *CAR20 is not closed.* Second analysis: PDD Version 3, Section B.6.1, has been justified the choice of option. **CAR20 is closed.**

CAR21: PDD version 01, Section B.6.1, does not mention that in terms of vintage data, Option 1 had been chosen for the first crediting period, which reflects in the second one, as per the "Tool to calculate the emission factor for an electricity system" version 02.	EB 34 Ann 09	The PDD was reviewed (version 2) considering the Options available in step 5 of the "Tool to calculate the emission factor for an electricity system". Second response: Option 1 is mentioned in the Section B.6.1 of the PDD as the chosen one. In addition, as mentioned above, the emission factor was update considering the revision in the tool to calculate de emission factor. Please refer to the third version of the PDD.	First analysis: PDD Version 02, Section B.6.1, does not yet mention that in terms of vintage data, Option 1 had been chosen for the first crediting period (refer to p.15 of version 02 of the Tool to calculate the emission factor for an electricity system). *CAR21 is not closed.* Second analysis: PDD Version 3, Section B.6.1, has been mentioned that in terms of vintage data, Option 1 had been chosen. **CAR21 is closed.**

CAR22: PDD version 01, Section B.6.2, presents parameters relevant to reservoir based hydro plants not included in Table 1 of AMS-I.D. ver 16 that, for this reason, shall be monitored following ACM0002 version 11, which shows A_{PJ} and Cap_{PJ} as data/parameters to be monitored.	EB 34 Ann 09	The parameter was included in the section B.7.1 according to ACM0002 (version 12). Please refer to the second version of the PDD. Second response: The versions of the methodologies were updated. The other corrections were made, as follow: - The values applied to A_{PJ} and CAP_{PJ} were corrected according to the international standard format; - The value of A_{PJ} was revised; - Reservoir area was removed from section B.6.2; - The data units were corrected in the CERs spreadsheet. Please refer to the third version of the PDD and CERs spreadsheet.	First analysis: PPs refer to ACM0002 Version 12, which was not the latest version at the time of submission of PDD Version 01 to the DOE. PDD Version 02, Section B.7.1, includes A_{PJ} and Cap_{PJ} as "data and parameters monitored". However: - "values applied" are not in accordance with the international standard format; - value of A_{PJ} needs to be revised, as per CAR23; - "Reservoir Area" must be removed from B.6.2; and - Cap_{PJ} and A_{PJ} data unit must be corrected in CERs spreadsheets version 02. *CAR22 is not closed.* Second analysis: PDD Version 3, Section B.7.1 has been corrected as follow: - "values applied" are in accordance with the international standard format; - value of A_{PJ} was revised; - "reservoir area" was removed from B.6.2. - CERs spreadsheets version 3 has been corrected. **CAR22 is closed.**

CAR23: PDD version 01, Section B.6.2, presents a rounded number for A_{PJ} (reservoir area), whereas the exact same number, as shown in the environmental operational license LO 3194/2009-DL, shall be used in all sections of the PDD.	EB 34 Ann 09	The reservoir area was corrected according to environmental license. Please refer to the second version of the PDD. Second response: The corrections were made. Please, refer to the third version of the PDD.	First analysis: Not all corrections of A_{PJ} value have been made yet. *CAR23 is not closed.* Second analysis: All corrections of A_{PJ} value have been made. **CAR23 is closed.**
CAR24: PDD version 01, Section B.6.2, does not justify the choice of the source of data for the installed capacity.	EB 34 Ann 09	This information was included. Please refer to the second version of the PDD.	PDD Version 02, Section B.6.2, justfies the choice of the source of data for the installed capacity. **CAR24 is closed.**
CAR25: PDD version 01, Section B.6.3, presents some data/parameters whose identifications are different from Section B.6.1.	EB 34 Ann 09	The parameters were corrected in the section B.6.3. Please refer to the second version of the PDD. Second response: The section B.6.3 was revised considering the new version of the "*Tool to calculate the emission factor for an electricity system*", version 2.2.1. Please refer to the third version of the PDD.	First analysis: PDD Version 02, Section B.6.3, still needs to be corrected regarding $EF_{BM,2009}$. *CAR25 is not closed.* Second analysis: PDD Version 32, Section B.6.3, has been corrected regarding $EF_{BM,2010}$. **CAR25 is closed.**

CAR26: PDD version 01, Section B.6.3, presents an incorrect power density of the plant, since its installed capacity is 9.67 MW, instead of 9.2 MW, as verified during the site visit.	EB 34 Ann 09	The power density was corrected according the installed capacity of equipments. Please refer to the second version of the PDD and CER spreadsheet. Second response: CERs spreadsheet was corrected. Please refer to the third version of the CERs spreadsheet. Third response: The data unit was corrected. Please refer to the fourth version of the spreadsheet.	First analysis: PDD Version 02 has been revised. However, CERs spreadsheets version 02 still needs correction. *CAR26 is not closed.* Second analysis: CERs spreadsheets version 03 has been revised. However, the data unit regarding Nominal Power of generators still need to be corrected. **CAR26 is not closed.** Third analysis: Data unit regarding Nominal Power of generators has been corrected. The CAR is closed.

CAR27: PDD version 01, Section B.6.3, presents a sentence, under “Emission Reductions”, with an expression in Portuguese.	EB 34 Ann 09	Please, revise the CAR. No expression in Portuguese is present in the section B.6.3 (under “Emissions Reductions”).	PDD Version 01, Section B.6.3, presented as last sentence of the section “When applying the results presented above in **Erro! Fonte de referência não encontrada.**7 of section B.6.1 we have:”. Such sentence, in PDD Version 02, Section B.6.3, is correct. **CAR27 is closed.**
CAR28: PDD version 01, Section B.6.3, presents incorrect data unit for ER_y.	EB 34 Ann 09	The data unit was corrected. Please refer to the second version of the PDD.	PDD version 02, Section B.6.3, presents correct data unit for ER_y. **CAR28 is closed.**

CAR29: PDD version 01, Annex 3, presents two web links that lead to information in Portuguese, whereas direct links to information in English are available at the Brazilian DNA's web site.	EB 34 Ann 09	The Project Participants would like to stress that anyone can change the language on the Brazilian DNA website. Anyway, the Annex 3 of the PDD and the CER calculation spreadsheet were revised. Please refer to the second version of the documents. Second response: Considering the new version of the "*Tool to calculate the emission factor for an electricity system*", version 2.2.1, and the change in the emission factor, the link was removed and the reference to the sections B.6.1. and B.6.3 was included. Please refer to the third version of the PDD.	First analysis: PDD Version 02, Annex 03, presents two web links that lead to information in English. However, second link needs correction, as it is a duplication of the first one. *CAR29 is not closed.* Second analysis: PDD Version 03, Annex 03, has been corrected. **CAR29 is closed.**
CAR30: PDD version 01, Section B.6.4, presents a table title with an incorrect unit and Table 4 with data/parameters' units not in accordance with the Guidelines for CDM-SSC-PDD. Besides, the '*' and '**' information is not relevant.	EB 34 Ann 09	The unit was corrected and the data/parameters' units were corrected according to the Guidelines for CDM-SSC-PDD. In addition, the '*' and '**' was excluded. Please refer to the second version of the PDD.	PDD Version 02, Section B.6.4, presents the correct tabular format. **CAR30 is closed.**

CAR31: PDD version 01, Section B.7.1, uses a tabular format which is not in accordance with AMS-I.D. ver 16.	EB 34 Ann 09	The tabular format is in accordance with the AMS-I.D (version 16) and the Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD), version 05. Second response: The tabular format presented in the Section B.7.1 was corrected. Please refer to the third version of the PDD.	First analysis: The table shown in the Guidelines for CDM-SSC-PDD are to be followed in case the relevant methodologies do not specify any tabular format for monitored data/parameters. As AMS-I.D. Version 16 and ACM0002 Version 11 present data and parameters to be monitored in specific tabular formats, such formats are to be used. *CAR31 is not closed.* Second analysis: PDD version 03, Section B.7.1, has been corrected. **CAR31 is closed.**
CAR32: PDD version 01, Section B.7.1, uses an identification for "Quantity of net electricity supplied to the grid in year y" which is not in accordance with Table 1 of AMS-I.D. ver 16.	EB 34 Ann 09	The parameter was corrected according to AMS-I.D (version 16). Please refer to the second version of the PDD.	PDD Version 02, Section B.7.1, presents a correct identification for "Quantity of net electricity supplied to the grid in year y". **CAR32 is closed.**

CAR33: PDD version 01, Section B.7.1, does not mention that a continuous monitoring of $EG_{facility,y}$ is required, as per AMS-I.D. ver 16.	EB 34 Ann 09	This information is already present in the Section B.7.1. The $EG_{facility,y}$ will be monitored through the hourly measurement and monthly recording. Second response: The parameter was corrected. Please refer to the third version of the PDD.	First analysis: PDD Version 02, Section B.7.1, does not yet mention that a continuous monitoring of $EG_{facility,y}$ is required (refer to AMS-I.D. Version 16, Table 1, "monitoring/recording frequency" column. *CAR33 is not closed.* Second analysis: PDD Version 03, Section B.7.1, has been corrected. **CAR33 is closed.**
CAR34: PDD version 01, Section B.7.2, refers to monitoring plan procedures in paragraph 17 of AMS-I.D. ver 16, whereas such paragraph relates to lifetime requirements.	EB 34 Ann 09	The paragraph was corrected. Please refer to the second version of the PDD.	PDD Version 02, Section B.7.2, does not refer anymore to incorrect paragraph. **CAR34 is closed.**
CAR35: PDD version 01, Section B.7.2, refers to EG_y, whereas $EG_{facility,y}$ is the correct identification as per AMS-I.D. ver 16.	EB 34 Ann 09	The parameter was corrected. Please refer to the second version of the PDD.	PDD Version 02, Section B.7.2, correctly refers to $EG_{facility,y}$. **CAR35 is closed.**

CAR36: There is a discrepant backup energy meter serial number (90001669) shown on calibration certificate CCL 050/10, compared to the serial number 90001696, which needs to be confirmed based on the response to CL21.	EB 34 Ann 09	The serial number present in the calibration certificate was correct by the responsible for the calibration (LACTEC – *Instituto de Tecnologia para Desenvolvimento*). In addition, as seen during the site visit, the calibration seal present in the backup meter corresponds to the same certificate (CCL 050/10). Please refer to calibration certificate CCL 050/10 (A) attached to this response.	The serial number of the backup energy meter, on calibration certificate CCL 050/10, has been corrected by LACTEC, the laboratory that carried out the calibration. A revised certificate has been issued: CCL 050/10 (A). **CAR36 is closed.**

CAR37: PDD version 01, Section B.7.2, establishes storage requirements of monitored data not in accordance with the Guidelines for CDM-SSC-PDD.	EB 34 Ann 09	Monitoring frequency of the "quantity of net electricity supplied to the grid" parameter was corrected in the new version of the PDD (version 2). In addition, as already presented in the PDD, "*data monitored and required for verification and issuance will be kept for two years after the end of the crediting period*". Please, refer to section B.7.2 of the PDD. Second response: The last paragraph of the section B.7.2 was corrected in accordance with CDM-SSC-PDD. Please refer to the third version of the PDD	First analysis: As per the Guidelines for CDM-SSC-PDD Version 05, Section B.7, "[...] data monitored and required for verification and issuance are to be kept for a minimum of two years after the end of the crediting period **or the last issuance of CERs for this project activity, whichever occurs later**". So the storage requirements in last paragraph of PDD Version 02, Section B.7.2, are not yet in accordance with the guidelines above. *CAR37 is not closed.* Second analysis: The storage requirements in last paragraph of PDD Version 03, Section B.7.2, have been corrected. **CAR37 is closed.**

CAR38: PDD version 01, Section B.8, does not indicate whether "Comissão Interministerial de Mudança Global do Clima" is a project participant listed in Annex 1.	EB 34 Ann 09	As mentioned in the Section B.8 of the PDD, "*Comissão Interministerial de Mudança Global do Clima*" is the Brazilian DNA and the responsible for determining the baseline emission factor. However, to avert mistakes, PPs decides to withdraw this entity. Please refer to the second version of the PDD.	PDD Version 02, Section B.8, does not mention "Comissão Interministerial de Mudança Global do Clima" anymore. **CAR38 is closed.**

CAR39: PDD version 01, Section C.2, does not state that the project activity uses a renewable crediting period.	EB 34 Ann 09	According to "Rules of procedure of the Executive Board of the clean development mechanism" – Decision 4/CMP.1, paragraph 29: "*(a) A maximum of seven years which may be renewed at most two times, provided that, for each renewal, a designated operational entity determines and informs the Executive Board that the original project baseline is still valid or has been updated taking account of new data where applicable* *(b) A maximum of 10 years with no option of renewal*". Thus, since the project has a crediting period of 7 year, means that the same uses a renewable crediting period. Second response: This information was included in the section C.2. Please refer to the third version of the PDD.	First analysis: As per the Guidelines for CDM-SSC-PDD Version 05, Section C.2, the PPs are required to "state whether the project activity will use a renewable or a fixed crediting period [...]". PDD Version 02, Section C.2, does not yet state the project activity is using a renewable crediting period. *CAR39 is not closed.* Second analysis: PDD Version 03, Section C.2, has been corrected. **CAR39 is closed.**
CAR40: PDD version 01, sections C.2.1.1 and C.2.1.2, mention "first" crediting period in the sections' titles, whereas "second" is the correct period.	EB 34 Ann 09	The sections were corrected. Please refer to the second version of the PDD.	PDD Version 02, sections C.2.1.1 and C.2.1.2, mention the second crediting period. **CAR40 is closed.**

CAR41: PDD version 01, Section D.1, presents an incorrect month for the date of ANEEL's Resolution 180/2000.	EB 34 Ann 09	The month for the date of ANEEL's Resolutions was corrected. Please refer to the second version of the PDD.	PDD Version 02, Section D.1, presents the correct date for ANEEL's Resolution 180/2000. **CAR41 is closed.**
CAR42: PDD version 01, Section D.2, presents a statement that is not part of ANEEL's Resolution 652/2003 ("[…] if the area is between 3 km^2 and 13 km^2, it should have a minimum environmental impact.").	EB 34 Ann 09	The paragraph was revised. Please refer to the second version of the PDD.	PDD Version 02, Section D.2, presents a text which is in accordance with ANEEL's Resolution 652/2003. **CAR42 is closed.**
CAR43: PDD version 01, Annex 1, presents an incomplete title, compared to the Guidelines for CDM-SSC-PDD.	EB 34 Ann 09	The title present in the Annex 1 of the PDD is the same that specified in the Guidelines for CDM-SSC-PDD.	PDD Version 02, Annex 1, presents a title which is in accordance with p.16 of the Guidelines for CDM-SSC-PDD. So, **CAR43 is closed.** Note: p.6 of such guidelines presents a title for Annex 1 which includes the expression "proposed small scale".
CAR44: PDD version 01, Annex 1, does not list all organisations presented in Section A.3.	EB 34 Ann 09	The organizations were included in the Annex 1. Please refer to the second version of the PDD.	PDD Version 02, Annex 1, lists all organisations presented in Section A.3. **CAR44 is closed.**

CAR45: PDD version 01, Section A.4.2, specifies the use of two 4.5 MW turbines, instead of the two 4,669 kW ones that were found operating, during site visit.	VVM 59	In fact, there are slight differences between the nominal power of turbines presented in the previous PDD and equipment tags, probably related to roundness. However, PPs call attention to the fact that electricity generated by the project and, consequently, estimated emission reductions are based on the energy assured of the project. Therefore, this difference does not affect the baseline emission or emission reduction calculations. In addition, this slight difference does not impact additionality, methodology or scale of the project since quantity of electricity delivery to the grid did not change. Considering explanations above, the PDD was reviewed (version 2) to review the installed capacity of the project.	The PDD revised due to the notification presents correct turbines capacity. **CAR45 is closed.**

CL01: Please, clarify the difference between the Parties listed in Table 1 of PDD version 1, Section A.3, and those listed in the CDM's project web page (http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135874208.63/view).	VVM 44	The only difference between the Parties listed in the Table 1 of the PDD and the UNFCCC website is the name of Ecopart Assessoria em Negócios Empresariais Ltda. former Ecoinv Global Ltda. See the articles of association attached to this response. The Letter of Approval from United Kingdom of Great Britain and Northern Ireland concerning Ecopart Assessoria em Negócios Empresariais Ltda. was request. The necessary documentation for the inclusion of the above mentioned company as a project participant to the proposed project activity will be made available to the DOE by the time of its submission of the request for registration. Second response: The inclusion of Japan, represented by The Chugoku Electric Power, Co. Inc. and United Kingdom of Great Britain and Northern Ireland represented by Constellation Energy Commodities Group Inc. was performed after project registration regarding credit commercialization. The documents referents to inclusion of new project participants (Modalities of Communication) are public available in the project website <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135874208.63/view>.	First analysis: PPs have not explained yet the inclusion of Japan and United Kingdom of Great Britain and Northern Ireland as new Parties involved. *CL01 is not closed.* Second analysis: The difference between the Parties listed in Table 1 of PDD version 3, Section A.3, and those listed in the CDM's project web page (http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135874208.63/view) has been clarified. **CL01 is closed.**

CL02: Please explain the changes in the list of project participants, when comparing PDD version 1 with the registered one, version 2005.07.27B.	VVM 45	The other Project Participants listed in the project website was included after the registration date. It's important to mention that the entities included after the registration are the buyer of the CERs issued by the project activity. These changes can be seen in the Modalities of Comunication and Annex 2 (Add Project Participant) in the project website. Second response: The letter of approval for Ecopart Assessoria em Negócios Empresariais Ltda. is available in the Project website <http://cdm.unfccc.int/Projects/DB/TUEV-SUED1135874208.63/view>.	First analysis: PPs have explained the changes in the list of project participants. However, there is no letter of approval for Ecopart Assessoria em Negócios Empresariais Ltda, from United Kingdom of Great Britain and Northern Ireland. *CL02 is not closed.* Second analysis: The letter of approval for Ecopart Assessoria em Negócios Empresariais Ltda, from United Kingdom of Great Britain and Northern Ireland has been evidenced. **CL02 is closed.**
CL03: Please, explain the reason why the annual estimation of emission reductions in 2012 and 2016 is 5,715 tCO_2e, instead of 5,700 tCO_2e.	EB 34 Ann 09	Was considered, in the annual estimation of emission reductions, the leap year for 2012 and 2016. For this reason, the difference in comparison with the other years.	The existence of leap years in 2012 and 2016 justifies the emission reductions difference. **CL03 is closed.**

CL04: Please, adjust last paragraph of Section A.4.5, in PDD version 01, to correctly reflect the situation regarding the last criteria for determining whether a SSC project activity is a debundled component.	EB 34 Ann 09	The paragraph was corrected according to CAR 6 and CAR 7. Please refer to the second version of the PDD.	Last paragraph of Section A.4.5, PDD Version 02, has been adjusted and now indicates that the project activity does not meet the criteria to be deemed a debundled component of a large project activity. **CL04 is closed.**
CL05: Please, align project boundary definition with AMS-I.D. ver 16.	EB 34 Ann 09	The definition was corrected according to the methodology. Please refer to the second version of the PDD.	The definition of the project boundary has been aligned with AMS-I.-D. Version 16. **CL05 is closed.**
CL06: Please, adjust second paragraph of Section B.3, in PDD version 01, as it may mislead someone to understand that Guarita River is within the project boundary, which is not the case, as per the definition in AMS-I.D. ver 16.	EB 34 Ann 09	The paragraph was revised according to the methodology AMS-I.D (version 16). Please refer to the second version of the PDD.	Second paragraph of Section B.3, PDD Version 02, has been revised in order to avoid misunderstanding that Guarita River could be within the project boundary. **CL06 is closed.**

CL07: Please, explain the difference between the annual averages of energy generation used for the ex-ante estimation of emissions reductions, comparing PDD version 01 (46,954 MWh/yr) and registered PDD version 2005.07.27B (46,305 MWh/yr).	EB 34 Ann 09	The data used for annual average of energy generation in the second crediting period is based in assured energy established by ANEEL (Resolution nr. 446) multiplied by the number of total hours of operation in the year (equivalent to 8760 hours). The assured energy for the project established by ANEEL is available in the website: <http://www.aneel.gov.br/cedoc/res2003446.pdf>. Second response: The assured energy of 5.13 MW on average refers to the installed capacity of 7.5 MW. However, according to the ANEEL Resolution 446/2003, the Project Design was revised and the installed capacity of the plant was increased to 9.2 MW. Consequently, the energy assured was revised to 5.36 MW on average. According to the registered PDD the estimative for the energy generation "*...is based on the defined firm capacity of 46,305 MWh officially defined for the project*". For the second crediting period, PP's clarify that the official value of 5.36 MW on average will be used to estimate de emissions reductions.	First analysis: PPs are requested to further clarify the difference, since the former value of assured energy (5.13 MW, on average), stated in ANEEL's Resolution 446/2003, do not lead to 46,305 MWh/yr. *CL07 is not closed.* Second analysis: The difference between the annual averages of energy generation used for the ex-ante estimation of emissions reductions comparing PDD version 03 (46,954 MWh/yr) and registered PDD version 2005.07.27B (46,305 MWh/yr) has been explained. **CL07 is closed.**

CL08: Please, rewrite first paragraph of the section B.6.1, using expressions in accordance to AMS-I.D. ver 16.	EB 34 Ann 09	The paragraph was rewrite according to AMS.I.D. Please refer to the second version of the PDD.	First paragraph of Section B.6.1, PDD Version 02, has been rewritten, in accordance with AMS-I.D. Version 16. **CL08 is closed.**
CL09: Please, correct the names of the steps of the "Tool to calculate the emission factor for an electricity system". Adjust Section B.6.1 accordingly.	EB 34 Ann 09	The names of the steps were corrected according to the "Tool to calculate the emission factor for an electricity system". Please refer to the second version of the PDD.	The names of the steps of the Tool to calculate the emission factor for an electricity system have been corrected in PDD Version 02. **CL09 is closed.**
CL10: Please, clarify, in Section B.6.1, under "Project Emissions (PE_y)", that "Emissions from water reservoirs of hydro power plants" is one of the categories to which first paragraph refers to.	EB 34 Ann 09	The topic "*Emissions from water reservoirs of hydro power plants*" is inserted under the "*Project Emissions (PE_y)*". However, the numbering was included for better identification.	As "Emissions from water reservoirs of hydro power plants" is inserted under "Project Emissions (PE_y), including numbering for better identification, **CL10 is closed.**
CL11: Please, use a single symbol for multiplication operations over all sections of the PDD. Currently, three different symbols are used (x, . and *).	EB 34 Ann 09	It's important to mention that both methodologies (AMS.I.D and ACM0002) and the "*Tool to calculate the emission factor for an electricity system*" present different symbols. Anyway, the symbol for multiplication operations was modified. Please refer to the second version of the PDD.	Single symbol for multiplication operations have been used. **CL11 is closed.**
CL12: Please, correct description of $EF_{EL,DD,h}$.	EB 34 Ann 09	The description of $EF_{EL,DD,h}$ was corrected, Please refer to the second version of the PDD.	PDD Version 02 presents correct description of $EF_{EL,DD,h}$. **CL12 is closed.**

CL13: Please, explain and justify why Option I was chosen, in Step 2, Section B.6.1, PDD version 01.	EB 34 Ann 09	OM and BM emission factors were calculated by the Brazilian DNA and the only values publicly available is the average of CO_2 emission factor in tCO_2/MWh: - BM annually and - OM monthly, daily and hourly. Methods are not explicit available. According to 43rd EB meeting: "*DOEs may request the DNA for an opportunity to assess that the 'tool to calculate the emission factor for an electricity system' was correctly applied in calculating the grid emission factors at the offices of the DNA, observing their specific requirements, including confidentiality and non-removal of data from their offices*". Considering the 43rd EB meeting clarification, a meeting was held between DOEs and the Brazilian DNA in the beginning of 2009 year. In this meeting, Brazilian DNA explained methods/options choose during the EF calculation. Therefore, there is no explanation or justification from the PPs' side for the options chosen for the EF calculation.	First analysis: It is to be mentioned that for dispatch data analysis, applicable method for calculating the operating margin emission factor in the case of this project activity, no off-grid plants are considered as part of the project electricity system. The fact that the Brazilian DNA calculates the operating and build margins emission factors does not void the requirement, from the Guidelines for CDM-SSC-PDD Version 05, that all relevant methodological choices must be explained and justified. *CL13 is not closed.* Second analysis: The chosen of Option I, in Step 2, Section B.6.1, PDD version 03, has been explained and justified. **CL13 is closed.**

		Second response: The emission factor was revised according the new version of the "*Tool to calculate the emission factor for an electricity system*". Please refer to the third version of the PDD and EF spreadsheet calculation.	
CL14: Please, clarify the difference between ANEEL's and ONS' information on the SHPP installed capacity. As per ANEEL's Resolution 446/2203 (http://www.aneel.gov.br/cedoc/res2003446.pdf), it is 9,200 kW. As per ONS' records of Type 3 Power Plants (http://www.ons.org.br/download/integracao_sin/definicao_modalidade/Modalidade.zip, file "Tipo_3_Em Operação_05_Ago_2010.pdf"), 11.0 MW.	EB 34 Ann 09	The commercialization agent (Electra Energy) contacted the ONS in September 14th to clarify the difference present in the website. In October 18th, ONS informed that installed capacity of the plant was corrected. This change can be found on the ONS website after the next update. Please refer to the email sent by ONS to Fernanda Santos Brasil (Electra Energy) informing the alteration in the ONS' website.	ONS's information on the SHPP installed capacity has been corrected and is now in line with ANEEL. **CL14 is closed.**
CL15: Please, provide the data books of the equipments of the three generating units installed at the plant.	EB 34 Ann 09	See the data books of the equipments attached to this response.	Data books of all three generating units have been provided. **CL15 is closed.**

CL16: Please, rewrite description of "Value of data" for $EF_{CO2,y}$, replacing expression "while the validation". Refer to text under Option 1 of the "Tool to calculate the emission factor for an electricity system" version 02, page 15.	EB 34 Ann 09	The description was corrected according the "Tool to calculate the emission factor for an electricity system". Please refer to the second version of the PDD. Second response: The sections B.6.2 and B.7.1 were revised according to the new version of the "*Tool to calculate the emission factor for an electricity system*". Please refer to the third version of the PDD.	First analysis: Please, clarify that the submission is "to the DOE", as per the Tool to calculate the emission factor for an electricity system Version 02. *CL16 is not closed.* Second analysis: $EF_{CO2,y}$ has been removed from Section B.7.1 of PDD v03, since it is determined *ex ante* for the second crediting period. **CL16 is closed.**
CL17: Please, clarify that the choice of dispatch data analysis does not allow the ex-ante approach to determine $EF_{grid,OM,y}$.	EB 34 Ann 09	According to the "*Tool to calculate the emission factor for an electricity system*", version 02, the dispatch data analysis OM emission factor is determined based on the grid power units that are actually dispatched at the margin during each hour *h* where the project is displacing grid electricity. This approach is not applicable to historical data, and, thus, requires anuual monitoring of $EF_{grid,OM-DD,y}$.	In Section B.7.1, of PDD Version 02, PPs have clarified that the choice of dispatch data analysis does not allow the *ex-ante* calculation of the emission factor. **CL17 is closed.**

CL18: Please, clarify management and operational structure for monitoring, including data collection and archiving, considering all parties involved. Additionally, detail the "Area of Operations", which is shown in Item 6 of BGEE's procedure BTCC02 version 02.	EB 34 Ann 09	RGE – Rio Grande Energia (a company responsible for energy distribution in the north-northeast of Rio Grande do Sul State) informs the total electricity generated by the project in a month to the project owner and the commercialization agent – Electra Energy. The project owner informs the electricity generated by the plant to CCEE (through the Electra Energy). This information was included in the second version of the Monitoring Report. The operation sector is represented by the Electra Energy. Electra Energy receives the generation records by RGE, makes the registration in the CCEE system, sends to BT Geradora the generation values and ME001 Reports and stores these records. Second response: The operations programmer belongs to the commercialization agent Electra Energy. As mentioned above, Electra is responsible for receives the generation records, make the registration in the CCEE system, send the generation report (ME001) to BT Geradora and store these records in the SHP database. For more details, please refer to the file "BT_Esclarecimento sobre procedimento BT.zip" attached to this response. Third response:	First analysis: It is not yet clear to which organization the operations programmer belongs to (see last bullet under the responsibilities of the Operations Area). *CL18 is not closed.* Second analysis: PPs are requested to present a revised and updated version of BT Geradora's internal procedure BTCC02. *CL18 is not closed.* Third analysis: BT Geradora's internal procedure BTCC has been revised. Identified as BTCC03, version 03, dated 01/03/2012. This CL is closed.

		Please refer to the new version of the BT Geradora's internal procedure BTCC02, attached to this response.	
CL19: Please, explain why the main meter (position identified as "A1" in BGEE's panel at RGE's substation) has been removed. Additionally, provide CCEE's records of all measuring events, during the 4th monitoring period, of both energy meters, as per CCEE's "BOM" report ("Boletim de Ocorrência de Medição").	EB 34 Ann 09	According to the ELO' Report, attached to this response, the security panel showed a defect during operation and therefore was removed. Thus, the period in which only the backup meter operated corresponds: 06/08/2010 to 23/08/2010. It's important to mention that, for the last monitored period, there was no occurrence and therefore no CCEE's "BOM" report wasn't generated. Please refer to the Elo' Report and the "print screen" of CCEE website attached to this response.	Explanation has been provided on why the main meter had been removed*. The period during which only the backup meter operated is from 06/08/2010 until 23/08/2010*. There were no additional events with the energy meters, during 4th monitoring period**. Source of information: * ELO's technical report on meter #90001661, dated 23/08/2010 ** CCEE's Energy Data Collection System (Maintenance Notification Module) **CL19 is closed.**

CL20: Please, provide documented evidence on the identification (model and serial number) of the energy meter that has been temporarily removed from BGEE's panel at RGE's substation.	EB 34 Ann 09	Please refer to the ELO' Report with the model (ELO 2180) and serial number (90001661) attached to this response.	Based on ELO's technical report, dated 23/08/2010, on meter #90001661, it has been confirmed the identification of the energy meter that had been temporarily removed from BGEE's panel at RGE's substation. **CL20 is closed.**

CL21: Please, provide documented evidence on the serial number of the backup meter, which has a warranty label numbered 28998 (position identified as "A2" in BGEE's panel at RGE's substation).	EB 34 Ann 09	See the registration data of the PCH in the CCEE (from the Portuguese *Câmara de Comercialização de Energia Elétrica*) attached to this response, where are the serial numbers of the energy meters. Second response: As can be seen during the site visit, the backup energy meter presents a label of LACTEC (*Instituto de Tecnologia para Desenvolvimento*), the responsible for the calibration of the energy meters. This label shows the date of the calibration (25/03/2010) and the number of certificate (CCL050/10). The same information is present in the certificate of calibration of the backup energy meter. However, there is a difference in the serial number present in the certificate CCL050/10. This difference was due to a mistake by LACTEC. However, the certificate was corrected and follows attached to this response.	First analysis: No documented evidence has been provided yet on the serial number of the backup meter, which has a warranty label numbered 28998. *CL21 is not closed.* Second analysis: LACTEC's calibration label and relevant certificate evidence serial number 90001696. Note: LACTEC is an accredited laboratory under RBC (the Brazilian Calibration Network). **CL21 is closed.**

CL22: Please, provide copies of the daily manual records, taken by the plant operators, of the power generation of the 332 kW generating unit, in 2010 ("registro mini central 2010").	VVM 59	Please refer to the daily manual record attached to this response. It's important to mention that, according to the daily manual records for the year 2008 and 2009 (seen during the site visit) and the 2010' records attached to this response, the generation unit did not operated.	Copies of the daily manual records of the power generation of the third generating unit has been provided. **CL22 is closed.**
CL23: Please, provide copies of the daily manual records, taken by the plant operators, of the power generation of generators 01 and 02, in 2010 ("registros grupo gerador 01 e 02"), for every single day when both generators were operating at the same time. Even when that occurred only in part of the day.	VVM 59	Please refer to the daily manuals records of generators 01 and 02 (for the year 2010) attached to this response.	Copies of the daily manual records of the power generation of generating units 01 and 02 have been provided. **CL23 is closed.**

CL24: Please, clarify who – person(s)/entity(ies) – was responsible for the application of the baseline and monitoring methodology to the project activity.	EB 34 Ann 09	This information is present in the Section B.8 of the PDD. Anyway, Ecopart Assessoria em Negócios Empresariais Ltda. is the responsible for the application of the baseline and monitoring methodology to the project activity. Second response: More detail was included in the Section B.8. Please refer to the third version of the PDD.	First analysis: PDD Version 02, Section B.8, does not yet clearly state that Ecopart Assessoria em Negócios Empresariais Ltda. is the "responsible for the application of the baseline and monitoring methodology to the project activity", as required by the Guidelines for CDM-SSC-PDD Version 05. *CL24 is not closed.* Second analysis: In PDD Version 03, Section B.8, the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity has been clearly stated. **CL24 is closed.**