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Validation Report

AES TIETÊ S.A.

VALIDATION OF THE CDM-PROJECT:

JAGUARI MIRIM RIVER HYDROELECTRIC PLANTS

REPORT NO. 1169017

13 March 2009

TÜV SÜD Industrie Service GmbH

Carbon Management Service
Westendstr. 199 - 80686 Munich – GERMANY

Industrie Service

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Subject: Validation of a CDM Project

Accredited TÜV SÜD Unit:	**TÜV SÜD Contract Partner:**
TÜV SÜD Industrie Service GmbH Certification Body "climate and energy" Westendstr. 199 80686 Munich Germany	TÜV SÜD Industrie Service GmbH Carbon Management Service Westendstr. 199 80686 Munich Federal Republic of Germany
Project Participant: AES Tietê S.A. Rua Lourenço Marques, 158, 2º andar Brasiliana House São Paulo, ZIP 04547 – 100 Brazil	**Project Site(s):** The project is located at the Jaguari Mirim River, downstream from the city of São João da Boa Vista, 4 km downstream for SHP São José, and 14 km downstream for SHP São Joaquim), São Paulo State, Brazil GPS coordinates taken from each power house : SHP São José (46°48'57"W; 21°56'17"S) SHP São Joaquim (46°53'34"W; 21°52'26"S)

Project Title: Jaguari Mirim River Hydroelectric Plants

Applied Methodology / Version:	AMS-I.D. / version 13	**Scope(s):**	**1**

First PDD Version:		**Final PDD version:**	
Date of issuance:	26-03-2008	Date of issuance:	13-03-2009
Version No.:	01	Version No.:	05
Starting Date of GSP	29-03-2008		

Estimated Annual Emission Reduction: **8,634** tCO_2e

Assessment Team Leader:	**Further Assessment Team Members:**
Johann Thaler	--------

Summary of the Validation Opinion:

☒ The review of the project design documentation and the subsequent follow-up interviews have provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board in case letters of approval of all Parties involved will be available before the expiring date of the applied methodology(ies) or the applied methodology version respectively.

☐ The review of the project design documentation and the subsequent follow-up interviews have not provided TÜV SÜD with sufficient evidence to determine the fulfilment of all stated criteria. Hence TÜV SÜD will not recommend the project for registration by the CDM Executive Board and will inform the project participants and the CDM Executive Board on this decision.

Abbreviations

ACM	Approved Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology Small scale
ANEEL	Agência Nacional de Energia Elétrica
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CR / CL	Clarification Request
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA / EA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	GreenHouse Gas(es)
INMETRO	Instituto Nacional de Metrologia, Normalização e Qualidade Industrial
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
IRR	Internal Rate of Return
KP	Kyoto Protocol
MP	Monitoring Plan
NGO	Non Governmental Organisation
OM	Operational Margin
PDD	Project Design Document
PP	Project Participant
SHP	Small Hydro Plant

TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

1.1 Objective

The validation objective is an independent assessment by a Third Party (Designated Operational Entity = DOE) of a proposed project activity against all defined criteria set for the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and will finally result in a conclusion by the executing DOE whether a project activity is valid and should be submitted for registration to the CDM Executive Board (CDM-EB). The ultimate decision on the registration of a proposed project activity rests at the CDM-EB and the Parties involved.

The project activity discussed by this validation report has been submitted under the project title:

Jaguari Mirim River Hydroelectric Plants

1.2 Scope

The scope of any assessment is defined by the underlying legislation, regulation and guidance given by relevant entities or authorities. In the case of CDM project activities the scope is set by:

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- Further COP/MOP decisions with reference to the CDM (e.g. decisions 4 – 8/CMP.1)
- Decisions and specific guidance by the EB published under http://cdm.unfccc.int
- Guidelines for Completing the Project Design Document (CDM-PDD), and the Proposed New Baseline and Monitoring Methodology (CDM-NM)
- Baselines and monitoring methodologies (including GHG inventories)
- Management systems and auditing methods
- Environmental issues relevant to the sectoral scope applied for
- Applicable environmental and social impacts and aspects of CDM project activity
- Sector specific technologies and their applications
- Current technical and operational knowledge of the specific sectoral scope and information on best practice

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

Once TÜV SÜD receives a first PDD version, it is made publicly available at the UNFCCC webpage and at TÜV SÜD's webpage for starting a 30 day global stakeholder consultation process (GSP). In case of any request a PDD might be revised (under certain conditions the GSP could be repeated) and the final PDD will form the basis for the final evaluation as presented in this report. Information on the first and the final PDD version is presented in page 2.

The only purpose of a validation is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD cannot be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

2 METHODOLOGY

The project assessment applies standard auditing techniques to assess the correctness of the information provided by the project participants. The assessment is based on the "Clean Development Mechanism Validation and Verification Manual" version 01. The work starts with appointment of team covering the technical scope(s), sectoral scope(s) and relevant host country experience for evaluating the CDM project activity. Once the project is made available for the stakeholder consultation process, members of the team carry out the desk review, follow-up actions, resolution of issues identified and finally preparation of the validation report. The prepared validation report and other supporting documents then undergo an internal quality control by the CB "climate and energy" before submission to the CDM-EB.

In order to ensure transparency, assumptions are clear and explicitly stated; the background material is clearly referenced. TÜV SÜD developed a methodology-specific protocol customised for the project. The protocol shows, in a transparent manner, criteria (requirements), the discussion of each criterion by the assessment team and the results from validating the identified criteria. The validation protocol serves the following purposes:

It organises, 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 and any adjustment made to the project design.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below.

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

Validation Protocol Table 1: Conformity of Project activity and PDD				
Checklist Topic / Question	**Reference**	**Comments**	**PDD in GSP**	**Final PDD**
The checklist is organised in sections following the arrangement of the applied PDD version. Each section is then further sub-divided. The lowest level constitutes a checklist question / criterion.	*Gives reference to documents where the answer to the checklist question or item is found in case the comment refers to documents other than the PDD.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached. In some cases sub-checklist are applied indicating yes/no decisions on the compliance with the stated criterion. Any **Request** has to be substantiated within this column*	*Conclusions are presented based on the assessment of the first PDD version. This is either acceptable based on evidence provided (**þ**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **Clarification Request (CR)** is used when the validation team has identified a need for further clarification. **Forward action request** to highlight issues related to project implementation that require review during the first verification.*	*Conclusions are presented in the same manner based on the assessment of the final PDD version and further documents including assumptions presented in the documentation.*

Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests			
Clarifications and corrective action requests	**Ref. to table 1**	**Summary of project owner response**	**Validation team conclusion**
If the conclusions from table 1 are either a Corrective Action, a Clarification or a Forward action Request, these should be listed in this section.	*Reference to the checklist question number in Table 1 where the issue is explained.*	*The responses given by the client or other project participants during the communications with the validation team should be summarised in this section.*	*This section should summarise the discussion on and revision to project documentation together with the validation team's responses and final conclusions. The conclusions should be reflected in Table 1, under "Final PDD".*

In case of a denial of the project activity more detailed information on this decision will be presented in table 3.

Validation Protocol Table 3: Unresolved Corrective Action and Clarification Requests		
Clarifications and corrective action requests	**Id. of CAR/CR 1**	**Explanation of the Conclusion for Denial**
If the final conclusions from table 2 results in a denial the referenced request should be listed in this section.	*Identifier of the Request.*	*This section should present a detail explanation, why the project is finally considered not to be in compliance with a criterion with a clear reference to the requirement which is not complied with.*

2.1 Appointment of the Assessment Team

According to the technical scopes and experiences in the sectoral or national business environment TÜV SÜD has composed a project team in accordance with the appointment rules of the TÜV SÜD certification body "climate and energy". The composition of an assessment team has to be approved by the Certification Body (CB) ensuring that the required skills are covered by the team. The CB TÜV SÜD operates four qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL)
- Greenhouse Gas Auditor (GHG-A)
- Greenhouse Gas Auditor Trainee (T)
- Experts (E)

It is required that the sectoral scope linked to the methodology has to be covered by the assessment team.

Name	Qualification	Coverage of technical scope	Coverage of sectoral expertise	Host country experience
Johann Thaler	**ATL**	**þ**	**þ**	**þ**

Johann Thaler graduated as Master of environmental Economy at the University of Augsburg. During his study he got first experiences in environmental management systems. His master thesis was

about a fuel switch program in Brazil as a CDM project. Based in Brazil he has been working for TÜV SÜD as a GHG auditor on freelance basis since March 2005. He attended and successfully finished a ISO 14001 Environmental Management Internal Auditing Training.

2.2 Review of Documents

A first version of the PDD was submitted to the DOE in March 2008. The first PDD version submitted by the PP and additional background documents related to the project design and baseline were reviewed to verify the correctness, credibility and interpretation of the presented information as initial step of the validation process. A complete list of all documents and proofs reviewed is attached as annex 2 to this report.

2.3 Follow-up Interviews

On 04 April, 2008 TÜV SÜD performed interviews, telephone conferences and physical site inspection with project stakeholders to confirm relevant information and to resolve issues identified in the first document review. The table below provides a list of all persons interviewed in this context.

Name	Organisation
Demóstenes Barbosa da Silva, Environmental Director	AES Tietê S.A.
Clauber Leite, Environmental Engineer	AES Tietê S.A.
Samy Hotimsky, Project Developer	AES Tietê S.A.
Roberto Sattamini, Project Director	AES Tietê S.A.,
Marianna Silva, Environmental analyst	AES Tietê S.A.,
Roberto Kishinami, Environmental Consultant	NRG Ltda,

2.4 Further cross-check

During the validation process, the team makes reference to available information related to similar projects or technologies as the CDM project activity. The documentation has also been reviewed against the approved methodology applied and the Tool to calculate the emission factor for an electricity system to confirm the appropriateness of formulae and correctness of calculations.

2.5 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to resolve the requests for corrective actions and clarifications and any other outstanding issues which needed to be clarified for TÜV SÜD`s conclusion on the project design. The CARs and CRs raised by TÜV SÜD were resolved during communication between the client and TÜV SÜD. To guarantee the transparency of the validation process, the concerns raised and responses that have been given are documented in more detail in the validation protocol in annex 1.

The final PDD version 5 that was submitted in March 2009 serves as the basis for the final assessment presented herewith. Changes are not considered to be significant with respect to the qualification of the project as a CDM project based on the two main objectives of the CDM, i.e. to achieve a reduction of anthropogenic GHG emissions and to contribute to a sustainable development.

2.6 Internal Quality Control

As final step of a validation the final documentation including the validation report and the protocol have to undergo an internal quality control by the CB “climate and energy”, i.e. each report has to be finally approved either by the head of the CB or the deputy. In case one of these two persons is part of the assessment team approval can only be given by the other one.

After confirmation of the PP the validation opinion and relevant documents are submitted to the EB through the UNFCCC web-platform.

3 SUMMARY

The assessment work and the main results are described below in accordance with the VVM reporting requirements. The reference documents indicated in this section and Annex 1 are stated in Annex 2.

3.1 Approval

The only project participant is AES Tietê S.A. from Brazil (Host Party). The participation of AES Tietê S.A. was confirmed during the on-site interview. The Host Party Brazil meets the requirements to participate in the CDM.

The final letter of approval has not been received yet, but a request for registration will not be submitted as long as the letter of approval has not been received according to § 50 (a) of the VVM.

Before submitting the project for registration, TÜV SÜD will check whether the requirements of the VVM (§§ 45-48) are complied with.

3.2 Participation

See chapter 3.1.

3.3 Project design document

The PDD is compliant with relevant form and guidance as provided by UNFCCC.

The most recent version of the PDD form was used.

TÜV SÜD considers that the guidelines for the completion of the PDD in their most recent version have been followed. Relevant information has provided by the participants in the applying PDD sections. Completeness was assessed through the protocol included to Annex 1 of this report.

3.4 Project description

The following description of the project as per PDD could be verified during the on-site audit:

The Jaguari Mirim River Hydroelectric Plants project includes two run-of-river hydroelectric plants with total installed capacity of 7.0 MW. The small hydroelectric plants include SHP São Joaquim (3.0 MW) and SHP São José (4.0 MW) located at the Jaguari Mirim River, in the State of São Paulo, Brasil. The two small hydro plants are constructed at sites where more than 40 years ago the original hydro plants had operated. All that remains from the original hydro plants is ruined infrastructure as shown by pictures in B.2. of the PDD. Significant investments in new equipment and facilities for energy generation are necessary. The hydroelectric plants are considered run-of-river given that they do not require accumulating water for operation. The reservoir is used solely to assure adequate water flow at the intake point. In this way, the hydropower systems use water at a rate no greater than that which runs down the river. The power densities of the hydro plants are 400 W/m2 (SHP São José) and 36,14 W/m2 (SHP São Joaquim).

The main objective of the project is to generate power from clean, renewable hydroelectric power and to supply it to the Brazilian South-Southeast-Midwest interconnected grid while contributing to sustainable regional/local economic development. The project activity reduces emissions of green-

house gas (GHG) by avoiding electricity generation by fossil fuel sources (and CO_2 emissions), which would be generating (and emitting) in the absence of the project. The basic technical studies were completed in November 2006, and the project proponent plans to initiate technical works at the project site in April 2008.

The operation starting date is expected to be in October 2009.

The proposed project activity will contribute to sustainable development amongst others by using local renewable hydro resources, creating local employment opportunities during the construction and operating phases, reducing environmental pollutants such as CO_2, SO_2, NOx, and dust derived from fossil fuel-fired plants and promoting incentives to rural infrastructure development by improving access roads and electricity transmission lines.

The information presented in the PDD on the technical design is consistent with the actual planing and implementation of the project activity as confirmed by:

- review of data and information (see annex 2, references n° 5, 7, 8, 9, 22, 36, 37).
- An on-site visit has been performed and relevant stakeholder and personnel with knowledge of the project were interviewed.
- Finally information related to similar projects or technologies as the CDM project activity have been used to confirm the accuracy and completeness of the project description.

In light of the above, TÜV SÜD confirms that the project description as included to the PDD is sufficiently accurate and complete in order to comply with the requirements of the CDM.

3.5 Baseline and monitoring methodology

3.5.1 Applicability of the selected methodology

Compliance with each applicability condition as listed in the chosen baseline and monitoring methodology AMS-I.D. / version 13 has been demonstrated.

The assessment was carried out for each applicability criteria and included among others the compliance check of the local project setting with the applicability conditions in regard to baseline setting and eligible project measures. This assessment also included the review of secondary sources which sustain that applicability conditions are complied with.

The Methodology specific protocol included as Annex 1 to this report, documents the assessment process, including the steps taken. The results on the compliance check as well as the relevant evidence are explicitly presented in annex 1. The validation team confirms, that the two small hydro plants can be considered as new hydro electric power plants as they are constructed at sites where more than 40 years ago the original hydro plants had operated and all that remains from the original hydro plants is ruined infrastructure as it was demonstrated during the on-site visit. It was clearly shown to the validation team, that significant investments in new equipment and facilities for energy generation are necessary.

TÜV SÜD confirms that the chosen baseline and monitoring methodology is applicable to the project activity.

Emission sources which are not addressed by the applied methodology and which are expected to contribute more than 1% of the overall expected average annual emissions reduction have not been identified.

3.5.2 Project boundary

The project boundary was assessed in the context of physical site inspection, interviews and based on the secondary evidence received on the design of the project.

The project boundary encompasses the physical, geographical sites of the two hydroelectric power plants São Joaquim and São José including its reservoirs. Besides, all power plants connected physically to the South/Southeast/Midwest electricity system, are included in the project boundary.

The most relevant documentation assessed in order to confirm the project boundary are following:

Photo presentation (IRL 6), registries of land purchase (IRL 10) and interviews conducted during the on-site visit.

The same have been validated during the validation process using standard audit techniques, furhter details of any observation are transparently presented in the annex 1.

Hence TÜV SÜD confirms that the identified boundary and the selected sources and gases as documented in the PDD are justified for the project activity.

3.5.3 Baseline identification

In the PDD the following baseline scenario has been defined:

The electricity delivered to the grid by the project would have been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the Combined Margin calculations. In the absence of the project, electricity would continue to be generated by the existing generation mix, operating in the grid.

The information presented in the PDD has been validated by a first document review of all the data, further confirmation based on the on-site visit and a final step by cross checking the information with similar relevant projects and/or technologies. The sources referenced in the PDD have been quoted correctly. The information was cross-checked based on verifiable and credible sources, such as:

- Brazilian energy balance and outlook report 2007 (IRL 41)
- National Energy Plan for 2030 (IRL 42)
- 10-yr Electric Energy Expansion Plan (2006-2015) (IRL 43)

TÜV SÜD has determined that no reasonable alternative scenario has been excluded.

Based on the validated assumptions on calculations TÜV SÜD considers that the identified baseline scenario is reasonable.

TÜV SÜD confirms that all relevant CDM requirements, including relevant and / or sectoral policies and circumstances, have been identified correctly taken into account in the definition of the baseline scenario.

A verifiable description of the baseline scenario has been included to the PDD.

In regard to item 86 of VVM, TÜV SÜD confirms that:

1. All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
2. All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
3. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;

4. Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD;
5. The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

3.5.4 Algorithm and/or formulae used to determine emission reductions

3.5.4.1 Baseline Emissions

TÜV SÜD has assessed the calculations of project emissions, baseline emissions and leakage and emission reductions. Corresponding calculations were carried out based on calculation spreadsheets. The parameters and equations presented in the PDD and further documentation have been compared with the information and requirements presented in the methodology and respective tools. The equation comparison has been made explicitly following all the formulae presented in the calculation files.

The calculation of the baseline emissions followed the procedures described in the methodology AMS-I.D Version 13 and the Tool to calculate the emission factor for an electricity system, version 01.1. The South/Southeast/Midwest grid is considered to be the project boundary.

The operating margin emission factor (EF_{OM}) was determined based on the simple adjusted operating margin method. The ex-ante option was chosen for this calculation. The calculation of the build margin emission factor (EF_{BM}) was based on the generation-weighted average emission factor (tCO2/MWh) of all power units *m* during the most recent year *y* for which power generation data is available. Option B2 described in step 3(a) of the "Tool to calculate an emission factor for an electricity system" was used.
The value for the combined margin emission factor (EF_{CM}) was determined using the weighted average of the EF_{BM} and EF_{OM} using the default values for the factors as described in the "Tool to calculate an emission factor for an electricity system". As per the methodology, the project does not need to consider leakage or project emissions. As a result, the annual emission reductions equal the annual baseline emissions.

The calculations for the EF_{CM} were prepared and consolidated by a group of project developers (AgCert, EcoAdvance, Ecoinvest, Econergy, Ecosecurities and MGM International), and are based on the 2004-2006 period. The validation team can confirm the ex-ante application of the project´s emissions factor of 2006 which is 0.2826 tCO2/MWh for the South-Southeast-Midwest grid electricity system. The grid electricity system is correctly identified. On June 19, 2008 the Brazilian government published the new emissions factor for 2007. The Brazilian DNA decided that all projects, which started the GSP after that date, have to apply the new calculated emissions factor. As the proposed project activity was uploaded to the GSP on March 29, 2008, i.e. clearly before the deadline set up by the Brazilian DNA, TÜV SÜD accepted the application of the 2006 emissions factor.

The estimated baseline emissions can be confirmed as the same have been replicated by the audit team using the information provided.

3.5.5 Project emissions

As per the methodology, the project does not need to consider project emissions. This was confirmed by the validation team, as there is no fossil fuel use in the project activity and power density is clearly above 10 W/m2.

3.5.6 Leakage

As per the methodology, the project does not need to consider leakage emissions. The energy generating equipment is not transferred from another activity or to another activity.

3.5.7 Emission Reductions

In summary, the calculation of the emission reductions can be considered as correct. The assumptions and data used to determine the emission reductions are listed in the PDD and all the sources have been checked and confirmed.
Based on the information reviewed it can be confirmed that the sources used are correctly quoted and interpreted in the PDD.
The values presented in the PDD are considered reasonable based on the documentation reviewed, further references and the result of the interviews.
The baseline methodology has been correctly applied following the requirements. Detailed information on the verification of the parameters used in the equations can be found in the annex 1.

3.6 Additionality

The additionality of the project has been presented in the PDD using following approach: Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.

The approach used in the PDD has been assessed first based on a document review, where following relevant documents have been reviewed:

Anecdotal references mentioned in the PDD regarding institutional, investment barriers and barriers due to prevailing practice.

On site the additionality has been discussed mainly with: Demóstenes Barbosa da Silva, Environmental Director and Roberto Sattamini, Project Director. Furthermore some of the documents mentioned below have been reviewed on-site, others were submitted after the on-site visit (for details see annex 2).

Finally the data, rationales, assumptions, justifications and documentation provided have been checked using local knowledge and sectoral and financial expertise, the same have been cross checked by:

- Newspaper Folha de Sao Paulo: Alternative Source Program is delayed (IRL 35)
- Decennium plan of expansion of electric energy (2006-2015) (IRL 43)
- Concession Contract 92/99, ANEEL – TIETE (IRL 44)
- Report on the Agencia Nacional de Energia Eletrica – ANEEL (IRL 45)
- Review of the institutional and regulatory reforms, CORREIA ET AL. (IRL 47)
- Analysis of reasons which impede the fast implementation of SHP plants in Brazil, ANDRADE (IRL 49)
- A proposal for the revision of ANEEL resolution N° 395/98 and its consequences for small hydroelectric power plants", VILAS BOAS (IRL 50)
- and others.

Based on this validation steps we can confirm that the documentation assessed is appropriate for this project. Further information on additionality is provided in section 3.6.4. of this report.

3.6.1 Prior consideration of the clean development mechanism

The starting date of the project activity is determined by the date when the first purchase contract was signed, namely that of the generators on February 12, 2008. In order to confirm the same, the assessment team has reviewed the following document: Purchase contract between AES Tietê S.A. and FLESSAK Eletro Industrial Ltda. for generators of SHP Sao Jose and SHP Sao Joaquim (IRL 9), additionally the assessment team cross checked this information with the purchase contract between AES Tietê S.A and SEMI Industrial Ltda. for turbines for SHP Sao Jose (IRL 8) and the purchase contract between AES Tiete and Hacker Industrial Ltda. for the turbine for SHP São Joaquim (IRL 31).

The starting date of the project activity is determined to be 12 February, 2008 which is before 02 August 2008 and also before the GSP. The PPs have presented to the assessment team following documentation:

AES Tietê S.A. Board Approval in the 169 th directors´meeting on 13 November, 2007 approving the investment decision (IRL 12).

The original of the documentation presented has been reviewed and cross checked based on interviews with Samy Hotimsky, hence the document can be considered appropriate to confirm the prior consideration of CDM. Additionally in order to confirm that the PPs have taken real actions to continue the activity as CDM, following timeline has been reviewed against the respective documents presented in the table below:

Activity	Document	Auditor conclusion
Inclusion of project in AES Brazil development and carbon pipeline	Power Point Presentation (dated 24/11/2006): Pipeline of Projects, mentioning amongst others the AES Jaguari Mirim project including its eligibility as CDM project (IRL 46)	The presentation shows the early interest to develop the proposed project activity as CDM project.
PDD development in October 2007 by AES Tietê S.A.	Not applicable	The timeline is retraceable considering that a Project Brief Template was submitted to the validation team informing about the basic items of the project as CDM activity, dated February 2007 (IRL 55), i.e. clearly prior to the PDD development.
Carbon financial valuation	Financial model considering the impact of CERs (IRL 54)	The financial model, dated November 2007 and developed by the business development department and revised by the financial department (both of AES Tiete), shows clearly the financial impact of the CER credits for the proposed project activity.

AES Tiete board approval	AES Tietê S.A. Board Approval in the 169th directors´meeting on 13 November, 2007 approving the investment decision (IRL 12).	The authenticity of the document was verified by the audit team.
Construction start in February 2008	Purchase contract between AES Tietê S.A. and FLESSAK Eletro Industrial Ltda. for generators of SHP Sao Jose and SHP Sao Joaquim (IRL 9)	The authenticity of the document was verified by the audit team.
Start of validation process	Request for GSP uploading in March 2008 and on-site interview on April 04, 2008.	Responsible persons involved in the development of the proposed project activity as CDM activity were interviewed. The interviews confirm the content reflected in the presented documents.

Hence the project complies with the requirements to demonstrate the prior consideration of the CDM.

3.6.2 Identification of alternatives

The output of the project is electricity.

The list of alternatives to supply the outputs mentioned above, which is presented in the PDD includes the project activity undertaken without being registered as CDM project. The rest of the alternatives presented do include all plausible scenarios taking into account the local and sectoral situations for the output mentioned. Hence the list of alternatives is considered to be complete.

3.6.3 Investment analysis

Not applicable.

3.6.4 Barrier analysis

The project participants have used the barrier analysis in order to demonstrate the additionality of the project. The presented barriers are:

Institutional barrier, investment barrier for small scale renewable energy projects, barrier due to prevailing practice.

The assessment team checked first if any barrier has a clear impact on the financial returns which can be expressed with reasonable certainty in monetary terms. The final PDD does include only barriers without such impact on the financial returns.

The institutional barrier has been assessed against official documents such as ANEEL evaluation report produced by the US Chamber for Commerce in Brazil (AMCHAM) (IRL 45) and a Review of the institutional and regulatory reforms in Brazil (CORREIA ET AL.) (IRL 47). The result of this assessment shows clearly that the barrier presented in the PDD can be considered real.

This barrier does prevent the project activity and would not prevent at least the baseline of the project, this can be confirmed based on the documentation review, interviews and local and sectoral expertise of the assessment team. The documents of Edgard A. PEREIRA (IRL 48), CASTRO (IRL 53), ARAUJO (IRL 52) and ANDRADE (IRL 49) confirm the institutional barrier, mentioning the risks potential private investors are exposed to and the uncertainty related to new electricity generation projects (specifically small hydro plants).

The investment barrier for small scale renewable energy projects has been assessed against official documents such as Newspaper Folha de Sao Paulo: Alternative Source Program is delayed (IRL 35). The result of this assessment shows clearly that the barrier presented in the PDD can be considered real.

This barrier does prevent the project activity and would not prevent at least the baseline of the project, this can be confirmed based on the documentation review, interviews and local and sectoral expertise of the assessment team. The document of VILAS BOAS (IRL 50) confirms the investment barrier. VILAS BOAS mentions ANEEL´s intention to publish a revised model for the selection, approval and registration of new projects which indicates that a new model is required to attract private investment for the construction of new small hydro plants.

The barrier due to prevailing practice has been assessed against official documents such as Brazilian energy balance and outlook report 2007 (IRL 41), National Energy Plan for 2030 (IRL 42) and Decennium plan of expansion of electric energy (2006-2015) (IRL 43). The result of this assessment shows clearly that the barrier presented in the PDD can be considered real.

This barrier does prevent the project activity and would not prevent at least the baseline of the project, this can be confirmed based on the documentation review, interviews and local and sectoral expertise of the assessment team.

As a final comment, it should be mentioned that AES Tietê has an alternative option to invest in large scale hydro projects in order to obtain higher returns, and to meet its capacity expansion obligation within the State of São Paulo. According to the concession contract established between ANEEL and AES Tietê (IRL 44), the company is required to expand its capacity potential in 15% (or equivalent of around 400 MW) of current capacity. Given the economies of scale achieved by larger scale projects, AES Tietê could have been allocated human and financial resources in order to meet this legal obligation at lower costs.

Taken into account the description of the validation of the barriers presented above, the assessment team can confirm with reasonable certainty that the barriers and credible and correctly presented to demonstrate the additionality of the project.

3.6.5 Common practice analysis

The region for the common practice analysis has been defined as the State of São Paulo. The project activity´s technology can be found in different country regions, where different situations can appear. Hence the region has been defined taken into account the kind of technology and the industry type. The assessment team has revised the approach presented in the PDD and can confirm that the relevant parameters as location, infrastructure, economical situation and development has been taken into account in order to define the region to be used for the common practice. The State of Sao Paulo has an unique energy profile (i.e. potential and operating energy sources and alternatives) and AES Tietê has an expansion obligation within the State of Sao Paulo, and not in another region, which is evidenced by an article published in the magazine “Valor Economico” in October 2008 (IRL 51) and by the concession contract (IRL 44). The same was confirmed during the on-site interview. Hence the presented region can be considered appropriate for the common practice analysis.

The assessment team has revised official sources as Small Hydro Plants in the State of São Paulo (IRL 38) and ANEEL website (IRL 40). This information confirms that the list of similar projects presented in the PDD is complete. Additionally the team made a further cross check of the information based on the interviews. The essential distinctions between these similar projects and the CDM project under validation have been confirmed using IRL 38 and IRL 40.

Hence it can be confirmed that the proposed CDM activity is not a common practice in the defined region.

3.7 Monitoring plan

The monitoring plan presented in the PDD complies with the requirement of the methodology. The assessment team has checked all the parameters presented in the monitoring plan against the requirements of the methodology; no deviations relevant for the project activity have been found in the plan.
The procedures have been revised by the assessment team through document review and interviews with the relevant personnel; this information together with a physical inspection allows the assessment team to confirm that the proposed monitoring plan is feasible within the project design.
The major parameters to be monitored have been discussed with the PPs especially regarding the location of the meters, the data management and in general the quality assurance and quality control procedures to be implemented in the context of the project. The only data to be permanently monitored is exported electricity to the grid by the project as well as electricity imported from the grid. The exported and imported electricity will be monitored by 2 bi-directional meters (one main meter and one backup meter) at each small hydro plant with an accuracy of 0.2% and which will be calibrated based on the standards of INMETRO every 2 years. According to the current engineering plan, the meters will be located after the electrical transformer. Thus, transformer losses are accounted for and the net electricity after transmission losses is registered. Exported and imported electricity is continuously measured. The data is recorded by the remote operational generation centre in Bauru city and sent to CCEE´s (Electricity Trade Chamber) online database named SCDE [1] (electricity data collection system).
The parameter “surface area at full reservoir level” will be monitored once at project start by satellite imagery. Hence it is expected that he PPs will be able to implement the monitoring plan and the emission reductions achieved can be reported ex-post and verified.

3.8 Sustainable development

The project contributes to the sustainable development of the host Party. This was confirmed during the on-site visit and will be cross-checked by the audit team before submitting the project for registration once the LoA will be received.

3.9 Local stakeholder consultation

The relevant local stakeholders have been invited via postal on March 26, 2008 and in addition by Email on April 03-04, 2008. The evidence of these invitations is IRL 14. The assessment team has reviewed the documentation in order to validate the inclusion of relevant stakeholders and using the local expertise can confirmed that the communication method used to invite the stakeholders can be considered appropriate. The summary of comments presented in the PDD has been cross checked with the documentation of the stakeholder consultation and it is found to be complete.

[1] From the Portuguese „Sistema de Coleta de Dados de Energia“

The relevant comments presented by the local stakeholders have been taken due account by the PP, the same has been cross check with the information obtained during the interviews.

Hence the local stakeholder consultation has been adequately performed according to the CDM requirements.

3.10 Environmental impacts

The project participants have undertaken a preliminary environmental impact assessment. The assessment team made a document review of the information presented. The IRL 11 (Preliminary Environmental Report for both hydroelectric power plants) confirms the correctness of the approach used by the PPs. Hence the PPs followed the requirements of the host country regarding the environmental impacts.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

TÜV SÜD published the project documents on UNFCCC website by installing a link to TÜV SÜD's own website and invited comments by Parties, stakeholders and non-governmental organisations during a period of 30 days.

The following table presents all key information on this process:

<table>
<tr><td colspan="2">webpage:
http://cdm.unfccc.int/Projects/Validation/DB/M7QD3GL0XBDC6PBGB96SONX2KDRWWT/view.html</td></tr>
<tr><td colspan="2">Starting date of the global stakeholder consultation process:
29-03-2008</td></tr>
<tr><td>Comment submitted by:
None</td><td>Issues raised:
-</td></tr>
<tr><td colspan="2">Response by TÜV SÜD:
-</td></tr>
</table>

5 VALIDATION OPINION

TÜV SÜD has performed a validation of the following proposed CDM project activity:

Jaguari Mirim River Hydroelectric Plants

Standard auditing techniques have been used for the validation of the project. A methodology-specific protocol customised for the project has been prepared to carry out the audit and present the outcome in a transparent and comprehensive manner.

The review of the project design documentation, the subsequent follow-up interviews and the further cross check of references have provided TÜV SÜD with sufficient evidence to determine the fulfilment of stated criteria in the protocol. In our opinion, the project meets all relevant UNFCCC requirements for the CDM. Hence TÜV SÜD will recommend the project for registration by the CDM Executive Board.

An analysis as provided by the applied methodology demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is going to be implemented as designed, the project is likely to achieve the estimated amount of emission reductions as specified within the final PDD version.

The validation is based on the information made available to us and the engagement conditions detailed in this report. The validation has been performed following the VVM requirements. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence, TÜV SÜD can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

Munich, 13-03-2009

Thomas Kleiser

Head of Certification Body “climate and energy”
TÜV SÜD Industrie Service GmbH

Fortaleza, 13-03-2009

Assessment Team Leader

Industrie Service

Annex 1: Validation Protocol

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
A. General description of small-scale project activity				
A.1. Title of the small-scale project activity				
A.1.1. Does the used project title clearly enable to identify the unique CDM activity?	1,2	The project title clearly enables to identify the unique CDM activity.	þ	þ
A.1.2. Are there any indication concerning the revision number and the date of the revision?	1,2	Yes. Version 1, dated 26/03/2008 has been submitted for the GSP.	þ	þ
A.1.3. Is this consistent with the time line of the project's history?	1,2	Yes. It is consistent with the time line of the project´s history.	þ	þ
A.2. Description of the small-scale project activity				
A.2.1. Is the description delivering a transparent overview of the project activities?	1,2	Yes. The description is delivering a transparent overview of the project activities. The project activity consists of a run-of-river hydroelectric power plant project with two small hydro plants (SHP Sao Joaquim (3 MW) and SHP Sao Jose (4 MW)). Both plants are not operational as they were deactivated more than 40 years ago. The proposed project activity will dispatch electricity to the south/southeast/midwest grid and thus displace part of the electricity from fossil fuel-fired plants.	þ	þ
A.2.2. What proofs are available demonstrating that the project description is in compliance with the actual situation or planning?	1,2, 3-9	The following documents demonstrating that the project description is in compliance with the actual situation have been presented during the on-site visit: -ANEEL resolutions N° 730 (Sao Jose) and N° 733 (Sao Joaquim) -Environmental installation licenses for São Jose and São Joaquim -Basic technical studies, MEK Engenharia (completed in Novem-	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		ber, 2006) -Some proofs about the deactivation of the hydroplants 40 years ago (Technical Report SHP Sao Joaquim and power point presentation including fotos) -Purchase contracts of generators (for both SHPs) and turbines (SHP Sao Jose). The purchase contract for turbines (SHP Sao Joaquim) has not been signed yet. In this case it was presented a purchase proposal.		
A.2.3. Is the information provided by these proofs consistent with the information provided by the PDD?	1,2, 3-9	Yes. The information provided by these proofs is consistent with the information provided by the PDD.	þ	þ
A.2.4. Is all information presented consistent with details provided by further chapters of the PDD?	1,2	Yes. All information presented is consistent with details provided by further chapters of the PDD.	þ	þ
A.2.5. Does the description of the technology to be applied provide sufficient and transparent input to evaluate its impact on the greenhouse gas balance?	1,2,5	Yes. The description of the technology to be applied in A.4.2. of the PDD provides sufficient and transparent input to evaluate its impact on the greenhouse gas balance. **Corrective Action Request No.1.** 1. Manufacturer of turbines and generators should be indicated. 2. Technical characteristics of turbines and generators should be updated according to the purchase contracts, including the quantities. Power densities of the hydroplants should be indicated. 3. Purchase contract for turbines (SHP Sao Joaquim) should be submitted to the validation team.	**CAR 1**	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
A.2.6. Is the brief explanation how the project will reduce greenhouse gas emission transparent and suitable?	1,2	Yes. The brief explanation how the project will reduce greenhouse gas emission is transparent and suitable.	þ	þ
A.3. Project participants				
A.3.1. Is the form required for the indication of project participants correctly applied?	1,2	**Corrective Action Request No.2.** 1. Please include below the Table in A.3.: (*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party(ies) involved is required. 2. Further contact information of project participants is provided in Annex 1.	**CAR 2**	þ
A.3.2. Is the participation of the listed entities or Parties confirmed by each one of them?	1,2	The participation of the listed entities is confirmed by each of them. **Corrective Action Request No.3.** A declaration of the project participants evidencing the voluntary project participation should be submitted to the validation team.	**CAR 3**	þ
A.3.3. Is all information on participants / Parties provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	1,2	Yes. All information regarding project participants is consistent.	þ	þ
A.4. Technical description of the small-scale project activity				
A.4.1. *Location of the small-scale project activity*				
A.4.1.1. Does the information provided on	1,2,3	**Corrective Action Request No.4.**	**CAR 4**	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
the location of the project activity allow for a clear identification of the site(s)?		1. Please include the seconds of the GPS coordinates. 2. Please include information in the PDD from which location the GPS coordinates were taken. 3. The map (Figure 1) should be more illustrative.		
A.4.1.2. How is it ensured and/or demonstrated, that the project proponents can implement the project at this site (ownership, licenses, contracts etc.)?	1,2, 10	Registries of land purchase have been presented to the validation team demonstrating that the project proponents can implement the project at the two hydropower plant sites.	þ	þ
A.4.2. *Type and category(ies) and technology/measure of the small-scale project activity*				
A.4.2.1. To which type(s) does the project activity belong to? Is the type correctly identified and indicated?	1,2	The project belongs to Type 1: Renewable energy projects The type is correctly identified and indicated.	þ	þ
A.4.2.2. To which category (ies) does the project activity belong to? Is the category correctly identified and indicated?	1,2	Category I.D. : Grid connected renewable electricity generation The category is correctly identified and indicated.	þ	þ
A.4.2.3. Does the technical design of the project activity reflect current good practices?	1,2,5 ,8,9	Yes. The technical design of the project reflects current good practice. The equipment and technology used in this project have been successfully applied to similar projects in Brazil and around the world.	þ	þ
A.4.2.4. Does the implementation of the project activity require any technology transfer from Annex-I-countries to the host country (ies)?	1,2,5 ,8,9	All project equipment will be exclusively supplied by national manufacturers.	þ	þ
A.4.2.5. Is the technology implemented by the project activity environmentally safe?	1,2,5 ,8,9	Yes. The technolgy implemented by the project activity is environmentally safe. It has been successfully applied in similar pro-	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		jects in Brazil and around the world.		
A.4.2.6. Is the information provided in compliance with actual situation or planning?	1,2,5,8,9,17	**Corrective Action Request No.5.** Information about capacity factors and estimated electricity generation should be revised in A.4.2., B.6.3. and B.7.1. Capacity factors should be based on the more conservative assured electricity as discussed on-site. Please provide consistent information regarding the estimated electricity for the emission reductions calculation.	**CAR 5**	**þ**
A.4.2.7. Does the project use state of the art technology and / or does the technology result in a significantly better performance than any commonly used technologies in the host country?	1,2,5,8,9	The project uses state of the art technology, already used in several other projects in the host country.	**þ**	**þ**
A.4.2.8. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	1,2,5,8,9	It is not expected that the project technology will be substituted by other or more efficient technologies within the project period.	**þ**	**þ**
A.4.2.9. Does the project require extensive initial training and maintenance efforts in order to be carried out as scheduled during the project period?	1,2,5,8,9	Technical know-how will be transferred to local operation and maintenance teams by formal training programs and manuals.	**þ**	**þ**
A.4.2.10. Is information available on the demand and requirements for training and maintenance?	1,2,5,8,9	Demand and requirements for training and maintenance are similar to other already operating hydro plants of AES Tiete in Sao Paulo.	**þ**	**þ**
A.4.2.11. Is a schedule available for the implementation of the project and are there any risks for delays?	1,2	**Corrective Action Request No.6.** 1. A schedule for the implemtentation of the project activity has to be submitted to the validation team. 2. The time schedule for the implemenation of the project activity	**CAR 6**	**þ**

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		should be included into the PDD (including the information of CDM consideration).		
A.4.3. *Estimated amount of emission reductions over the chosen crediting period*				
A.4.3.1. Is the form required for the indication of projected emission reductions correctly applied?	1,2	Yes. The form required for the indication of projected emission reductions is correctly applied.	þ	þ
A.4.3.2. Are the figures provided consistent with other data presented in the PDD?	1,2	Yes. The figures provided are consistent with other data presented in the PDD. However, the emission reductions table should be revised due to the modification of the start of the crediting period. See B.6.4.5.	**See CAR 13**	þ
A.4.3.3. Are the figures consistent with the small-scale criteria for the used Type?	------	Not applicable.	þ	þ
A.4.4. *Public funding of the small-scale project activity*				
A.4.4.1. Is the information provided on public funding provided in compliance with the actual situation or planning as available by the project participants?	1,2	Yes. The information provided on public funding is in compliance with the actual situation or planning as available by the project participants. No public funding is involved. **Clarification Request No. 1.** Please provide information how the project activity will be financed (relation of own equity to debt capital).	**CR 1**	þ
A.4.4.2. Is all information provided consistent with the details given in remaining chapters of the PDD (in particular annex 2)?	1,2	Yes. All information provided is consistent with the details given in remaining chapters of the PDD.	þ	þ
A.4.5. *Confirmation that the small-scale project activity is not a debundled component of a large scale project activity*				

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
A.4.5.1. Is there a registered small-scale CDM project activity or an application to register another small-scale CDM project activity: with the following characteristics:	1,2	<table><tr><th>Debundling checklist</th><th>Yes / No</th></tr><tr><td>the same project participants?</td><td>No</td></tr><tr><td>In the same project category and technology/measure?</td><td>No</td></tr><tr><td>Registered within previous two years? Or in registration process?</td><td>No</td></tr><tr><td>Whose boundary is within 1 km of the project boundary of the small scale project activity under consideration?</td><td>No</td></tr></table>	þ	þ
A.4.5.2. If the answer to all the above question is '**Yes**' then does the total size of the small scale project activity combined with previously registered small scale CDM project activity exceeds the limits of small scale CDM project activities?	-----	Not applicable.	þ	þ
B. Application of a baseline and monitoring methodology				
B.1. Title and reference of the approved baseline and monitoring methodology applied to the small-scale project activity				
B.1.1.1. Are reference number, version number, and title of the baseline and monitoring methodology clearly indicated?	1,2, 23	It is clearly indicated: AMS I-D, version 13: Grid connected renewable electricity generation.	þ	þ
B.1.1.2. Is the applied version the most recent one and / or is this version still applicable?	1,2, 23	At the time of GSP uploading, version 13 has been the most recent version.	þ	þ
B.2. Justification of the choice of the project category				
B.2.1. Is the applied methodology considered the	1,2,	Yes. The applied methodology is considered to be the most ap-	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
most appropriate one?	23	propriate one.		
B.2.1.1. Criterion 1: This category comprises renewable energy generation units, such as photovoltaics, hydro, tidal/wave, wind, geothermal and renewable biomass, that supply electricity to and/or displace electricity from an electricity distribution system that is or would have been supplied by at least one fossil fuel fired generating unit.	1,2, 23	Applicability checklist: Yes / No / NA Criterion discussed in the PDD? Yes Compliance provable? Yes Compliance verified? Yes	þ	þ
B.2.1.2. Criterion 2: If the unit added has both renewable and non-renewable components (e.g.. a wind/diesel unit), the eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW.	1,2, 23	Applicability checklist: Yes / No / NA Criterion discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	þ	þ
B.2.1.3. Criterion 3: Combined heat and power (co-generation) systems that supply electricity to and/or displace electricity from a grid are **not** included in this category.	1,2, 23	**Corrective Action Request No.7.** B.2. of the PDD should inform that the project activity does not consist of a combined heat and power (co-generation) system. Applicability checklist: Yes / No / NA Criterion discussed in the PDD? No Compliance provable? Yes Compliance verified? Yes	CAR 7	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B.2.1.4. Criterion 4: 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 distinct from the existing units.	1,2, 23	Applicability checklist: Yes / No / NA Criterion discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	þ	þ
B.2.1.5. Criterion 5: Project activities that seek to retrofit or modify an existing facility for renewable energy generation are included in this category. To qualify as a small scale project, the total output of the modified or retrofitted unit shall not exceed the limit of 15 MW.	1,2, 23	Applicability checklist: Yes / No / NA Criterion discussed in the PDD? NA Compliance provable? NA Compliance verified? NA	þ	þ
B.2.1.6. If the project is under a programme of activities, have all the applicability criteria and additional requirements been considered according to the methodology?	-----	Not applicable.	þ	þ
B.3. Description of the project boundary				
B.3.1. Does the project boundary include physical, geographical site where the project ac-	1,2,	The project boundary includes the physical, geographical site (including the reservoir area) where the project activity takes place	þ	þ

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	tivity takes place?	23	and the South-Southeast-Midwest electricity system including net imports from countries such as Argentina and Uruguay.		
B.3.2.	Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?	1,2, 23	Yes. The spatial and technological boundaries as verified on-site comply with the discussion provided by the PDD.	þ	þ
B.4. Description of baseline and its development					
B.4.1.	Have all technically feasible baseline scenario alternatives to the project activity been identified and discussed by the PDD? Why can this list be considered as being complete?	1,2	Feasible baseline scenario alternatives are not discussed in the PDD yet. **Corrective Action Request No.8.** 1. B.4. of the PDD should discuss all feasible baseline scenario alternatives. 2. It should be explained why dispatch data analysis and average OM is not applied. 3. EF calculations were not only prepared by MGM, but also by other project developers. The PDD should reflect this fact.	CAR 8	þ
B.4.2.	Does the project identify correctly and excludes those options not in line with regulatory or legal requirements?	1,2	**Corrective Action Request No.9.** The PDD should exclude those options which are not in line with regulatory or legal requirements or mention that all alternatives are in line with regulatory or legal requirements.	CAR 9	þ
B.4.3.	Have applicable regulatory or legal requirements been identified?	1,2	There have been no regulatory or legal requirements identified in the host country.	þ	þ

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
B.4.4.	Does the PDD identify the most likely baseline scenario in absence of the project activity?	1,2	The most likely baseline scenario is reflected by the continuation of the current situation, i.e. electricity would be generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the CM calculations.	þ	þ
B.4.5.	Is this identification supported by official and/or verifiable documents (e.g. studies, web pages, certificates, etc?	1,2	Balanco Energetico Nacional 2007, Plano Nacional Energetico para 2030 and 10 year Electric Energy Expansion Plan (references all made in the PDD) describes the future energy matrix of the south-southeast-midwest grid to which the project activity belongs. It is predicted that more thermal power plants will provide electricity to the South/Southeast/Midwest grid in the future.	þ	þ
B.4.6.	Is the identified baseline scenario in line with regulatory or legal requirements?	1,2	Yes. The identified baseline scenario is in line with regulatory or legal requirements.	þ	þ
B.5. Description of how the anthropogenic emissions of GHG by sources are reduced below those that would have occurred in the absence of the registered small-scale CDM project activity:					
If the additionality tool has been used please answer B.5.1 to B.5.13					
B.5.1.	Has CDM been considered before the starting date of the project activity? What kind of evidences are available?	------	NA as the additionality tool is not being used.	þ	þ
B.5.2.	In case of applying step 2 / investment analysis of the additionality tool: Is the analysis method identified appropriately (step 2a)?	------	NA	þ	þ
B.5.3.	In case of Option I (simple cost analysis): Is it demonstrated that the activity produces no economic benefits other than	------	NA	þ	þ

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	CDM income?				
B.5.4.	In case of Option II (investment comparison analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	------	NA	þ	þ
B.5.5.	In case of Option III (benchmark analysis): Is the most suitable financial indicator clearly identified (IRR, NPV, cost benefit ratio, or (levelized) unit cost)?	------	NA	þ	þ
B.5.6.	In case of Option II or Option III: Is the calculation of financial figures for this indicator correctly done for all alternatives and the project activity?	------	NA	þ	þ
B.5.7.	In case of Option II or Option III: Is the analysis presented in a transparent manner including publicly available proofs for the utilized data?	------	NA	þ	þ
B.5.8.	In case of applying step 3 (barrier analysis) of the additionality tool: Is a complete list of barriers developed that prevent the different alternatives to occur?	------	NA	þ	þ
B.5.9.	In case of applying step 3 (barrier analysis): Is transparent and documented evidence provided on the existence and significance of these barriers?	------	NA	þ	þ
B.5.10.	In case of applying step 3 (barrier analysis): Is it transparently shown that the execution of at least one of the alterna-	------	NA	þ	þ

CHECKLIST TOPIC / QUESTION		Ref.	COMMENTS	PPD in GSP	Final PDD
	tives is not prevented by the identified barriers?				
B.5.11.	Have other activities in the host country / region similar to the project activity been identified and are these activities appropriately analyzed by the PDD (step 4a)?	------	NA	þ	þ
B.5.12.	If similar activities are occurring: Is it demonstrated that in spite of these similarities the project activity would not be implemented without the CDM component (step 4b)? How?	------	NA	þ	þ
B.5.13.	Is it appropriately explained how the approval of the project activity will help to overcome the economic and financial hurdles or other identified barriers?	------	NA	þ	þ
If the additionality tool has not been used please answer B.5.14 to B.5.19					
B.5.14.	If the starting date of the project activity is before the date of validation, is evidence available to prove that incentive from the CDM was seriously considered in the decision to proceed with the project activity?	1,2,9,12	During the on-site visit the project participants agreed to change the project´s starting date from 01/11/2007 (indicated in the GSP PDD) to 12/02/2008 (purchase contract of the generators). 01/11/2007 was the date of investment decision, when first expenses occurred however only minor pre-project expenses (as e.g. preliminary technical studies, environmental license). The first significant expenditures were related with the purchase of the generators, thus the day when the purchase contract of the generators was signed (12/02/2008), should be taken as project´s starting date, as from that day on, the project is irreversible without big financial losses. This is in accordance to the Glossary of CDM terms, version 04.	**CAR 10**	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		It was presented an excerpt of the 169 th director´s meeting memo and its authenticity has been obviously proved to the validation team. This meeting memo is clearly dated before the project´s starting date and seriously considers CDM in the decision to proceed with the project activity. **Corrective Action Request No.10.** 1. The project´s starting date should be changed to the date of the first purchase contract of the main equipment, namely 12/02/2008 (purchase contract of the generators). 2. Project participants are requested to submit the translated (into English) and registered director´s meeting memo to the validation team.		
B.5.15. Is a complete list of barriers developed that prevents the project activity to occur?	1,2, 24	There are mentioned some barriers in the PDD, however the barrier analysis is not very well structured and some of the barriers are not sufficiently transparent. **Corrective Action Request No.11.** 1. Please describe the fundamental barriers for the project activity in more detail, more transparent and better structured in the PDD, distinguishing between the different barriers applicable to the proposed project activity. Please mention all relevant references in the PDD. 2. Please revise the argument of macro-economic instability in Brazil.	**CAR 11**	**þ**
B.5.16. Does this list include at least one of the following barriers?	1,2, 24	See B.5.15. Barrier | Discussed? | Verifiable?	**See CAR**	**þ**

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Investment: Yes / Yes Technological: No / No Due to prevailing practice: Yes / Yes Other: Yes / Yes	**11**	
B.5.17. Does the discussion sufficiently take into account relevant national and/or sectoral policies?	1,2	Yes. The discussion sufficiently takes into acccount relevant national and/or sectoral policies. However, see B.5.15.	**þ**	**þ**
B.5.18. Is transparent and documented evidence provided on the existence and significance of these barriers?	1,2, 24	See B.5.15.	**CAR 11**	**þ**
B.5.19. Is it appropriately explained how the approval of the project activity will help to overcome the identified barriers?	1,2	**Corrective Action Request No.12.** Please explain in more detail how the CDM approval of the project activity will help to overcome the identified barriers.	**CAR 12**	**þ**
B.6. Emissions reductions				
B.6.1. *Explanation of methodological choices*				
B.6.1.1. Is it explained how the procedures provided in the methodology are applied by the proposed project activity?	1,2, 23	The procedures provided in the methodology are applied by the proposed project activity.	**þ**	**þ**
B.6.1.2. Is every selection of options offered by the methodology correctly justified and is this justification in line with the situation verified on-site?	1,2, 23	Yes. Every selection of options offered by the methodology is correctly justified and is in line with the situation verified on-site.	**þ**	**þ**
Determination of project emissions (Comment on any line answered “No”)				

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B.6.1.3. Component 1: emissions from use of fossil fuel	1,2, 23	<table><tr><td>Project emission checklist</td><td>Yes / No</td></tr><tr><td>Component discussed in the PDD?</td><td>NA</td></tr><tr><td>Formulae correctly applied?</td><td>NA</td></tr></table>	þ	þ
B.6.1.4. Are the formulae required for the determination of baseline emissions correctly presented, enabling a complete identification of parameters to be used and / or monitored?	1,2, 23	The formula required for the determination of baseline emissions is correctly presented.	þ	þ
B.6.1.5. Are the formulae required for the determination of leakage emissions correctly presented, enabling a complete identification of parameter to be used and / or monitored?	1,2, 23	NA, as there are no leakage emissions.	þ	þ
B.6.1.6. Are the formulae required for the determination of emission reductions correctly presented?		The formula required for the determination of emission reductions is correctly presented in B.6.3. of the PDD.	þ	þ
B.6.2. *Data and parameters that are available at validation*				
B.6.2.1. Is the list of parameters presented in chapter B.6.2 considered to be complete with regard to the requirements of the applied methodology?	1,2, 23	The list of parameters presented in chapter B.6.2. is considered to be complete.	þ	þ
Comment on any line answered with “No”. Add additional parameters used for the calculation of the grid factors if necessary.				
B.6.2.2. Parameter Title:	------	NA	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
Annual electricity supplied to the grid prior to retrofit (applicable only for retrofit and modification activities)		Data Checklist / Yes / No Title in line with methodology? Data unit correctly expressed? Appropriate description of parameter? Source clearly referenced? Correct value provided? Has this value been verified? Choice of data correctly justified? Measurement method correctly described?		
B.6.2.3. Parameter Title: Emission factor of the grid (CM) Note: CM should be calculated as per the procedures described in the "Tool to calculate the emission factor for an electricity system"	1,2, 13, 23, 28	Data Checklist / Yes / No Title in line with methodology? Yes Data unit correctly expressed? Yes Appropriate description of parameter? Yes Source clearly referenced? Yes Correct value provided? Yes Has this value been verified? Yes Choice of data correctly justified? Yes	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Measurement method correctly described? — Yes		
B.6.2.4. Parameter Title: Operating margin (OM) emission factor of the grid. Note: OM should be calculated as per the procedures described in the "Tool to calculate the emission factor for an electricity system"	1,2, 13, 23, 28	Data Checklist / Yes / No: Title in line with methodology? Yes; Data unit correctly expressed? Yes; Appropriate description? Yes; Source clearly referenced? Yes; Correct value provided? Yes; Has this value been verified? Yes; Choice of data correctly justified? Yes; Measurement method correctly described? Yes	þ	þ
B.6.2.5. Parameter Title: Build margin (BM) emission factor of the grid. Note: BM should be calculated as per the procedures described in the "Tool to calculate the emission factor for an electricity system"	1,2, 13, 23, 28	Data Checklist / Yes / No: Title in line with methodology? Yes; Data unit correctly expressed? Yes; Appropriate description of parameter? Yes	þ	þ

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td><table>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
<tr><td>Correct value provided?</td><td>Yes</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Choice of data correctly justified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
</table></td><td></td><td></td></tr>
<tr><td>B.6.2.6. Parameter Title:
fuel consumption of each power source</td><td>1,2,
13,
23,
28</td><td><table>
<tr><th>Data Checklist</th><th>Yes / No</th></tr>
<tr><td>Title in line with methodology?</td><td>Yes</td></tr>
<tr><td>Data unit correctly expressed?</td><td>Yes</td></tr>
<tr><td>Appropriate description of parameter?</td><td>Yes</td></tr>
<tr><td>Source clearly referenced?</td><td>Yes</td></tr>
<tr><td>Correct value provided?</td><td>Yes</td></tr>
<tr><td>Has this value been verified?</td><td>Yes</td></tr>
<tr><td>Choice of data correctly justified?</td><td>Yes</td></tr>
<tr><td>Measurement method correctly described?</td><td>Yes</td></tr>
</table></td><td>þ</td><td>þ</td></tr>
</table>

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td>B.6.2.7. Parameter Title:
emission coefficient of each fuel</td><td>1,2,
13,
23,
28</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td>þ</td><td>þ</td></tr>
<tr><td>B.6.2.8. Parameter Title:
electricity generation of each power source</td><td>1,2,
13,
23,
28</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr></table></td><td>þ</td><td>þ</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Choice of data correctly justified? — Yes Measurement method correctly described? — Yes		
B.6.2.9. Parameter Title: surface area of full reservoir level (for new hydroelectric activities only)	1,2, 13, 23, 28	Not applicable, as parameter is monitored once at the project start. Data Checklist — Yes / No Title in line with methodology? — N/A Data unit correctly expressed? — N/A Appropriate description of parameter? — N/A Source clearly referenced? — N/A Correct value provided? — N/A Has this value been verified? — N/A Choice of data correctly justified? — N/A Measurement method correctly described? — N/A	þ	þ
B.6.2.10. Parameter Title: fraction of time with low costs /must run plant at the margin (for simple adjusted OM only)	1,2, 13, 23, 28	Data Checklist — Yes / No Title in line with methodology? — Yes	þ	þ

Table 1 is applicable to AMS I.D. 13

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided? — Yes Has this value been verified? — Yes Choice of data correctly justified? — Yes Measurement method correctly described? — Yes		
B.6.2.11. Parameter Title: electricity imports	1,2, 13, 23, 28	Data Checklist — Yes / No Title in line with methodology? — Yes Data unit correctly expressed? — Yes Appropriate description of parameter? — Yes Source clearly referenced? — Yes Correct value provided? — Yes Has this value been verified? — Yes Choice of data correctly justified? — Yes Measurement method correctly described? — Yes	þ	þ

<table>
<tr><th>CHECKLIST TOPIC / QUESTION</th><th>Ref.</th><th>COMMENTS</th><th>PPD in GSP</th><th>Final PDD</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>B.6.2.12. Parameter Title:
CO_2 emission coefficient of fuels used in connected grids</td><td>1,2, 13, 23, 28</td><td><table><tr><th>Data Checklist</th><th>Yes / No</th></tr><tr><td>Title in line with methodology?</td><td>Yes</td></tr><tr><td>Data unit correctly expressed?</td><td>Yes</td></tr><tr><td>Appropriate description of parameter?</td><td>Yes</td></tr><tr><td>Source clearly referenced?</td><td>Yes</td></tr><tr><td>Correct value provided?</td><td>Yes</td></tr><tr><td>Has this value been verified?</td><td>Yes</td></tr><tr><td>Choice of data correctly justified?</td><td>Yes</td></tr><tr><td>Measurement method correctly described?</td><td>Yes</td></tr></table></td><td>þ</td><td>þ</td></tr>
<tr><td colspan="5">B.6.3. Ex-ante calculation of emission reductions</td></tr>
<tr><td>B.6.3.1. Is the projection based on the same procedures as used for future monitoring? What kind of procedure is used?</td><td>1,2, 13, 23, 28</td><td>Yes. The projection is based on the same procedures as used for future monitoring.
The EF is determined using the “Tool to calculate the emission factor for an electricity system”, version 01.1, consisting of the combination of the operating margin and the build margin factors.</td><td>þ</td><td>þ</td></tr>
<tr><td>B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?</td><td>1,2, 13,</td><td>Yes. The GHG calculations are documented in a complete and transparent manner.</td><td>þ</td><td>þ</td></tr>
</table>

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
	23, 28			
B.6.3.3. If there is more than one component of the project activity, then, are emission reduction calculations provided separately for each component?	------	NA	þ	þ
B.6.3.4. Is the data provided in this section consistent with data as presented in other chapters of the PDD?	1,2, 13, 23, 28	The amount of electricity generation (in MWh) is inconsistent within chapter B.6.3. and with chapter A.4.2. See A.4.2.6.	**See CAR 5**	þ
B.6.4. *Summary of the ex-ante estimation of emission reductions*				
B.6.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	1,2	Yes. The project will definitely result in fewer GHG emissions than in the baseline scenario.	þ	þ
B.6.4.2. Is the form/table required for the indication of projected emission reductions correctly applied?	1,2	Yes. The table required for the indication of projected emission reductions is correctly applied.	þ	þ
B.6.4.3. If the project activity involves more than one component, is separate table included for each of the component.	------	NA	þ	þ
B.6.4.4. Do these values comply with small-scale criteria for every year?	------	NA	þ	þ
B.6.4.5. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	1,2, 16	The start of the crediting period is indicated in the PDD for April 01, 2009. During the on-site visit it became obvious that the start of the crediting period will be some months later. **Corrective Action Request No.13.**	**CAR 13** **See CAR 6**	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Please revise the start of the crediting period as discussed on-site and consequently the emission reductions tables. See also A.4.2.11.		
B.6.4.6. Is the data provided in this section in consistency with data as presented in other chapters of the PDD?	1,2	Yes. The data provided in this section is in consistency with data as presented in other chapters of the PDD.	þ	þ
B.7. Application of the monitoring methodology and description of the monitoring plan				
B.7.1. *Data and parameters monitored*				
B.7.1.1. Is the list of parameters presented in chapter B.7.1 considered to be complete with regard to the requirements of the applied methodology?	1,2, 23	The list of parameters presented in chapter B.7.1. is not considered to be complete. According to EB 23, §28 and Annex 5, power density has to be calculated and surface area at full reservoir level has to be monitored once at project start. In case the power plant has to stop for any reason (breakdown, maintenance), it might be that some electricity has to be imported from the grid. Thus, electricity imports should be monitored. **Corrective Action Request No.14.** Please add the parameters a) "Surface area at full reservoir level" and "Electricity imported" in B.7.1. of the PDD.	**CAR 14**	þ
Comment on any line answered with "No"				
B.7.1.1.1. Parameter Title: Electricity exported by the renewable technology	1,2, 23	**Corrective Action Request No.15.** Regarding the parameter: "Electricity generated by the renewable technology": Please indicate as per EB 23, §24 the reference to standards, accuracy of the meter and calibration standards. Please revise the value as well as the description. Monitoring Checklist | Yes / No Title in line with methodology? | Yes	**CAR 15**	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Data unit correctly expressed? — Yes Appropriate description of parameter? — No Source clearly referenced? — Yes Correct value provided for estimation? — No Has this value been verified? — Yes Measurement method correctly described? — Yes Correct reference to standards? — No Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No		
B.7.1.1.2. Parameter Title: Electricity imported		See B.7.1.1. Monitoring Checklist — Yes / No Title in line with methodology? — No Data unit correctly expressed? — No Appropriate description of parameter? — No Source clearly referenced? — No Correct value provided for estimation? — No Has this value been verified? — No Measurement method correctly described? — No Correct reference to standards? — No Indication of accuracy provided? — No QA/QC procedures described? — No QA/QC procedures appropriate? — No	**See CAR 14 and CAR 15**	**þ**
B.7.1.1.3. Amount of biomass input (if applicable)	------	NA Monitoring Checklist — Yes / No Title in line with methodology?	**þ**	**þ**

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		Data unit correctly expressed? | Appropriate description of parameter? | Source clearly referenced? | Correct value provided for estimation? | Has this value been verified? | Measurement method correctly described? | Correct reference to standards? | Indication of accuracy provided? | QA/QC procedures described? | QA/QC procedures appropriate? |		
B.7.1.1.4. Amount of fossil fuel (if applicable)	------	NA Monitoring Checklist | Yes / No Title in line with methodology? | Data unit correctly expressed? | Appropriate description of parameter? | Source clearly referenced? | Correct value provided for estimation? | Has this value been verified? | Measurement method correctly described? | Correct reference to standards? | Indication of accuracy provided? | QA/QC procedures described? | QA/QC procedures appropriate? |	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
B.7.1.1.5. Parameter Title: Surface area at full resevoir level	1,2, 23	See B.7.1.1. Monitoring Checklist / Yes / No: Title in line with methodology? No Data unit correctly expressed? No Appropriate description of parameter? No Source clearly referenced? No Correct value provided for estimation? No Has this value been verified? No Measurement method correctly described? No Correct reference to standards? No Indication of accuracy provided? No QA/QC procedures described? No QA/QC procedures appropriate? No	**See CAR 14**	**þ**
B.7.2. *Description of the monitoring plan*				
B.7.2.1. Is the operational and management structure clearly described and in compliance with the envisioned situation?	1,2, 21	**Corrective Action Request No.16.** Please describe the operational and management structure in the PDD, if possible in a diagram.	**CAR 16**	**þ**
B.7.2.2. Are responsibilities and institutional arrangements for data collection and archiving clearly provided?	1,2, 21	AES Tiete S.A. will be responsible for data collection, management and archiving.	**þ**	**þ**
B.7.2.3. Does the monitoring plan provide current good monitoring practice?	1,2, 19, 20, 21	**Corrective Action Request No.17.** 1. Please provide more information regarding data collection, measurement and quality assurance procedures (amongst others calibration). 2. It should be clearly described how the bi-directional measurement of the power meter works.	**CAR 17**	**þ**
B.7.2.4. If applicable: Does annex 4 provide useful	1,2,	Annex 4 provides some more useful information enabling a better	**þ**	**þ**

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
information enabling a better understanding of the envisioned monitoring provisions?	19, 20, 21	understanding of the envisioned monitoring provisions		
B.8. Date of completion of the application of the baseline study and monitoring methodology an the name of the responsible person(s)/entity(ies)				
B.8.1.1. Is there any indication of a date when the baseline was determined?	1,2	Yes. The baseline was completed on 04/03/2008.	þ	þ
B.8.1.2. Has dd/mm/yyyy format been used to indicate the date.	1,2	Yes. The right format has been applied.	þ	þ
B.8.1.3. Is this consistent with the time line of the PDD history?	1,2	Yes. It is consistent with the time line of the PDD history.	þ	þ
B.8.1.4. Is the information on the person(s) / entity (ies) responsible for the application of the baseline and monitoring methodology provided consistent with the actual situation?	1,2	Yes. Demóstenes Barbosa Silva (AES Tietê S.A.) has been responsible for the application of the baseline and monitoring methodology.	þ	þ
B.8.1.5. Is information provided whether this person / entity is also considered a project participant?	1,2	Yes. AES Tietê S.A is project participant.	þ	þ
C. Duration of the project activity / crediting period				
C.1. Duration of the project activity				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable? Is it the earliest date of construction, implementation or real action?	1,2	The operational lifetime is defined for 30 years. This is reasonable and standard for hydropower technology.	þ	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
C.2. Choice of the crediting period and related information				
C.2.1. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 7 years with potential for 2 renewals or fixed crediting period of max. 10 years)?	1,2	Project participants have chosen the renewable crediting period of max. 7 years with potential for 2 renewals. See B.6.4.5.	**See CAR 13**	**þ**
C.2.2. Has dd/mm/yyyy format been used to indicate the start date of the crediting period.	1,2	Yes. The correct format is used.	**þ**	**þ**
D. Environmental impacts				
D.1. If required by the host Party, documentation on the analysis of the environmental impacts of the project activity:				
D.1.1. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, has an EIA been approved? If yes answer also D.1.2 to D.1.4	1.2,4 ,11, 25	An EIA was not necessary for the proposed project activity. This was verified on-site. However, a preliminary environmental report (RAP) (amongst others including the environmental impacts of the proposed project activity) has been conducted and was presented to the validation team.	**þ**	**þ**
D.1.2. Has the analysis of the environmental impacts of the project activity been sufficiently described?	1.2,4 ,11, 25	**Corrective Action Request No.18.** 1. Please describe the environmental impacts of the project activity, even if small, in the PDD. 2. Please describe the couse of actions which were taken related to the preliminary environmental report (RAP).	**CAR 18**	**þ**
D.1.3. Will the project create any adverse environmental effects?	1.2,4 ,11, 25	The project will not create any significant adverse environmental effects. See CAR 18	**See CAR 18**	**þ**
D.1.4. Were transboundary environmental impacts identified in the analysis?	1.2,4 ,11, 25	There are no transboundary environmental impacts involved with the project activity. This is mentioned in the PDD.	**þ**	**þ**

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
D.2. If environmental impacts are considered significant by the project participants or the host Party, please provide conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the host Party				
D.2.1. Have the identified environmental impacts been addressed in the project design sufficiently?	1.2,4 ,11, 25	The environmental impact is considered small as compared to other types of power generation alternatives. See D.1.2.	**See CAR 18**	**þ**
D.2.2. Does the project comply with environmental legislation in the host country?	1.2,4 ,11, 25	The project complies with the environmental legislation in the host country. The environmental installation licenses have been presented to the validation team.	**þ**	**þ**
E. Stakeholders' comments				
E.1. Brief description how comments by local stakeholders have been invited and compiled				
E.1.1. Have relevant stakeholders been consulted?	1,2, 14	Yes. Relevant stakeholders have been consulted via Emails and letters sent by postal. The letters and Emails have been presented to the validation team. However, 1. the receipt confirmation of those letters were not available during the on-site audit. 2. The invitation of two stakeholders mentioned in the PDD were not confirmed by letters on-site. 3. Two stakeholders invited are not mentioned in the PDD. **Corrective Action Request No.19.** 1. Please submit the receipt confirmations of the invitation letters to the validation team.	**CAR 19**	**þ**

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
		2. Please submit the invitation letters for the following stakeholders mentioned in the PDD: Associacao de Usuarios das Aguas and Secretaria Municipal de meio ambiente de Sao Joao da Boa Vista. 3. Please mention the following stakeholders which were invited for comments but are not mentioned in the PDD: Promotoria de Justica and Departamento de Engenharia e Meio Ambiente. 4. Please provide the English translation for the stakeholders invited.		
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	1,2, 14	Invitations have been sent by postal and Emails. These media are considered to be appropriate.	þ	þ
E.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	1,2	The Brazilian DNA gives guidance how the local stakeholder process has to be conducted. The validation team confirms that the process has been performed as required.	þ	þ
E.1.4. Is the undertaken stakeholder process that was carried out described in a complete and transparent manner?	1,2	Yes. The undertaken stakeholder process is described in a complete and transparent manner.	þ	þ
E.2.Summary of the comments received				
E.2.1. Is a summary of the received stakeholder comments provided?	1,2, 18	**Corrective Action Request No.20.** Please update E.2. of the PDD, as one comment has been already received.	**CAR 20**	þ

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
E.3. Report on how due account was taken of any comments received				
E.3.1. Has due account been taken of any stake-holder comments received?	1,2, 18	See E.2.1.	**See CAR 20**	**þ**
F. Annexes 1 - 4				
F.1. Annex 1: Contact Information				
F.1.1. Is the information provided consistent with the one given under section A.3?	1,2	Yes. The information provided in Annex 1 is consistent with the one given under section A.3.	**þ**	**þ**
F.1.2. Is the information on all private participants and directly involved Parties presented?	1,2	Yes. All information on all project participants is presented.	**þ**	**þ**
F.2. Annex 2: Information regarding public funding				
F.2.1. Is the information provided on the inclusion of public funding (if any) in consistency with the actual situation presented by the project par-ticipants?	1,2	Yes. All information is consistent.	**þ**	**þ**
F.2.2. If necessary: Is an affirmation available that any such funding from Annex-I-countries does not result in a diversion of ODA?	1,2	Not applicable, as no funding involved.	**þ**	**þ**
F.3. Annex 3: Baseline information				
F.3.1. If additional background information on base-line data is provided: Is this information con-sistent with data presented by other sections of the PDD?	1,2, 13	Additional background information on baseline data is consistent with data presented by other sections of the PDD.	**þ**	**þ**
F.3.2. Is the data provided verifiable? Has sufficient	1,2,	Yes. The Excel calculation sheet for the calculation of the emis-	**See**	**þ**

CHECKLIST TOPIC / QUESTION	Ref.	COMMENTS	PPD in GSP	Final PDD
evidence been provided to the validation team?	13, 16	sions factor has been submitted during the on-site visit. See B.6.4.5.	**CAR 13**	
F.3.3. Does the additional information substantiate / support statements given in other sections of the PDD?	1,2, 13	Yes.	**þ**	**þ**
F.4. Annex 4: Monitoring information				
F.4.1. If additional background information on monitoring is provided: Is this information consistent with data presented in other sections of the PDD?	1,2, 19, 20, 21	Yes. The information provided in Annex 4 is consistent with the information provided in B.7.2. of the PDD.	**þ**	**þ**
F.4.2. Is the information provided verifiable? Has sufficient evidence been provided to the validation team?	1,2, 19, 20, 21	See B.7.2.1. and B.7.2.3.	**See CAR 16** **See CAR 17**	**þ**
F.4.3. Do the additional information and / or documented procedures substantiate / support statements given in other sections of the PDD?	1,2, 19, 20, 21	The information provided in Annex 4 substantiates the information given in other sections of the PDD.	**þ**	**þ**

Table 2 Resolution of Corrective Action and Clarification Requests

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
Corrective Action Request No.1. 1. Manufacturer of turbines and generators should be indicated. 2. Technical characteristics of turbines and generators should be updated according to the purchase contracts, including the quantities. Power densities of the hydroplants should be indicated. 3. Purchase contract for turbines (SHP Sao Joaquim) should be submitted to the validation team.	A.2.5.	• The manufacturer of turbines and generators was indicated in section A.4.2. • The technical characteristics of turbines and generators were updated in section A.4.2. Power densities were indicated. • The purchase contract for turbines (SHP São Joaquim) was submitted to the validation team.	**Answer 26.04.2008:** 1. Manufacturer of turbines and generators are indicated in the last submitted PDD. 2. Technical characteristics of turbines and generators were updated in the last submitted PDD. Power densities were indicated in the last submitted PDD. 3. The purchase contract for the turbine (SHP São Joaquim) was submitted. **CAR 1 is considered to be resolved. þ**
Corrective Action Request No.2. 1. Please include below the Table in A.3.: (*) In accordance with the CDM modalities and procedures, at the time of making the CDM-PDD public at the stage of validation, a Party involved may or may not have provided its approval. At the time of requesting registration, the approval by the Party(ies) involved is required.	A.3.1.	• The text was included in Table A.3.	**Answer 26.04.2008:** Required information has been included in the last submitted PDD. **CAR 2 is considered to be resolved. þ**

2. Further contact information of project participants is provided in Annex 1.			
Corrective Action Request No.3. A declaration of the project participants evidencing the voluntary project participation should be submitted to the validation team.	A.3.2.	• A declaration of the project participants evidencing the voluntary participation was submitted to the validation team.	**Answer 26.04.2008:** A signed declaration has been submitted by the project participants to the validation team confirming the voluntary participation in the given CDM project activity. **CAR 3 is considered to be resolved. þ**
Corrective Action Request No.4. 1. Please include the seconds of the GPS coordinates. 2. Please include information in the PDD from which location the GPS coordinates were taken. 3. The map (Figure 1) should be more illustrative.	A.4.1.1.	• The seconds of the GPS coordinates was included in section A.4.1.4. • It was indicated in section A.4.1.4 that the GPS coordinates were taken from each power house. • The map was enlarged in section A.4.1.4.	**Answer 26.04.2008:** 1. Seconds were included. 2. GPS coordinates are from the power house. 3. Map is more illustrative in the last submitted PDD. **CAR 4 is considered to be resolved. þ**
Corrective Action Request No.5. Information about capacity factors and estimated electricity generation should be revised in A.4.2., B.6.3. and B.7.1. Capacity factors should be based on the more conservative assured electricity as discussed on-site. Please provide consistent information regarding the estimated electricity for the	A.4.2.6.	• The estimated electricity for the emission reductions calculation was revised, based on more conservative capacity factors and assured energy. Consistent information was provided in sections A.4.2, B.6.3, B.7.1.	**Answer 26.04.2008:** Information about capacity factors and estimated electricity generation was revised in A.4.2., B.6.3. and B.7.1. Capacity factors are based on the more conservative assured electricity in the last

emission reductions calculation.			submitted PDD. **CAR 5 is considered to be resolved. þ**
Corrective Action Request No.6. 1. A schedule for the implemtentation of the project activity has to be submitted to the validation team. 2. The time schedule for the implemenation of the project activity should be included into the PDD (including the information of CDM consideration).	A.4.2.11.	• A schedule for the implemtentation of the project activity was submitted to the validation team. • The time schedule for the implementation of the project activity was included into section A.4.2 of the PDD (including the information of CDM consideration).	**Answer 26.04.2008:** Schedule for project implementation was submitted to the validation team and included in the last submitted PDD. CDM consideration is included into the project´s schedule. **CAR 6 is considered to be resolved. þ**
Corrective Action Request No.7. B.2. of the PDD should inform that the project activity does not consist of a combined heat and power (co-generation) system.	B.2.1.3.	• Information that the project activity does not consist of a combined heat and power (co-generation) system was included in section B.2. of the PDD.	**Answer 26.04.2008:** Requested information was included in B.2. of the last submitted PDD. **CAR 7 is considered to be resolved. þ**
Corrective Action Request No.8. 1. B.4. of the PDD should discuss all feasible baseline scenario alternatives. 2. It should be explained why dispatch data analysis and average OM is not applied. 3. EF calculations were not only prepared by MGM, but also by other project developers. The PDD should reflect this fact.	B.4.1.	• A discussion on baseline scenario alternatives was included in section B.4 of the PDD. • An explanation on why dispatch data analysis and average OM was not applied was included. • Other project developers were added.	**Answer 26.04.2008:** 1. Baseline scenario alternatives are discussed in the last submitted PDD. 2. It is explained in the last submitted PDD why dispatch data analysis and average OM is not applied. 3. All project developers pre-

			paring the EF calculation were added in the last submitted PDD. **CAR 8 is considered to be resolved. þ**
Corrective Action Request No.9. The PDD should exclude those options which are not in line with regulatory or legal requirements or mention that all alternatives are in line with regulatory or legal requirements.	B.4.2.	• It was mentioned that all alternatives are in line with regulatory or legal requirements in section B.4.	**Answer 26.04.2008:** The last submitted PDD mentions that all options are in line with regulatory or legal requirements. **CAR 9 is considered to be resolved. þ**
Corrective Action Request No.10. 1. The project´s starting date should be changed to the date of the first purchase contract of the main equipment, namely 12/02/2008 (purchase contract of the generators). 2. Project participants are requested to submit the translated (into English) and registered director´s meeting memo to the validation team.	B.5.14.	• The project's starting date was changed to 12/02/2008 (purchase contract of the generators). • A translated version and registered director's meeting memo will be submitted to the validation team.	**Answer 26.04.2008:** 1. The project´s starting date was changed in the last submitted PDD to 12/02/2008, the first purchase contract of the generators. **Answer 12.05.2008:** 2. The director´s meeting memo has been submitted in English language to the validation team. **CAR 10 is considered to be resolved. þ**
Corrective Action Request No.11. 1. Please describe the fundamental barriers for the project activity in more detail, more transparent and better struc-	B.5.15.	• The barrier discussion included in section B.5 was modified and better structured. • The argument of macroeconomic instability was revised.	**Answer 26.04.2008:** 2. The argument of macroeconomic instability was taken out of the last submit-

tured in the PDD, distinguishing between the different barriers applicable to the proposed project activity. Please mention all relevant references in the PDD. 2. Please revise the argument of macro-economic instability in Brazil.			ted PDD. **Answer 12.05.2008:** 1. The barrier analysis was modified and is better structured in the last submitted PDD. Evidences for barriers have been submitted in English language to the validation team. **CAR 11 is considered to be resolved. þ**
Corrective Action Request No.12. Please explain in more detail how the CDM approval of the project activity will help to overcome the identified barriers.	B.5.19.	• A more detailed explanation was included in section B.5.	**Answer 26.04.2008:** A more detailed explanation has been delivered in the last submitted PDD. **CAR 12 is considered to be resolved. þ**
Corrective Action Request No.13. Please revise the start of the crediting period as discussed on-site and consequently the emission reductions tables.	B.6.4.5.	• The start of the crediting period was revised to October 1st, 2009, and consequently the emission reduction tables on sections A.4.3 and B.6.4.	**Answer 26.04.2008:** The start of the crediting period was revised to 01/10/2009; emission reduction tables have been corrected. **CAR 13 is considered to be resolved. þ**
Corrective Action Request No.14. Please add the parameters a) "Surface area at full reservoir level" and "Electricity imported" in B.7.1. of the PDD.	B.7.1.1.	• The parameter "Surface area at full reservoir level" and "electricity imported" were added to section B.7.1.	**Answer 26.04.2008:** Parameter "Surface area at full reservoir level" and "electricity imported" were added

			in section B.7.1. of the last submitted PDD. **CAR 14 is considered to be resolved. þ**
Corrective Action Request No.15. Regarding the parameter: "Electricity generated by the renewable technology": Please indicate as per EB 23, §24 the reference to standards, accuracy of the meter and calibration standards. Please revise the value as well as the description.	B.7.1.1.1.	• The value and description for the parameter "Electricity generated by the renewable technology" was revised in section B.7.1.	**Answer 26.04.2008:** Regarding the parameter "electricity generated by the renewable technology": value and description were revised; reference to standards, accuracy of the meter and calibration standards were indicated in the last submitted PDD. **CAR 15 is considered to be resolved. þ**
Corrective Action Request No.16. Please describe the operational and management structure in the PDD, if possible in a diagram.	B.7.2.1.	• A description of the operational and management structure was included in section B.7.2.	**Answer 26.04.2008:** The operational and management structure was included in B.7.2. of the last submitted PDD. **CAR 16 is considered to be resolved. þ**
Corrective Action Request No.17. 1. Please provide more information regarding data collection, measurement and quality assurance procedures (amongst others calibration). 2. It should be clearly described how the bi-directional measurement of the	B.7.2.3.	• Information regarding data collection, measurement and quality assurance procedures (amongst others calibration) was added to section B.7.2. • A description of how the bi-directional measurement of the power meter works was included to section B.7.2.	**Answer 26.04.2008:** 1. More information regarding data collection, measurement and quality assurance procedures has been provided in the last submitted PDD. 2. A short description of bi-

power meter works.			directional measurement of the power meter was included in B.7.2. of the last submitted PDD. **CAR 17 is considered to be resolved. þ**
Corrective Action Request No.18. 1. Please describe the environmental impacts of the project activity, even if small, in the PDD. 2. Please describe the couse of actions which were taken related to the preliminary environmental report (RAP).	D.1.2.	• A discussion about the environmental impacts of the project activity was included in section D.1. • The course of actions related to the preliminary environmental report was included in section D.1.	**Answer 26.04.2008:** 1. A discussion about the environmental impacts was inlcuded in the last submitted PDD. 2. The course of actions taken related to the RAP was included in the last submitted PDD. **CAR 18 is considered to be resolved. þ**
Corrective Action Request No.19. 1. Please submit the receipt confirmations of the invitation letters to the validation team. 2. Please submit the invitation letters for the following stakeholders mentioned in the PDD: Associacao de Usuarios das Aguas and Secretaria Municipal de meio ambiente de Sao Joao da Boa Vista. 3. Please mention the following stakeholders which were invited for comments but are not mentioned in the	E.1.1.	• The receipt confirmations of the invitation letters were submitted to the validation team. • It was verified that there is no Associação de Usuarios das Águas and this stakeholder was taken out of section E.1. The Secretaria Municipal de meio ambiente de Sao Joao da Boa Vista is represented by the Departamento de Engenharia e Meio Ambiente. • The stakeholder Promotoria de Justica was added to the PDD. • The English translation for the stakeholders invited was provided.	**Answer 26.04.2008:** 1. Receipt confirmations were submitted to the validation team. 2. Answer is accepted by the validation team. 3. Stakeholder “Promotoria de Justica” was added in the last submitted PDD. 4. Answer is accepted by the validation team. **CAR 19 is considered to be**

PDD: Promotoria de Justica and Departamento de Engenharia e Meio Ambiente. 4. Please provide the English translation for the stakeholders invited.			**resolved. þ**
Corrective Action Request No.20. Please update E.2. of the PDD, as one comment has been already received.	E.2.1.	• Section E.2 of the PDD was updated.	**Answer 26.04.2008:** Section E.2. of the PDD was updated. **CAR 20 is considered to be resolved. þ**
Clarification Request No.1. Please provide information how the project activity will be financed (relation of own equity to debt capital).	A.4.4.1.	• The project will be financed on an 100% equity basis.	**Answer 26.04.2008:** Project will be financed 100 % by own equity capital. A respective declaration signed by Demóstenes Barbosa da Silva, Environmental and Carbon Credit Director of AES Tiete was submitted to the validation team confirming the financing by own equity capital. No public funding is involved. **CR 1 is considered to be resolved. þ**

Table 3 Unresolved Corrective Action and Clarification Requests (in case of denials)

Clarifications and / or corrective action requests by validation team	Id. of CAR/CR	Explanation of Conclusion for Denial
-	-	-

Industrie Service

Annex 2: Information Reference List

Reference No.	Document or Type of Information
1	On-site interview at “AES Tietê S.A.”, Sao Paulo by auditing team of TÜV SÜD **Validation team on-site:** Johann Thaler TÜV SÜD do Brasil **Interviewed persons:** Date: 04/04/2008 Representatives of AES Tietê S.A. Clauber Leite, Environmental Engineer Samy Hotimsky, Project Developer Roberto Sattamini , Project Director Marianna Silva, Environmental analyst Demóstenes Barbosa da Silva, Environmental Director Other participants: Roberto Kishinami, Environmental Consultant, NRG Ltda.
2	Project Design Document “Jaguari Mirim River Hydroelectric Plants “, version 01, 26/03/2008, submitted on March 28, 2008.
3	ANEEL Resolution N° 730, dated 18.12.2002 (Authorization Contract SHP Sao Jose), ANEEL Resolution N° 733, dated 18.12.2002 (Authorization Contract SHP Sao Joaquim), including GPS coordinates, pdf-files, submitted on April, 04, 2008.

Reference No.	Document or Type of Information
4	Installation license (Sao Joaquim) , N° 00353, Process N° 13.651/2001, dated 19/07/2005, valid for 5 years, issued by Secretaria do Meio Ambiente do Estado de São Paulo – SMA, Installation license (Sao Jose) , N° 00352, Process N° 13.648/2001, dated 19/07/2005, valid for 5 years, issued by Secretaria do Meio Ambiente do Estado de São Paulo – SMA, pdf-file, submitted on April, 04, 2008
5	Basic technical studies including technical summaries for SHP Sao Jose and SHP Sao Joaquim, MEK Engenharia, dated November 2006, word-file, submitted on April 04, 2008.
6	Registro fotografico_06/2007 – PCHs Sp.1, powerpoint presentation, submitted on April 04, 2008.
7	Technical Report, dated 10/2007, Visual inspection and assessment of the civil structures of the SHP Sao Joaquim, paper-copy, submitted on April 04, 2008.
8	Purchase contract between AES Tietê S.A and SEMI Industrial Ltda. for turbines of SHP Sao Jose, N° DC/PCH/004/2008, signed on 21/02/2008, pdf-file, submitted on April 04, 2008.
9	Evidence for the project´s starting date: Purchase contract between AES Tietê S.A. and FLESSAK Eletro Industrial Ltda. for generators of SHP Sao Jose and SHP Sao Joaquim, N° DC/PCH/008/2008, signed on 12/02/2008, pdf-file, submitted on April 04, 2008.
10	6 Registries of land purchase, dated 07/01/2008, pdf-files, submitted on April 04, 2008.
11	Preliminary environmental reports for SHP Sao Joaquim, dated 08/2003 SHP Sao Jose, dated 09/2003, pdf-files, submitted on April 04, 2008.
12	Evidence for CDM consideration: Excerpt of the 169th director´s meeting memo „Extrato de ata da 169a reuniao de diretoria PCH´s – Jaguari Mirim“, dated 13/11/2007, pdf-file, submitted on April 04, 2008 and translated in English language submitted on May 12, 2008.

Reference No.	Document or Type of Information
13	EF calculation sheet “BR-Grid EF SSECO-2004 to 2006-2007.07.30”, excel-file, submitted on April 04, 2008.
14	10 Invitation letters (dated 26/03/2008) and 10 Emails (dated April 03-04, 2008) to local stakeholders, pdf-files and html documents, submitted on April 04, 2008.
15	Investment costs “Jaguari Mirim_Propostas_jan08_Final.1”, excel file, submitted on April 04, 2008.
16	CER calculation sheet “Jmirim ER calculations 20071212”, excel file, submitted on April 04, 2008.
17	Calculation of capacity factors, “PCHs_SP_EASS”, excel file, submitted on April 04, 2008.
18	Stakeholder response, dated 02/04/2008, html file, submitted on April 04, 2008.
19	Procedures for measurement, AES Tietê, MED-001, revision 00, dated 01/05/2007, pdf-file, submitted on April 04, 2008.
20	ONS Submoduls 12.1-12.6, “measurement for invoicing”, dated 31/01/2007, pdf-files, submitted on April 04, 2008.
21	Organigram about the management and operational structure of the Jaguari Mirim Project, power point file, submitted on April 04, 2008.
22	Purchase proposal for turbines for SHP Sao Joaquim by Hacker Industrial Ltda., N° PPC264/07, dated 24/04/2007 , pdf-file, submitted on April 04, 2008.
23	AMS I-D, version 13, Grid connected renewable electricity generation, EB 36.
24	Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities.
25	RESOLUÇÃO CONAMA N. 1, DE 23.01.86, pdf-file, submitted on March 04, 2008.
26	IPCC: Revised 2006 Guidelines for National Greenhouse Gas Inventories
27	IPCC: 2000, Good Practice Guidance
28	Tool to calculate the emission factor for an electricity system, version 01.1

Reference No.	Document or Type of Information
29	Declaration signed by the project participants about the voluntary participation in the CDM project activity, dated 03/04/2008, jpg-file, submitted on April 23, 2008
30	Project implementation schedule for the 2 SHPs, dated March 2008, word-files, submitted on April 23, 2008.
31	Purchase contract between AES Tiete and Hacker Industrial Ltda. for one turbine for SHP São Joaquim, N° DC/PCH/005/2008, signed on 17/03/2008, pdf-file, submitted on April 23, 2008.
32	Receipt confirmations of the invitation letters, pdf-file „AR das Cartas de Jaguari Mirim_CAR19.pdf“, pdf-file, submitted on April 23, 2008.
33	Final Project Design Document “Jaguari Mirim River Hydroelectric Plants “, version 05, 13/03/2009, submitted in March.
34	Final CER calculation sheet “JMirim ER calculations 20080505”, excel file, submitted on May 07, 2008.
35	Newspaper Folha de Sao Paulo: Alternative Source Program is delayed, dated December 2007, pdf-file.
36	Maps about reservoir areas for SHP Sao Joaquim and SHP Sao Jose, pdf-files, submitted on June 09, 2008.
37	Information letter issued by GANA Consultoria e Engenharia S/C Ltda about the reservoir of SHP São Joaquim, dated 12/06/2008, submitted on June 16, 2008.
38	Small Hydro Plants in the State of São Paulo (Pequenas Centrais Hidreletricas no Estado de São Paulo), Comissão de serviços publicos de energia (CSPE), Sao Paulo 2004, submitted on July 22, 2008.
39	ANEEL resolution, N° 336, dated 17/10/2005, pdf-file, submitted on July 24, 2008.
40	Website www.aneel.gov.br.
41	Brazilian energy balance and outlook report 2007 (Balanco Energetico Nacional 2007), available at: http://www.mme.gov.br/site/menu/select_main_menu_item.do?channelId=1432&pageId=14131 , (30/12/2008).

Reference No.	Document or Type of Information
42	National Energy Plan for 2030 (PNE 2030 – Plano Nacional Energetico para 2030), ANEEL.
43	Decennium plan of expansion of electric energy (2006-2015) prepared by the Ministry of Mines and Energy (MME) in 2006, pdf-file.
44	Concession Contract 92/99, ANEEL – TIETE of public property use for electric energy generation, agreed by the federal government and companhia de geracao de energia eletrica Tiete, process 48500.004002/99-77 pdf-file including Notice SF/002/99, Sale of shares of the capital share of Tiete Electric Energy Generation Company, dated September 1999.
45	Report on the Agencia Nacional de Energia Eletrica – ANEEL (National Agency of Electric Energy), dated December 2007, AMCHAM, “An Amcham contribution for performance improvement of Brazilian regulating agencies”, pdf-file.
46	Power Point Presentation Pipeline of Projects, mentioning amongst others the AES Jaguari Mirim project including its eligibility as CDM project, dated 24/11/2006, sent per Email on 13/02/2009. CONFIDENTIAL
47	Review of the institutional and regulatory reforms, CORREIA ET AL., dated September/December 2006, magazine Economia, submitted in Portuguese and English (fundamental chapters) on 11/02/2009
48	Presentation about price formation in the short term by the Brazilian Electric Sector, Edgard A. PEREIRA, dated September 2008, submitted in Portuguese and English (fundamental chapters) on 11/02/2009
49	Identification of regulatory barriers “Analysis of reasons which impede the fast implementation of SHP plants in Brazil”, ANDRADE, dated 2006, UNIFACS, submitted in Portuguese and English (fundamental chapters) in February 2009.
50	“A proposal for the revision of ANEEL resolution N° 395/98 and its consequences for small hydroelectric power plants”, VILAS BOAS, dated 12/2008, submitted in Portuguese (with English abstract) in February 2009.
51	AES and Duke are looking for a option to generate in Sao Paulo, published in magazine Valor Economico, dated October 2008, sent per Email on 20/01/2009.
52	“A question of investment into the Brazilian Electricity sector: reform and crisis”, ARAUJO, Joao Lizardo, dated 07/2001, sent per Email

Reference No.	Document or Type of Information
	on 13/02/2009.
53	The volatility of Settlement Price of the Differences and the equilibrium dynamics of the Brazilian electric sector, CASTRO, June 2008, sent per Email on 13/02/2009.
54	Financial model for the AES Jaguari Mirim project considering CER credits, dated 11/11/2007, sent per Email on 13/02/2009. CONFIDENTIAL
55	Project Brief Template, dated 02/2007, sent per Email on 13/02/2009.
56	Declaration signed by the Environment and Carbon Credits Director (Demostenes Barbosa da Silva) that the proposed project activity is fully equity financed, dated 13/03/2009, submitted per Email.
57	Request letter for GSP uploading of PDD, version 1, dated 26/03/2008, submitted in March 2008.