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# VALIDATION REPORT

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**Pouso Alto Energia S/A.**

**Amper Energia S/A.**

**Rio do Sangue Energia S/A.**

**Paranatinga Energia S/A.**

**Rio Água Clara Energia Ltda.**

**Garganta da Jararaca Small  
Hydroelectric Power Plant (SHP) –  
Atiaia Energia S.A. Project Activity**

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#### Summary

SGS has performed a validation of the project: Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A. Project Activity. The Validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting. Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria.

The project activity consists of the construction of a new small hydro power plant with 29.3 MW total installed capacities and a reservoir of 2.87 km<sup>2</sup>. The plant is being installed in the Midwest region of Brazil, in Rio do Sangue (river).

Total amount of emission reductions estimated for the first crediting period is 352,051tCO<sub>2</sub>e.

SGS will request registration of the Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A. Project Activity as a CDM project activity. The Letter of approval from the government of Brazil was issued on 30 November 2006.

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**Abbreviations**

AM	Approved Methodology
CAR	Corrective Action Request
CER	Certified Emission Reduction
DNA	Designated National Authority
EF	Emission Factor
MP	Monitoring Plan
NIR	New Information Request
PDD	Project design Document
SGS	Société Générale de Surveillance

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## 1. Introduction

### 1.1 Objective

POUSO ALTO ENERGIA S/A; AMPER ENERGIA S/A; RIO DO SANGUE ENERGIA S/A; PARANATINGA ENERGIA S/A; RIO ÁGUA CLARA ENERGIA LTDA have commissioned SGS to perform the validation of the project: Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A. Project with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

### 1.2 Scope

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

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

### 1.3 GHG Project Description

This report summarizes the results of the validation of Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A. Project Activity, performed on the basis of UNFCCC criteria. The validation has been performed as a desk review of the project documents presented by Atiaia Energia S/A and a site visit to Garganta da Jararaca Small Hydro Power Plant, located in Campo Novo do Parecis and Nova Maringá, Mato Grosso, Brazil. During site visit, Atiaia's managers and Ecoinvest consultant were interviewed.

The plant is owned by Rio do Sangue Energia S/A. ICAL S.A. (Indústria, Comércio e Administração) is a holding that controls Rio do Sangue Energia. The holding is going through a societal restructuring, after which the project companies will be controlled 100% by Atiaia Energia S.A., a new holding company owned by ICAL, Koblitz S/A and members of Cornélio Brennand family. Garganta da Jararaca project is being financed by the Brazilian Development Bank - BNDES (["Banco Nacional de Desenvolvimento Econômico e Social"](#)).

The project activity consists of the construction of a new small hydro power plant with 29.3 MW total installed capacity and a reservoir of 2.87 km<sup>2</sup>. The plant is being installed in the Midwest region of Brazil, in Rio do Sangue (river).

Small hydro in Brazil must have installed capacity between 1 MW and 30 MW and reservoir area less than 3 km<sup>2</sup>, or, if the area is between 3 km<sup>2</sup> and 13 km<sup>2</sup>, it should have a minimum environmental impact. Garganta da Jararaca plant complies with the Brazilian legal criteria that define small hydropower plants.

The turbine system consists of two units of 15.10 MW each, and two generators of 14.65 MW.

The yearly minimum energy output expected is 190,000 MWh. Garganta da Jararaca is going to feed, simultaneously, isolated systems and the Brazilian interconnected grid, so that the project is set to deliver electricity partially into the Brazilian interconnected grid and partially into an isolated grid. For conservativeness reasons, the project proponents considered that all the energy will be fed to the interconnected grid South-Southeast-Midwest.

Total amount of emission reductions estimated for the first crediting period is 352,051 t CO<sub>2</sub>e

#### Baseline Scenario:

No investment in clean power generation; electricity generation from fossil-fuel thermal plants that would have otherwise been delivered to the interconnected grid and to isolated systems.

#### With-project scenario:

The project activity consists of the installation of a hydropower plant with capacity of 29.3 MW. It will result in GHG emissions reductions avoiding the dispatch of same amount of energy produced by fossil-fuelled thermal plants to the grid and to isolated systems.

#### Leakage:

No leakage is anticipated.

#### Environmental and social impacts:

The environmental impact of the project activity is considered small considering the host country definition of small-hydro plants, given the small dam and reservoir size.

With the use of small hydropower facilities to generate electricity for local use and for delivery to the grid, the project displaces part of the electricity derived from diesel, a finite fossil fuel, and gives less incentive for the construction of large hydro plants which can have major environmental and social impacts.

Regarding the compliance with environmental legislation of the host country, the Brazilian regulation requires an environmental licensing process, including: the preliminary license (Licença Prévia or LP), the construction license (Licença de Instalação or LI); and the operating license (Licença de Operação or LO).

It was verified during the site visit that the plant obtained the preliminary and construction licenses. The licenses were issued by the Mato Grosso Environmental Agency (SEMA - Secretaria Estadual do Meio Ambiente do Mato Grosso). The following documents were verified: Technical opinion n° 054/COINF/DIMI/2005 and Installation license LI n° 102/2005 (dated on 16/02/2005).

In order to implement measures to mitigate adverse impacts identified in the Environmental Impact Assessment, the company prepared Environmental Control Plans and Basic Environmental Project which were approved by SEMA. They involve, among other: restoration of degraded areas; water resources monitoring; control of erosion; monitoring and rescue of fauna and archaeological rescue. Regarding social and economic impacts, it is expected that small hydropower plants can provide local distributed generation, in contrast with the business as usual large hydropower and natural gas fired plants.

Section F of PDD presents in detail the Atiaia Project's contribution to Sustainable Development aligned with Brazilian priorities (Contribution to the local environmental sustainability; Contribution to the development of the quantity and quality of jobs, Contribution to the fair income distribution, Contribution to the technological development and capacity building, Contribution to the regional integration and relationships among other sectors). The project was also reviewed under the checklist of "World Commission on Dams Guidelines for Good Practice" (WCD, 2000).

It is expected that the project activity will contribute to improve the supply of electricity, while

contributing to the environmental, social and economic sustainability.

#### 1.4 The names and roles of the validation team members

<b>Name</b>	<b>Supplier</b>	<b>Role</b>
<i>Aurea Nardelli</i>	<i>SGS Brasil</i>	<i>Lead Assessor</i>
<i>Fabian Gonçalves</i>	<i>SGS Brasil</i>	<i>Local Assessor</i>
<i>Irma Lubrecht</i>	<i>SGS the Netherlands</i>	<i>Technical reviewer</i>

## 2. Methodology

### 2.1 Review of CDM-PDD and additional documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

A site visit is usually required to verify assumptions in the baseline. Additional information can be required to complete the validation, which may be obtained from public sources or through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country). These may be undertaken by the local SGS affiliate. The results of this local assessment are summarized in Annex 1 to this report.

### 2.2 Use of the validation protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

<b>Checklist Question</b>	<b>Means of verification (MoV)</b>	<b>Comment</b>	<b>Draft and/or Final Conclusion</b>
<i>The various requirements are linked to checklist questions the project should meet.</i>	<i>Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.</i>	<i>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.</i>	<i>This is either acceptable based on evidence provided (Y), or a <b>Corrective Action Request (CAR)</b> due to non-compliance with the checklist question (See below). <b>New Information Request (NIR)</b> is used when the validation team has identified a need for further clarification.</i>



The completed validation protocol for this project is attached as Annex 2 to this report

### 2.3 Findings

As an outcome of the validation process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **New Information Request (NIR)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**. A CAR

is issued, where:

- I. mistakes have been made with a direct influence on project results;
- II. validation protocol requirements have not been met; or
- III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

**Observations** may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

### 2.4 Internal quality control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

## 3. Determination Findings

### 3.1 Participation requirements

Brazil is listed as the host Party. Brazil has ratified the Kyoto Protocol on 23<sup>rd</sup> August 2002 ([http://unfccc.int/files/essential\\_background/kyoto\\_protocol/application/pdf/kpstats.pdf](http://unfccc.int/files/essential_background/kyoto_protocol/application/pdf/kpstats.pdf)).

At time of the draft validation, no Letter of Approval from the host country had been provided. The Letter of Approval will be signed when the DNA of Brazil has received and analyzed the validation report.

The Letter of Approval from the government of Brazil was issued on 30 November 2006.

### 3.2 Baseline selection and additionality



The methodology applied to this Project Activity is: ACM0002 – “Consolidated baseline methodology for grid-connected electricity generation from renewable sources/ Consolidated monitoring methodology for grid-connected electricity generation from renewable sources” (version 06, issued on 19<sup>th</sup> May, 2006).

ACM0002 is applicable to grid-connected renewable power generation project activities which include among other conditions “new hydro electric power projects with reservoirs having power densities (installed power generation capacity divided by the surface area at full reservoir level) greater than 4 W/m<sup>2</sup>.” The original PDD (version available for international stakeholder consultation) had included three plants. One of them was excluded because there were problems with social aspects. Considering the remaining two plants, one was a small hydro plant (Porto das Pedras) which has a power density less than 4 W/m<sup>2</sup>. It is not acceptable by ACM0002. A CAR (07) was raised. To close out CAR 7, the plant (Porto das Pedras) was also excluded of the PDD. Only the plant Garganta da Jararaca meets the applicability criteria of the methodology. CAR 7 has been closed out.

The project consists of installation of a new small hydro power plant. The project boundaries are defined by the emissions targeted or directly affected by the project activities. It encompasses the physical, geographical site of the hydropower generation and the interconnected grid. The baseline calculation boundary is covered by the South-Southeast-Midwest integrated electric grid and all plants are connected to this grid and baseline calculations use the electric generation data from this region. Garganta da Jararaca SHP will be connected with isolated system and to the interconnected grid, the isolated system will be physically connected to the interconnected system. In Brazilian case, the emission factor to isolated systems is too much higher than the interconnected system. For conservatism reasons, all carbon credits related to the energy supplied were considered to the interconnected grid. The project boundary is acceptable.

During the validation process, the PDD was revised to apply the latest version of ACM0002. According to ACM0002 (version 6) new hydro electric power projects with reservoirs shall account for project emissions. The project emissions should be calculated considering the “power density” (installed power generation capacity divided by the surface area at full reservoir level). Once PE is dependent on the reservoir area and capacity installed of the plant, the methodology requires that “reservoir area” should be included as a monitoring item. No reference about PE was included in the PDD and consequently, a CAR (8) was raised.

To address CAR 8, information about PE calculation and demonstration why PE=zero was provided in the revised PDD (version 9). For SHP Garganta da Jararaca, considering the capacity of the project is 29.83MW and the area of reservoir is 2.87 Km<sup>2</sup>, the power density was calculated from 29.3/2.87. The value obtained was 10.2 W/m<sup>2</sup>. According to the methodology, if power density of the project is greater than 10W/m<sup>2</sup>, PE is zero. CAR 8 was closed out.

The project does not create any leakage as defined in the methodology.

Considering that the project emissions and leakage are zero, the emission reductions by the project activity ( $ER_y$ ) during a given year  $y$  will be the product of the baseline emissions factor ( $EF_y$ , in tCO<sub>2</sub>e/MWh) times the electricity supplied by the project to the grid ( $EG_y$ , in MWh).

As required in ACM 0002, the project demonstrated additionality using the “Tool for the demonstration and assessment of additionality”. The relevant information for this analysis was presented in the PDD. Step 0 and step 2 were not applicable to the project.

The discussion on additionality was not clear, mainly about the investment barrier. Transparent evidence related to the IRR analysis, as spreadsheets with formulas and assumptions considered for

the analysis was not provided during the desk study. A NIR (3) was raised.

To clarify NIR 3, spreadsheets were sent to the validator, presenting data and formulas to demonstrate how IRR was determined. A list describing the assumptions for the analysis was also provided. It was verified that the investment barrier is not the most important barrier, once the project received subsidised funds from BDNES (with interest rate lower than the rate of the market).

PDD Section B.3 was revised to clarify that some barriers that are common to the Brazilian context were not faced by the project activity. The investment barrier was excluded, remaining only the infrastructure barrier. NIR 3 has been closed out.

As verified during site visit the lack of infrastructure is a significant.

The lack of infrastructure made the project activity more expensive and its construction time longer than a similar project developed in a different region with better infrastructure. There is another project closer, but regardless of the small distance between those projects, both power plants have developed their own infrastructure. The other project mentioned is a CDM project too.

The project is located in a non-developed region of the State of Mato Grosso; 7 hours by car from Cuiabá (State Capital) to the nearest city Campo Novo dos Parecís, and from Campo Novo more than 50 km by car to access the hydro plant.

Mato Grosso is an agricultural state with infrastructural problems; roads without infrastructure, unqualified personnel to work in a hydro power plant.

The project is located in an isolated system and part of the generated electricity is supplied to this isolated system. A new transmission line was built to supply the other part of the electricity to interconnected system.

Mato Grosso state is a large state with larger dimensions than developed states in Brazil.

“Garganta da Jararaca (13°23' S, 57°37' W ) is located in Campo Novo do Parecis and Nova Maringá, state of Mato Grosso (MT), midwest of Brazil. The towns are located in the western part of the state ”.

The PDD demonstrated that with absence of the incentive created by the CDM; this project would not be the most attractive scenario. The alternative to the project activity is the continuation of the current (previous) situation of electricity supplied by large hydro and thermal power stations – or by Diesel oil, in the case of isolated systems. As an alternative for the group company is the investment in other opportunities, like the financial market or in other traditional industrial areas of the group.

### **3.3 Application of Baseline methodology and calculation of emission factors**

As defined in ACM0002, the baseline emission factor is calculated as a combined margin, consisting of the combination of operating margin and the build margin factors. The calculation of the emission factor of Brazilian South-Southeast-Midwest grid is based on data from the National Electric System Operator (ONS – Operador Nacional do Sistema Elétrico) covering years 2002 -2004.

During the desk study it was verified that the emission factor calculation did not use the most recent value available. A CAR (2) was raised. To close out CAR 2, the emission factor was revised and the calculated value was included in the section E.4.of PDD. The emission factor calculated was 0.2647 tCO<sub>2</sub>e/MWh. CAR 2 has been closed out.

### **3.4 Application of Monitoring methodology and Monitoring Plan**

During the draft validation, it was verified that the monitoring plan did not cover all requirements of ACM0002. Issues were raised, as described below:

- CAR 4: Recording frequency and proportion of data (presented in section D.2.1.3 of PDD) did not comply with the requirements of ACM0002. To close out CAR 4, the PDD was adequately revised to comply with the methodology.

- NIR 5: The operational and management structure to be implemented was not described in detail in the PDD (see section D.4 and Monitoring plan). It was lacking information about authority and responsibility. To clarify NIR 5, the PDD was revised and the authority and responsibility of project management was presented in Annex 4. It was informed that the plant staff is responsible for project management, training, monitoring, measurement and reporting activities. It was also confirmed by the local assessor during the site visit and by interviews with Atiaia's managers.

The plant is not in operation yet. As described in the PDD, the energy distribution company will be responsible for dealing with possible monitoring data adjustments and uncertainties, for review of reported results/data, for internal audits of GHG project compliance with operational requirements and for corrective actions. It was also informed during the site visit that the project managers will prepare the Operation and Maintenance Manual for the SHP.

An Observation (1) was raised: The procedures should be clearly described and the operational and maintenance manual should be prepared and implemented until the start up of the plant. Personnel involved in monitoring activities should be trained on the procedures.

Unintended emissions from the SHP are not expected. Other potential emergencies and trouble shooting procedures will be covered by the operational manual (see Observation 1).

Considering that the CAR and NIR above were adequately addressed, the validation team accepted the monitoring plan described in the PDD.

### **3.5 Project design**

The project's starting date (25<sup>th</sup> January 2005) and operational lifetime (35 years) were clearly defined in the PDD and are reasonable. It was assumed a renewable crediting period which will start on 15<sup>th</sup> January 2007. The operational lifetime exceeds the crediting period.

The project design engineering reflects current good practices and is not likely to be substituted by other or more efficient technologies within the project period. Small hydro is considered to be one of the most cost effective power plants in Brazil.

A CAR (6) was raised during the document review relate to editorial requirements. The PDD template was not correctly applied and the document had been completed modifying headings, format and fonts. It was used a template "version 3" that is not a CDM document. The PDD was revised to be in compliance with the PDD-CDM template. CAR 6 was closed out.

### **3.6 Environmental Impacts**

During the desk study, it was verified that the PDD did not present a plan for monitoring sustainable development indicators/ environmental impacts and CAR (1) was raised.

The local assessor verified on site that Rio do Sangue Energia S/A have hired expert consultants to carry out Garganta da Jararaca's environmental programs. After the beginning of the commercial operations, restoration of degraded areas and of permanent preservation areas will be done according to the legal requirements. Studies done during the design phase of the project have identified the environmental and social impacts and indicated the mitigation measures to be adopted during the construction and operation phases. A team of experts will monitor the compliance with the environmental regulation.

During the site visit, the above-mentioned information was verified through document review, interviews with Atiaia's managers and local observation. It was also verified that the analysis of the environmental impacts of the project activity was sufficiently described in the documents related to the environmental licensing of the plant. Adverse environmental effects were identified and mitigating

measures were defined for address these impacts.

Information regarding the environmental programmes and monitoring plan were included in the PDD (Annex 4). CAR 1 was closed out.

### 3.7 Local stakeholder comments

Local stakeholders have been invited by letters to comment on the Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A. Project Activity.

The invitation was sent to specific stakeholders, considered representative of the general public, as defined in the Resolution n° 1 (Brazilian DNA requirement). Copies of the letters sent to stakeholders and records of receiving were verified by the local assessor. It was confirmed that the consultation was carried out as described in the PDD.

During the consultation period, one comment was received from FBOMS, suggesting the use of Gold Standard or similar tools for monitoring of environmental/social indicator. The project participants considered that the requirements of Brazilian Government are sufficient to be used as sustainable indicators which are attended by the project activity.

## 4. Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

### 4.1 Description of how and when the PDD was made publicly available

The PDD and the monitoring plan for this project were made available on the SGS website <http://cdm.unfccc.int/Projects/Validation/DB/1NYKHK2HDI4U32NOR1QEA918QEOCHP/view.html> and were open for comments from 12 Apr 2006 until 10 May 2006. Comments were invited through the UNFCCC CDM homepage

### 4.2 Compilation of all comments received

Comment number	Date received	Submitter	Comment

No comments were received during the 30 days commenting period.

### 4.3 Explanation of how comments have been taken into account

No comments were received.

## 5. Validation opinion

Steps have been taken to close out 8 findings. The observation raised does not preclude the validation of the project, but should be considered as an opportunity for improvement for the verification process.

SGS has performed a validation of the project: Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A.

The Validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting. Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria.

By the displacement of fossil fuels by renewable energy sources in the generation of electricity, the project results in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the barriers presented, specially lack of infrastructure, the project is not a common practice in Brazil, 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. If the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

The validation is based on the information made available to SGS and the engagement conditions detailed in the report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence SGS 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.

## 6. List of persons interviewed

<b>Date</b>	<b>Name</b>	<b>Position</b>	<b>Short description of subject discussed</b>
12/05/2006	Sergio Posternak	Administrative	Operational issues, contracts.
12/05/2006	Roberto Juliano B. Sena	ENVIRONMENTAL COORDINATOR	Environmental license, maps.
12/05/2006	José Carlos Ribeiro	ENGINEER	Technical issues.
12/05/2006	Ricardo Besen	CDM CONSULTANT	PDD developing, monitoring plan, baseline study.
12/05/2006	Karen Nagai	CONSULTANT	PDD developing, monitoring plan, baseline study.

## 7. Document references

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

- /1/ Project Design Document “Garganta da Jararaca, Paranatinga II and Porto das Pedras Small Hydroelectric Power Plants (SHPP) – Atiaia Energia S.A. Project Activity”,



version 1, 28/03/2006; version 2, 10/05/2006; version 3, 23/05/2006.

Project Design Document "Garganta da Jararaca and Porto das Pedras Small Hydroelectric Power Plants (SHP) – Atiaia Energia S.A. Project Activity", version 4, 14/06/2006

Project Design Document "Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A. Project Activity", version 5, 17/07/2006; version 6, 19/07/2006; version 7, 20/07/2006; version 8, 21/07/2006; version 9, 31/07/2006; version 10, 29/09/2006; version 11, 07/05/2007.

- /2/ Approved consolidated baseline and monitoring methodology ACM0002 – Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources, version 05, 03/03/2006; version 6, 19/05/2006.
- /3/ Tool for the demonstration and assessment of additionality, version 2, 28/11/2005.

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

- /4/ Technical opinion n° 054/COINF/DIMI/2005 issued by FEMA. Installation license number 102/2005, 16/02/2005 issued by FEMA. Garganta da Jararaca environmental license (installation).
- /5/ 05/2006 Garganta da Jararaca map. Reservoir map of Garganta da Jararaca.
- /6/ Environmental program worksheet. Environmental and social programs of the SHP.
- /7/ "Diagnóstico Ambiental da PCH Garganta da Jararaca, 1999, prepared by Global Empreendimentos Turísticos, Larrosa & Santos. Environmental study of Garganta da Jararaca plant.
- /8/ Ofício number 372/2006-SCG/ANEEL, 29/03/2006 issued by ANEEL. Authorization to utilize hydro resources for Garganta da Jararaca plant.
- /9/ ANEEL Resolution number 72, 02/03/2004 issued by ANEEL for PCH Garganta da Jararaca. Authorization for independent energy producer issued by National Agency of Energy.
- /10/ PPA signed between Cemat and Rio do Sangue Energia Ltda (owner of Garganta da Jararaca small hydro plant), 05/07/2004. Power purchase agreement.

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