ANNEX 1
REPORT ON COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

GARGANTA DA JARARACA SMALL HYDROELECTRIC POWER PLANT (SHP) – ATIAIA ENERGIA S.A. PROJECT ACTIVITY

Project No. CDM.Val0569

Date: 13/10/2006

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1 INTRODUCTION

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 make invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This report describes this process for this particular project.

2 PROJECT DETAILS

2.1 Project title

Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A. Project Activity (during the consultation, the project was entitled as "Garganta da Jararaca, Paranatinga II e Porto das Pedras Small Hydroelectric Power Plants (SHPP) – Atiaia Energia S.A. Project Activity").

2.2 Description of how and when the PDD was made publicly available

The Project Design Documents and its annexes were made publicly available from 12 Apr 2006 until 10 May 2006 on the website http://cdm.unfccc.int/Projects/Validation/DB/1NYKHK2HDI4U32NOR1QEA918QEOCHP/view.html and comments were invited through the UNFCCC CDM homepage.

3 COMMENTS RECEIVED

3.1 Description of how comments were received and made publicly available

Comments could be submitted through a web interface or by email or fax.

As per procedures on public availability of the CDM project design documents and for receiving comments as referred to in paragraphs 40b and 40c of the CDM modalities and procedures, any received comments are displayed from the end of the 30 days commenting period, at the website listed in section 2.2.

3.2 Compilation of all comments received

No comments received to the DOE during the 30 days commenting period.

4 EXPLANATION OF HOW COMMENTS HAVE BEEN TAKEN INTO ACCOUNT

No comments received.

Reference to part of this report which may lead to misinterpretation is not permissible.

ANNEX 2
LIST OF DOCUMENTS ATTACHED

GARGANTA DA JARARACA SMALL HYDROELECTRIC POWER PLANT (SHP) – ATIAIA ENERGIA S.A. PROJECT ACTIVITY

Project No. CDM.Val0569

Date: 13/10/2006

/1/ Annex 1: Report on Comments by Parties, Stakeholders and NGOs

/2/ Annex 2: Comprehensive list of documents attached

/3/ Annex 3: List of persons interviewed

/4/ Annex 4: Validation Protocol (UK.AU4.CDM.Val0569)

/5/ Annex 5: Overview of findings (UK.Findings.CDM.VAL0569)

/6/ Annex 6: Answers from local assessor

/7/ Annex 7: Validation Report (UK.AR6.CDM.VAL0569)

/8/ Annex 8: Modalities of communication

Reference to part of this report which may lead to misinterpretation is not permissible.

ANNEX 3
Overview of documentation that has been reviewed and list of persons interviewed

GARGANTA DA JARARACA SMALL HYDROELECTRIC POWER PLANT (SHP) – ATIAIA ENERGIA S.A. PROJECT ACTIVITY

Project No. CDM.Val0569

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This document is an Annex to the validation report for CDM project activity registration. It gives overview of documentation that has been reviewed and names of persons that have been an interviewed as part of the validation.

List of documents reviewed

/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.

/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, 29/11/2005.

List of persons interviewed

	Name and position	Company name	Date interviewed
/1/	Sergio Posternak / Administrative Manager	Atiaia Energia	12/05/2006
/2/	Roberto Juliano B. Sena / Environmental Coordinator	Atiaia Energia	12/05/2006
/3/	José Carlos Ribeiro / Engineer	Atiaia Energia	12/05/2006
/4/	Ricardo Besen / CDM Consultant	Ecoinvest	12/05/2006
/5/	Karen Nagai / Consultant	Ecoinvest	12/05/2006

Reference to part of this report which may lead to misinterpretation is not permissible.

Annex 4 - Validation Protocol

Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A. Project Activity– CDM.Val0569

This validation protocol is designed to ensure that the project meets the requirements for CDM projects that are detailed in paragraph 37 of the CDM modalities and procedures. Each requirement is covered in a separate table. The following requirements are discussed in this protocol:

Requirement	Description	
Participation requirements	The participation requirements as set out in Decision 17/CP7 need to be satisfied	Covered in table 1
Baseline and monitoring methodology	The baseline and monitoring methodology complies with the requirements pertaining to a methodology previously approved by the Executive Board	Baseline methodology is covered in table 2 Monitoring methodology is covered in table 4
Additionality	The project activity is expected to result in a reduction in anthropogenic emissions by sources of greenhouse gases that are additional to any that would occur in the absence of the proposed project activity	Covered in table 3
Monitoring plan	Provisions for monitoring, verification and reporting are in accordance with relevant decisions of the COP/MOP	Covered in table 5
Environmental impacts	Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party;	Covered in table 6
Comments by local stakeholders	Comments by local stakeholders have been invited, a summary of the comments received has been provided, and a report to the designated operational entity on how due account was taken of any comments has been received;	Covered in Table 7
Other requirements	The project activity conforms to all other requirements for CDM project activities in relevant decisions by the COP/MOP and the Executive Board.	Covered in Table 8

Small sale projects and AR projects have specific requirements which are covered in Table 9-11. Small scale SSC projects have special requirements which might deviate from the requirements of other CDM projects. These requirements are tested in table 9. Please note that some questions in table 9 overlap with questions in the other tables. Where the questions in table 9 contradict or overlap questions elsewhere in the checklist, the questions in table 9 shall prevail. For the validation of small scale projects, assessor is required to address the questions in table 9 first before starting with the questions in the other tables.

Further remarks on the use of this document:

- text in *italic blue* is meant as guidance for the assessor
- MoV = Means of Verification, DR= Document Review, I= Interview

This protocol should be adapted as required. For example, if the project is not a small scale project or an AR project, some tables can be deleted.

Table 1 Participation Requirements for Clean Development Mechanism (CDM) Project Activities (Ref PDD, Letters of Approval and UNFCCC website) All CDM project activities

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	DR	PDD	No Annex I country in this project.	Ok	Ok
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily	DR	PDD	No Letter of Approval by host country (Brazil) has been submitted to the validator. The letter will be issued by the DNA after they analyse the draft validation report.	Send the validation report to DNA	
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	DR	UFCCC	Yes. Brazil: 23 August 2002	Ok	Ok
1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the	DR	PDD	The project activity reduces emissions of greenhouse gas (GHG)	Ok	Ok

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
baseline; and the project can be reasonably shown to be different from the baseline scenario			as the result of the displacement of generation from fossil-fuel thermal plants that would have otherwise been delivered to the interconnected grid.		
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available	DR	UFCCC	PDD was publicly available: 12 April 2006 until 10 May 2006. http://cdm.unfccc.int/Projects/Validation/DB/1NYKHK2HDI4U32NOR1QEA918QEOCHP/view.html No comments were received.	Ok	Ok
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance	DR	PDD	No. They used a "version 3" that is not a CDM document and have changed format and fonts. CAR 6 was raised. To close out CAR 6, the PDD was revised and presented the correct version.	CAR 6	Ok
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA	DR	PDD	This project activity do not made use of ODA.	Ok	Ok
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?			N.A		
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects			N.A		
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment.	DR Site visit	PDD	See item 1.6 and CAR 6	CAR 6	Ok

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
	I				
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?	DR Site visit I	PDD	Yes. Although the project is not operational yet (the plant is in construction phase), it was possible to verify the information provided in the PDD.	Ok	Ok

Table 2 Baseline methodology(ies) (Ref: PDD Section B and E and Annex 3 and AM) Normal CDM projects only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology	PDD ACM 0002	DR	ACM 0002 (version 6) 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/m².” The original PDD (version 1 to 3) had included three plants. One of then was excluded because there were problems with social aspects. Considering the remained two plants, one was a small hydro plant (Porto das Pedras) which has a power density less than 4 W/m². It is not acceptable by ACM0002. CAR 07 was raised. To close out CAR 7, the plant (Porto das Pedras) was also excluded of the PDD. Only the plant Garganta Jararaca meets all the applicability criteria of the methodology.	CAR 07	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.2 Is the project boundary consistent with the approved methodology	PDD ACM 0002	DR	Yes. It encompasses the physical, geographical site of the hydropower generation source, which is represented by the respective river basin of the project close to the power plant facility and the interconnected grid (South-Southeast-Midwest interconnected subsystem of the Brazilian grid).	Ok	Ok
2.3 Are the baseline emissions determined in accordance with the methodology described	PDD ACM 0002	DR	The baseline emission factor is defined as (EF_y) and is calculated as a combined margin (*CM*), consisting of the combination of operating margin (OM) and build margin (BM) factors. During the desk study it was verified that the emission factor calculation did not use the most recent value available. CAR 2 was raised. The emissions factor was revised and included in the PDD. CAR 2 was closed out. Baseline emissions are calculated by using the annual generation (project annual electricity dispatched to the grid) times the CO_2 average emission rate of the estimated baseline, as follows: (A) Monitored project power generation (MWh) (B) Baseline emission rate factor (tCO_2/MWh) BE= (A) x (B) (tCO_2) The EF calculated (after CAR 2 closing out) was 0.2647 tCO_2e/MWh.	CAR 2	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			See PDD section E.4 for formulas and Annex 3 for external data used for EF calculation.		
2.4 Are the project emissions determined in accordance with the methodology described	PDD ACM 0002	DR	The version 6 of the ACM0002 requires that the PE should be calculated from the "power density". No reference about this was included in the PDD. CAR 08 was raised. To close out CAR 8, information about PE calculation and demonstration why PE=zero was provided in the revised PDD. "According to ACM0002 (version 6), new hydro electric power projects with reservoirs, shall account for project emissions. For SHP Garganta da Jararaca, considering the capacity of the project: 29.83MW and area of reservoir: 2.87 Km2, the power density = 29.3/2.87 = 10.2 W/m2. If power density of the project is greater than 10W/m2, PEy = 0".	CAR 08	Ok
2.5 Is the leakage op the project activity determined in accordance with the methodology described	PDD ACM 0002	DR	Leakage is not applicable.	Ok	Ok
2.6 Are the emission reductions determined in accordance with the methodology described	PDD ACM 0002	DR	See item 2.3 and CAR 2. The emissions factor used to determine the emissions reductions was revised. CAR2 was closed out.	CAR 2	Ok

Table 3 Additionality (Ref: PDD Section B3 and AM) Normal CDM projects only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.1 Does the PDD follow all the steps required in the methodology to determine the additionality	PDD ACM 0002 Tool	DR	Yes. ACM0002 methodology requires the use of the "Tool for the demonstration and assessment of additionality". All steps were followed (except steps 0 and 2 that are not applicable)	Ok	Ok
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	ACM 0002 PDD	DR	The explanation about the investment barrier is not clear. The IRR worksheet presented is not transparent, i.e., no formulas and assumptions were provided. To clarify NIR 3, the text in the PDD regarding the investment barrier was revised. The IRR assumptions and formulas were provided to the assessment team and were considered reasonable. It was verified that the investment barrier is not the most important barrier as the project received subsidised funds from BDNES (with interest rate lower than the rate of the market). This financial support covers 78% of the project costs (Garganta da Jararaca), with a Long Term Interest Rate rate of 9% plus a 3.0% spread risk for a term of 8 years and grace period of 2 years. PDD Section B.3 was revised to clarify that some barriers that are common to the Brazilian context were not the case of the project.	NIR 3	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	ACM 0002 PDD	DR	Yes. The alternative to the project activity is the continuation of the current (previous) situation of electricity supplied by large hydro and thermal power stations. As an alternative for the group company, there is the investment in other opportunities, like the financial market. Given Cornélio Brennand is a holding company, it could as well have decided to focus on the other company traditional areas of the group (e.g., glass industry, real estate, etc.), and not on the power market.	Ok	Ok
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario	PDD ACM 0002	DR	To be confirmed by local assessor. The project activity is not the business as usual in the country, and other alternatives could be the continuation of electricity supplied by large hydro and thermal plants in the country or to invest in financial market.	Verify	Ok

Table 4 Monitoring methodology (PDD Section D and AM) Normal CDM projects only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	PDD ACM 0002	DR	No. The project includes a new SHP that is not eligible as a CDM project (the power density is less than 4 W/m²). CAR 7 was raised (see also item 2.1 and CAR 7 closing out details).	CAR 07	Ok
4.2 Does the PDD provide for the monitoring of the baseline emissions	PDD ACM	DR	No. Recording frequency and proportion of data	CAR 4	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
as required in the monitoring methodology	0002		(presented in section D.2.1.3 of PDD) did not comply with the requirements of ACM0002. CAR 4 was raised. The PDD was revised to comply with the methodology. CAR 4 was closed out.		
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology	PDD ACM 0002	DR	No. PE is dependent on the reservoir area and capacity installed of the plant. These parameters are used for "Power density" calculation. No information about reservoir area is included in Section D of the PDD. CAR 08 was raised (see also item 2.4 and CAR 8 closing out details).	CAR 08	Ok
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	PDD ACM 0002	DR	There is no leakage.	Ok	Ok
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology	PDD AM	DR	Yes.	Ok	Ok

Table 5 Monitoring plan (PDD Annex 4) Normal CDM projects only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts	PDD	DR			
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social	PDD	DR	There is no plan for monitoring sustainable development indicators or environmental impacts. The revised PDD (annex 4) presents the	CAR 1	Ok

CHECKLIST QUESTION		Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	and economic impacts?			environmental and social programs that will be monitored. CAR 1 was closed out.		
5.1.2	Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	See CAR 1 and its close out details. See Annex 4 of revised PDD.	see CAR 1	Ok
5.1.3	Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	See CAR 1 and its close out details for environmental performance. There will be a specific programme related to health of local communities. No additional significant social impact was identified which requires continuous monitoring.	see CAR 1	Ok
5.1.4	Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	See CAR 1 and close out details. The section F of PDD presented 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 In addition, presented a discussion under seven items (social and	see CAR 1	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			environmental) of the World Commission on Dams. recommendations checklist.		
5.2 Project Management Planning					
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	DR/I	No. Section D.4 of the PDD does not present information about the management structure and authority and responsibility of project. NIR 5 was raised. The PDD was revised and the authority and responsibility of project management is presented in Annex 4. NIR 5 was closed out.	NIR 5	Ok
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD	DR/I	See also NIR 5 and Annex 4 of revised PDD. The SHP staff are responsible for project management, training, monitoring, measurement and reporting activities.	NIR 5	Ok
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	DR Site visit I	Verify on site. The SHP is not operational yet. As informed during the site visit, the project sponsors will prepare the Operation and Maintenance Manual for the SHP and the operators will be trained.	Verify	Observation (1)
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR Site visit I	Unintended emissions from the SHP are not expected. Other potential emergencies and troubles should be covered by the operational manual.	Verify	Ok
5.2.5 Are procedures identified for calibration of monitoring equipment?	PDD	DR Site visit	Verify on site. As informed during the site visit, the project	Verify	Observation (1)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
		I	sponsors will prepare the Operation and Maintenance Manual for the SHP. Energy distribution company will be responsible for the calibration and maintenance of the monitoring equipment. (see Annex 4 of the PDD).		
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR Site visit I	See 5.2.5. Energy distribution company will be responsible for the calibration and maintenance of the monitoring equipment. (see Annex 4 of the PDD).	Verify	Observation
5.2.7 Are procedures identified for monitoring, measurements and reporting?	PDD	DR I	Verify on site. The SHP is not operational yet. As informed during the site visit, the project sponsors will prepare the Operation and Maintenance Manual for the SHP. Annex 4 of PDD includes information about monitoring and reporting general procedures to be implemented.	Verify	Observation (1)
5.2.8 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR I	Verify on site. The SHP is not operational yet. See Annex 4 of the PDD which includes information regarding data collection, processing and archiving.	Verify	Observation (1)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR Site visit I	Verify 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. The procedures should be clearly described until the start up of the plant.	Verify	Observation (1)
5.2.10 Are procedures identified for review of reported results/data?	PDD	DR I	See 5.2.9.	See 5.2.9	Observation (1)
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	DR I	See 5.2.9.	See 5.2.9	Observation (1)
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	DR I	See 5.2.9	See 5.2.9	Observation (1)
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	DR I	See 5.2.9	See 5.2.9	Observation (1)

Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation) Normal CDM projects only

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	Yes.	Ok	Ok
6.2 Are there any Host Party requirements for an Environmental	PDD	DR	Verify EIA and other legal requirement.	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Impact Assessment (EIA), and if yes, is an EIA approved?			As described in the PDD, the environmental impact of the Project is considered small by the host country definition of small-hydro plants. The following document was verified during the site visit: "Diagnóstico Ambiental da PCH Garganta da Jararaca, 1999, prepared by Global Empreendimentos Turísticos, Larrosa & Santos (Environmental diagnosis, Ref.4).		
6.3 Will the project create any adverse environmental effects?	PDD	DR	The environmental effects were considered in the environmental studies and considered by the environmental agency during the licensing process. It is expected that mitigate measures have been implemented to address adverse impacts identified in those studies. A list of environmental programmes that have been carried out by the company was presented during the site visit and was cited in the PDD (Ref.3).	Verify	Ok
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	Transboundary environmental impacts were considered in the EIA and environmental reports. These studies were analysed by the environmental agency during the licensing process.	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	The small hydro plant obtained licenses required by the Brazilian environmental regulation. EIA was carried out as part of the legal requirement. As verified during the site visit, the environmental programmes planned and implemented by the project sponsors have addressed the identified impacts. Environmental Control Plans and Basic Environmental Project were approved by the Mato Grosso Environmental Agency (*SEMA - Secretaria Estadual do Meio Ambiente do Mato Grosso).*	Verify	Ok
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	Verify licenses. The SHP obtained the legal required environmental licenses. Documented evidences were verified during the site visit. See references at the end of this checklist (Ref. 1, 3 and 4).	Verify	Ok

Table 7 Comments by local stakeholders (Ref PDD Section G) All CDM projects activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	Yes, as listed in the PDD, section G and verified during the validation assessment (checking the mail receipts).	Ok	Ok
7.2 Have appropriate media been used to invite comments by local	PDD	DR	Verify language and information used in the	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
stakeholders?			consultation process. Letters sent to stakeholders were verified. They are prepared in local language.		
7.3 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?	PDD	DR	To be confirmed by local assessor. Letters sent in local language and to the relevant stakeholders as required by Brazilian DNA Resolution n°1.	Verify	Ok
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	A response from FBOMS was received, suggesting the use of Gold Standard or similar tools for monitoring.	Verify	Ok
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	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.	Verify	Ok

Table 8 Other requirements. All CDM project activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	No. See CAR 6 raised in the item 1.6 of this checklist.	CAR 6	Ok
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	PDD	DR	Yes.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	Yes.	Ok	Ok
8.2.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD	DR/ site visit	Yes. The facility is a small hydro plant which has a small reservoir. Small hydro is considered to be one of the most cost effective power plants in Brazil.	Ok	Ok
8.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR/ site visit	It is not expected.	Ok	Ok
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR/I	It was verified during the site visit, by interviews with Atiaia staff . No specific training has been required for this project. Operators will be trained on the operational, monitoring and maintenance procedures before the hydropower plant starts the operation.	Verify	Ok
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Section C.1.1 – starting date of the project activity: 25 January 2005. Section C.1.2 – lifetime 35 years	Ok	Ok
8.3.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Renewable crediting period: first period 7 years. Starting date of the first crediting period: 15/01/2007.	Ok	Ok
8.3.3 Does the project's operational lifetime exceed the crediting period	PDD	DR	Yes.	Ok	Ok

Table 12 Additional information to be verified by local assessors / site visit

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Verify the environmental licenses/ environmental impacts (SHP in compliance with the legal requirements applied to the project?)	DR	DR	The following documents were verified: - Garganta da Jararaca: Technical opinion n° 054/COINF/DIMI/2005 issued by FEMA. Installation license n° 102/2005, 16/02/2005 issued by FEMA (Ref.1).	Ok	Ok
Verify operation licence from ANEEL (national energy agency). Check if the PDD information can be confirmed with the specifications described in the licenses.	DR	DR	Verified: ANEEL Resolution n° 72, 02/03/2004 issued by ANEEL for SHP Garganta da Jararaca.	Ok	Ok
Verify PPA (Power purchase agreement) – PCH Garganta da Jararaca	DR	DR	Verified the PPA signed between Cemat and Rio do Sangue Energia Ltda (owner of Garganta da Jararaca small hydro plant), 05/07/2004.	Ok	Ok
Verify stakeholders' consultation evidences. Verify if there are any comments from the consultation.			Copy of the letters sent and mail receipts (ARs) were verified and evidenced that the list of stakeholders presented in the PDD was consulted. A response from FBOMS was received, suggesting the use of Gold Standard or similar tools for monitoring (see items 7.4 and 7.5 of this checklist).	Send copy of the SEMA "AR".	Ok
Verify evidences of the construction of the SHP.	DR	Site visit/ DR	The site visit was carried out in Garganta da Jararaca PCH, and it was verified the construction of the hydropower plant.	Ok	Ok
Verify reservoir area (they comply with the PDD information and with the environmental licenses?)	DR	DR/ site visit	Verified the map that presents the reservoir area. Verified Garganta da Jararaca map (05/2006) –	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Ref. 2. It was in compliance with the PDD description.		

References consulted during Ground Truthing and brief summary of content / significance [please try to obtain a hard copy where ever possible]:

Ref no.	Title (full bibliographic reference if possible)	Brief note on content / significance	Hard copy (Y/n)
1	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).	Y
2	05/2006 Garganta da Jararaca map.	Reservoir map of Garganta da Jararaca.	Y
3	Environmental program worksheet.	Environmental and social programs of the SHP.	Y
4	"Diagnóstico Ambiental da PCH Garganta da Jararaca, 1999, prepared by Global Empreendimentos Turísticos, Larrosa & Santos.	Environmental study of Garganta da Jararaca plant.	Y
5	Ofício number 372/2006-SCG/ANEEL, 29/03/2006 issued by ANEEL.	Authorization to utilize hydro resources for Garganta da Jararaca plant.	Y
6	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.	Y
7	PPA signed between Cemat and Rio do Sangue Energia Ltda (owner of Garganta da Jararaca small hydro plant), 05/07/2004.	Power purchase agreement.	Y

Individuals interviewed during Validation and Ground Truthing [name, position and contact details, plus a brief summary of points discussed

Date met	Name	Position	Contact details	Brief note on subject of interview
12/05/2006	Sergio Posternak	Administrative Manager	Atiaia Energia posternak@atiaiaenergia.com.br +55(65) 2121-4400	Operational issues, contracts.

12/05/2006	Roberto Juliano B. Sena	Environmental Coordinator	Atiaia Energia +55(65) 2121-4400 roberto@atiaiaenergia.com.br	Environmental license, maps.
12/05/2006	José Carlos Ribeiro	Engineer	Atiaia Energia +55(65) 2121-4400	Technical issues.
12/05/2006	Ricardo Besen	Consultant	Ecoinvest Carbon Brasil rbesen@ecoinvestcarbon.com +55 (11) 3063-9068	PDD developing, monitoring plan, baseline study.
12/05/2006	Karen Nagai	Consultant	Ecoinvest Carbon Brasil karen@ecoinvestcarbon.com +55 (11) 3063-9068	PDD developing, monitoring plan, baseline study.

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FINDINGS OVERVIEW

FINDINGS FROM VALIDATION OF *GARGANTA DA JARARACA SMALL HYDROELECTRIC POWER PLANT (SHP) – ATIAIA ENERGIA S.A. PROJECT ACTIVITY - CDM.VAL0569*

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.

Description of table:

Type	Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Please note that this is an open list and more findings may be added as validation progresses.

Date: 08/05/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
1	CAR	There is no plan for monitoring sustainable development indicators or environmental impacts.	5.1-1 to 5.1.4
Date: 17/05/2006 The plan for monitoring development indicator/environmental impacts is shown in Annex 4 (revised PDD).			
Date: 18/05/2006 – Aurea Nardelli. [Acceptance and close out]: The revised PDD, Annex 4, presents the environmental and social programs that will be monitored. CAR 1 was closed out.			

Date: 12/05/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
2	CAR	The baseline emission factor is defined as (EF_y) and is calculated as a combined margin (*CM*), consisting of the combination of operating margin (OM) and build margin (BM) factors. During the desk study it was verified that the emission factor calculation did not use the most recent value available.	2.3/2.6
Date: 17/05/2006 Emission factor was revised, as shown in section E.4.of PDD			
Date: 18/05/2006 – Aurea Nardelli. [Acceptance and close out]: It was confirmed that the emissions factor was revised and the new value was included in the PDD. CAR 2 was closed out.			

Date: 12/05/2006 Raised by: Fabian Gonçalves/Aurea Nardelli

No.	Type	Issue	Ref
3	NIR	The explanation about the investment barrier is not clear. The IRR worksheet presented is not transparent, i.e., no formulas and assumptions were provided.	3.2
Date: 17/05/2006 Investment barrier was revised, as shown in section B.3. Spreadsheets with IRR calculations were provided.			
Date: 18/05/2006 – Aurea Nardelli. [Acceptance and close out]: The investment barrier was revised and IRR worksheet was verified. The text in the PDD regarding the investment barrier was revised. The IRR assumptions and formulas were provided to the assessment team and were considered reasonable. It was verified that the investment barrier is not the most important barrier as the project received subsidised funds from BDNES (with interest rate lower than the rate of the market). This financial support covers 78% of the project costs (Garganta da Jararaca) with a Long Term Interest Rate rate of 9% plus a 3.0% spread risk for a term of 8 years and grace period of 2 years. PDD Section B.3 was revised to clarify that some barriers which are common to the Brazilian context are not the case of the project. NIR 3 was closed out.			

Date: 12/05/2006 Raised by: Fabian Gonçalves/Aurea Nardelli

No.	Type	Issue	Ref
4	CAR	Recording frequency and proportion of data (presented in section D.2.1.3 of PDD) did not comply with the requirements of ACM0002.	4.2
Date: 17/05/2006 Recording frequency and proportion of data were corrected, as shown in section D.2.1.3.			
Date: 18/05/2006 – Aurea Nardelli. [Acceptance and close out]: The PDD was revised to comply with the methodology. CAR 4 was closed out.			

Date: 12/05/2006 Raised by: Fabian Gonçalves/Aurea Nardelli

No.	Type	Issue	Ref
5	NIR	Section D.4 of the PDD did not present information about the management structure and authority and responsibility of project.	5.2.1/ 5.2.2
Date: 17/05/2006 Authority and responsibility of project management are included in the revised PDD.			
Date: 18/05/2006 – Aurea Nardelli. [Acceptance and close out] : The PDD was revised and the authority and responsibility of project management is presented in Annex 4. The SHP staff are responsible for project management, training, monitoring, measurement and reporting activities. NIR 5 was closed out.			

Date: 27/06/2006 Raised by: Aurea Nardelli

No.	Type	Issue	Ref
6	CAR	The PDD was not correctly completed and did not use the current version; the PDD template was not correctly applied and the document had been completed modifying headings, format and	1.6/1.10/8.1.1

		fonts. It was used a template "version 3" that is not a CDM document and have changed format and fonts.	
Date: 19/07/2006 A new version of the PDD was prepared and sent to SGS.			
Date: 31/07/2006 – Aurea Nardelli. [Acceptance and close out] : The PDD was revised (twice) to be in compliance with the PDD-CDM template. CAR 6 was closed out.			

Date: 17/07/2006 Raised by: Aurea Nardelli

No.	Type	Issue	Ref
7	CAR	During the validation process, the PDD was revised to use the latest version of ACM 0002 (version 6). The methodology 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/m².". The original PDD (version 1 to 3) had included three plants. One of then was excluded because there were problems with social aspects. Considering the remained two plants, one was a small hydro plant (Porto das Pedras) which has a power density less than 4 W/m². It is not acceptable by ACM0002.	2.1
Date: 31/07/2006 A new version of PDD was prepared and sent to SGS.			
Date: 31/07/2006 – Aurea Nardelli. [Acceptance and close out] : The PDD was revised (twice) to be in compliance with ACM0002 version 6. Only the plant Garganta Jararaca meets all the applicability criteria of the methodology. The plant Porto das Pedra was excluded of the project. CAR 7 was closed out.			

Date:17/07/2006 Raised by: Aurea Nardelli

No.	Type	Issue	Ref
8	CAR	The project emissions should be determined in accordance with the methodology described. The version 6 of the ACM0002 require that the PE should be calculated from the "power density". No reference about this was included in the PDD. PE is dependent on the reservoir area and capacity installed of the plant. These parameters are used for "Power density" calculation. No information about reservoir area is included in Section D of the PDD.	2.4/4.3
Date:31/07/2006 The PDD was revised and information about PE was included.			
Date: 31/07/2006 – Aurea Nardelli. [Acceptance and close out]: Information about PE calculation and demonstration why PE=zero was provided in the revised PDD. "According to ACM0002 (version 6), new hydro electric power projects with reservoirs, shall account for project emissions. For SHP Garganta da Jararaca, considering the capacity of the project: 29.83MW and area of reservoir: 2.87 Km2, the power density = 29.3/2.87 = 10.2 W/m2. If power density of the project is greater than 10W/m2, PEy = 0". CAR 8 was closed out.			

Observations:

1) 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, the project managers will prepare the Operation and Maintenance Manual for the SHP.

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.

Annex 6 - Local assessment checklist

Garganta da Jararaca Small Hydroelectric Power Plant (SHP) – Atiaia Energia S.A. Project Activity (CDM.VAL 0569)

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document. It serves as a "reality check" on the project. It is to be completed by a local assessor of SGS Brazil.

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Verify the environmental licenses/ environmental impacts (are the SHP in compliance with the legal requirements applied to the project?)	The following documents were verified: - Garganta da Jararaca: Technical opinion n° 054/COINF/DIMI/2005 issued by FEMA. Installation license n° 102/2005, 16/02/2005 issued by FEMA.	Visit/DR	No
Verify operation licence from ANEEL (national energy agency). Check if the PDD information can be confirmed with the specifications described in the licenses.	Verified: ANEEL Resolution n° 72, 02/03/2004 issued by ANEEL for SHP Garganta da Jararaca.	Visit/DR	No
Verify PPA (Power purchase agreement) – PCH Garganta da Jararaca	Verified the PPA signed between Cemat and Rio do Sangue Energia Ltda (owner of Garganta da Jararaca small hydro plant), 05/07/2004.	Visit/DR	No
Verify evidences of the construction of the SHP.	The site visit was carried out in Garganta da Jararaca PCH, and it was verified the construction of the hydropower plant.	Visit	No

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Verify stakeholders' consultation evidences. Verify if there are any comments from the consultation.	Copy of the letters sent and mail receipts (ARs) were verified and evidenced that the list of stakeholders presented in the PDD was consulted. A response from FBOMS was received, suggesting the use of Gold Standard or similar tools for monitoring (see items 7.4 and 7.5 of the validation checklist).	Visit/DR	Send copy of the AR of the letter sent to SEMA. Ok
Verify reservoir area (they comply with the PDD information and with the environmental licenses?)	Verified the map that presents the reservoir area. Verified Garganta da Jararaca map (05/2006). It was in compliance with the PDD description.	Visit/DR	No