VALIDATION REPORT

MGM International Group LLC

ARS Small Hydroelectric Power Plant

SGS Climate Change Programme
SGS United Kingdom Ltd
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United Kingdom

Date of Issue:	**Project Number:**
02.09.2009	CDM.VAL0950 BR04
Project Title:	
ARS Small Hydroelectric Power Plant.	
Organisation:	**Client:**
SGS United Kingdom Limited	MGM International Group LLC
Publication of PDD for Stakeholders Consultation	
Commenting Period: First ISHC	18th April 2007 to 17th May 2007
Commenting Period: Second ISHC	13th December 2007 to 11th January 2008
Commenting Period: Third ISHC	28th February 2009 to 29th March 2009
First PDD Version and Date:	Version 1, dated 9th March 2007
Final PDD Version and Date:	Version 5, dated 22nd May 2009

Summary:

MGM International Group LLC has commissioned SGS to perform the validation of the project: ARS Small Hydroelectric Power Plant.

Methodology Used: AMS – I.D.
Version and Date: version 13, dated 14th December 2007

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 applicable CDM requirements.

The report is based on the assessment of the project design document undertaken through stakeholder consultations, application of standard auditing techniques including but not limited to document reviews, follow up actions (e.g. site visit, telephone or e-mail interviews) and also the review of the applicable simplified methodology and underlying formulae and calculations.

The report and the annexed validation describes a total of 17 findings which include:

- (12) Corrective Action Requests (CARs);
- (3) Clarification Requests (CLs);
- (2) Forward Action Requests (FARs); and

All findings have been closed satisfactorily.

The project:

- ☒ Will be recommended to the CDM Executive Board with a request for registration
- ☐ Negative Validation Opinion will be issued and the validation report shall be sent to the CDM Executive Board.

The only amendments made to this validation report compared to the report referred in the Brazilian Letter of Approval (LoA) are highlighted in Annex 5 of this report and minor corrections in the prevailing practice discussion. The changes do not affect the validation opinion.

Subject:			**Document Distribution**
CDM Validation			
Validation Team:			
Geisa Principe – Lead Assessor Andrew Collins – Assessor (Trainee)			☒ No Distribution (without permission from the Client or responsible organisational unit)
Technical Review:	**Trainee Technical Reviewer:**		
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Name: Siddharth Yadav Date:			☐ Unrestricted Distribution
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Abbreviations

ANEEL	Agência Nacional de Energia Elétrica – Brazilian Electricity Regulatory Agency
BIG	Banco de Informação de Geração -
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
DOE	Designated Operational Entity
DNA	Designated National Authority
EB	CDM Executive Board
ER	Emission Reductions
FAR	Forward Action Request
FEMA	Fundação Estadual do Meio Ambiente
GHG	Greenhouse Gas(es)
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MCT	Ministry of Science and Technology
MP	Monitoring Plan
PA	Project Activity
PDD	Project Design Document
PPA	Power Purchase Agreement
SGS	SGS United Kingdom Limited
SHP	Small Hydropower
VVM	Validation and Verification Manual
UNFCCC	United Nations Framework Convention on Climate Change

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Annexes:

1. Validation Opinion

SGS United Kingdom Ltd has been contracted by MGM International Group LLC to perform a validation of the project: ARS Small Hydroelectric Power Plant in Brazil.

The Validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism (CDM), Validation and Verification Manual (VVM) version 1 and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

By the project activity consists of the installation a small hydro power with 6.66MW of installed capacity, which will provide renewable electricity to the Brazilian Interconnected Electricity System. The project activity will result in reductions of greenhouse gas (GHG) emissions that are real, measurable and give long-term benefits to the mitigation of climate change.

In our opinion, the project meets all relevant UNFCCC, CDM criteria and all relevant host country criteria. The project correctly applies methodology AMS – I.D. version 13. It is demonstrated that the project 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.

The total emission reductions from the project are estimated to be 59,074 tCO2e over a 7 year crediting period, averaging 8,439 tCO2e annually. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given the underlying assumptions do not change.

The project will hence be recommended by SGS for registration with the UNFCCC.

Signed on Behalf of the Validation Body by Authorized Signatory

Signature:

Name: Siddharth Yadav

Date:

2. Introduction

2.1 Objective

MGM International Group LLC has commissioned SGS to perform the validation of the project: ARS Small Hydroelectric Power Plant with regard to the relevant requirements for Clean Development Mechanism (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 (EB).

2.2 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 (KP) 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.

2.3 GHG Project Description

The purpose of the proposed project activity is the construction and installation of a new small hydroelectric power plant with a capacity of 6.6 MW. The objective is to provide renewable electricity to the Brazilian Interconnected Electricity System (BIES). The main objectives of the project are to help meet the rising demand for energy due to economic growth and contribute to environmental, social, and economic sustainability by increasing the amount of renewable energy in Brazil`s total consumption. The energy generated will be dispatched into the grid, avoiding the use of non renewable sources of energy, such as fossil fuel sources which increase the greenhouse gas (GHG) emissions.

2.4 The Names and Roles of the Validation Team Members

Name	Role	Affiliate
Geisa Principe	Lead Assessor	SGS Brazil
Andrew Collins	Assessor (Trainee)	SGS Brazil

See Annex 5 for more details.

3. Methodology

3.1 Review of CDM-PDD and Additional Documentation

The validation is performed primarily as a document review of the publicly available project document (ref. 1) version 4 dated 17th February 2009 and the subsequent versions dated 22th May 2009 (final version). The assessment is performed by trained assessors using a validation protocol attached as Annex 2 Table 2

The site visit was performed on 16th – 18th March 2009 and 4th – 7th May 2009. The results are summarised in Annex A.1.

3.2 Use of the Validation Protocol

The validation protocol used for the assessment is designed in accordance with the Validation and Verification Manual version 1, dated 28th November 2008. 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 (reporting).

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

Checklist Question	Ref ID	Means of Verification (MoV)	Comment	Conclusion/ CARs/CLs
The various requirements are linked to checklist questions the project should meet.	Lists any references and sources used in the validation process. Full details are provided in the table at the bottom of the checklist.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). Clarification Request (CL) is used when the validation team has identified a need for further clarification.

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

3.3 Findings

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

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR).** A CAR is issued, where:

I. The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
II. The CDM requirements have not been met;
III. There is a risk that emission reductions cannot be monitored or calculated.

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

A Forward Action Request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

CARs and CLs are raised in the draft validation protocol and detailed in a separate form (Annex A.3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to CLs and FARs.

3.4 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. Findings can be raised at this stage and Client must address them within agreed timeline.

4. Validation Findings

4.1 Approval

At the time of validation the assessment team have not been supplied with a Letter of Approval (LoA) (ref. 2) from the host country (Brazil). The LoA (ref. 2) from Brazil is pending receipt of the final validation report from the DOE before going for DNA approval.

Once DNA approval has been received a LoA (ref. 2) for the host country will be issued (see Annex 5 for more details).

4.2 Participation Requirements

Brazil is the Host Party and is ratified the Kyoto Protocol.

Kyoto Protocol	
Date of Signature	29th April 1998
Date of Ratification	23rd August 2002
Date of Entry into Force	15th February 2005

(Source: Adapted from UNFCCC, Parties and Observer States (ref. 43 – Weblink: http://unfccc.int/parties_and_observers/parties/items/2352.php – 28th May 2009**))**

4.3 Project Design Document including Project Description

From the information supplied in the PDD (version 4) (ref. 1) section A.1. the project title stated "ARS Small Hydroelectric Power Plant", the title is considered unique to allow readers to identify the project activity (PA).

CAR #1 was raised because the information provided in the PDD (version 4) (ref. 1) section A.2. did not provide a clear understanding of the project activity (PA). Information relating to the type of hydro plant was unclear along with supporting evidence to the mention of three thermoelectric plants.

To close out **CAR #1** the PP submitted a revised PDD (version 5) (ref. 1) section A.2. provided additional information regarding the purpose of project description. The purposed project activity contributes to renewable electricity of the Brazilian Interconnected Electricity System (BIES). On ANEEL webpage (ref. 13), there is a clearly information about Mato Grosso electricity data.

The PP provided evidence (ref. 12) of the three thermoelectric plants stating that the plants were the current scenario when the decision to implement the proposed project activity was taken. The three plants generate electricity using fossil fuel whereas the proposed project activity will contribute to emission reduction through renewable energy from small hydropower.

A complete definition of run-of-river was correctly stated in the revised PDD (version 5, pg. 6) (ref. 1). The proposed project activity has 1.64 Km² reservoir area, on which it is considered as a run-of-river. This information was confirmed at site inspection and ANEEL license (ref. 14).

Further technical description was added to the PDD (version 5) (ref. 1), including the projects installed capacity of 6.66MW, consisting of 2 turbines-generators of 3.33MW each.

CAR #1 closed out (see Annex A.3 for more details).

CAR #2 was raised because information provided in the PDD (version 4) (ref. 1) was incomplete. Further information relating to project description, install capacity etc is required as per EB 34, Annex 9 (ref. 10).

To close out **CAR #2** the PP included in the PDD (version 5) (ref. 1) the technical description (ref. 15) which presents information about engineering plan of ARS plant was provided.

The revised documentation was verified (ref. 1, 16) by the assessment team, according to AMS I.D, v. 13 (ref. 4), the eligibility for small scale is 15MW of installed capacity, then the project activity confirm its eligibility due to the capacity installed is of 6 MW.

CAR #2 closed out (see Annex A.3 for more details).

The information supplied in the PDD (version 4) (ref. 1) section A.2. was consistent with details provided in further chapters of the PDD (version 4) (ref. 1).

The PDD (version 4) (ref. 1) section A.3. complies with EB34, Annex 9 (ref. 8) and was considered correct, the section contained the following information:

Brazil	Tecnovolt Centrais Elétricas S.A.	No

(source: Adapted from PDD version 4, dated 17th February 2009)

CAR #3 was raised because information provided in the PDD (version 4) (ref. 1) was incomplete. The information supplied in section A.3. of the PDD was consistent with the information supplied in Annex 1, however there information supplied in Annex 1 was incomplete as per the required information requested in EB34, Annex 9 (ref. 10).

To close out **CAR #3** the PP submitted a revised PDD (version 5) (ref. 1) including information regarding address, city, location, state, contacts and additional information (ref. 16).

The revised documentation (ref. 1, 16) was verified by the assessment team and found to be incompliance with EB34, Annex 9 (ref. 12).

CAR #3 closed out (see Annex A.3 for more details).

CAR #4 was raised because information provided in the PDD (version 4) (ref. 1) section A.4.1. was unclear. Section A.4.1. supplied a general description about the project location including unique latitude and longitude coordinates, which were checked and found to be correct. However section A.4.1. also contained a diagram (figure 1) of a map. The map was unclear what it was suppose to show the PP we requested to provide a more detailed map showing the PA.

To close out **CAR #4** the PP submitted a revised PDD (version 5) (ref. 1) including a new Figure 1 with a quick view of the project location.

The revised documentation (ref. 1, 17) was verified by the assessment team and found to be satisfactory.

CAR #4 closed out (see Annex A.3 for more details).

The information supplied in the PDD (version 4) (ref. 1) section A.4.2. the project activity (PA) involves the construction and installation of a small hydroelectric power plant. Furthermore, there are licenses issued by environmental and energy agencies (ref. 14, 16, 18) confirming that the project activity is a new hydropower.

From the PDD (version 4) (ref. 1) there was no indication that of ownership or licenses, were available, which allowed the implementation of the proposed project activity (PA) at the site. During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 the following documentation was verified (ref. 14, 18, 27) by the assessment team.

According to PP, the project implementation requires the following licenses were issued by FEMA (Fundação Estadual do Meio Ambiente):

- Installation license, number 397/2003, issued 29th December 2003 (ref. 27)
- Installation license, number 154, issued 2nd March 2005 (ref. 27)
- Installation license, number 1096, issued 16th May 2008 (ref. 27)
- Operation license, number 297328/2009, issued 30th April 2009 (ref. 16)

According to ANEEL (Agência Nacional de Energia Elétrica) requirements the following licenses were issued:

- ANEEL: 28th May 2002 (resolution no.284) (ref. 27).
- ANEEL: 16th November 2004 (dispatch no. 911) (ref. 14).
- ANEEL: 5th August 2008 (resolution no. 1490) (ref. 18).

CL #5 was raised because information provided in the PDD (version 4) (ref. 1) section A.4.3. was unclear. Section A.4.3. showed a table showing the PA emission reductions (ER). However it was unclear is the stated Ers had been correctly applied. The PP was requested to submit an ER spreadsheet (ref. 35) clearly showing how they had obtained the stated ER.

The PP was also requested to make sure that section A.4.3. met the requirements as stated in EB36, Annex 9.

To close out **CL #5** the PP submitted a revised PDD (version 5) (ref. 1) and Emissions Reductions (ER) (ref. 35) spreadsheet to clarify the ER calculation. Changes related to the references of the calculus and with the updating of the Brazilian Emission Factor (using values for year 2008) were made in the spreadsheet, which modify the Ers. The modification was updated in the PDD (ref. 1), section A.4.3 and section B.6.4. The Tables for indicating estimated emission reductions, was adjusted to the correct format.

The revised documentation was verified (ref. 1, 35) by the assessment team and from the information supplied in the PDD (version 5) (ref. 1) section A.4.3. and B.6.4. have been correctly applied and conformed to EB34, Annex 9 (ref. 10).

The ER spreadsheet (ref. 35) was cross-checked with the PDD (ref. 1), MCT and other relevant information obtained (ref. 21-22) from the site visit, conducted on the 16th – 18th March and 4th – 7th May 2009 and found to be correct and inline with AMS – ID v. 13 (ref. 4).

CL #5 closed out (see Annex A.3 for more details).

From the information supplied in the PDD (version 4) (ref. 1) section A.4.5. states there is no public funding involved in the project activity (PA). All information regarding public funding is consistent with further chapters, in particularly Annex 2 of the PDD (ref. 1).

4.4 Eligibility as a Small Scale Project

4.4.1 Small-scale Eligibility

According to the requirements set out in Decision 4/CMP.1, Annex II (ref. 42) a Type I project activity is a renewable energy project activity with a maximum out put capacity equivalent to up to 15MW (or equivalent).

The installed capacity and assured energy are described in the section A.4.2, as verified from the ANEEL license (ref. 16).

Installed Capacity	6.66 MW	Assured Energy	5.23 MW

(Source: Adapted from Aneel Dispatch No. 911, dated 15th February 2006)

In conclusion the propose project activity meets the requirements of small-scale Type I as described by Decision 4/CMP.1, Annex II (ref. 42).

4.4.2 Debundling

According to the requirements of EB36, Annex 27 (ref. 7) that state:

"A proposed small-scale project activity shall be deemed to be a debundled component of a large project activity if there is a registered small-scale CDM project activity or an application to register another small-scale CDM project activity:

- *With the same project participants;*
- *In the same project category and technology/measure;*
- *Registered within the previous 2 years and*
- *Whose project boundary is within 1 km of the project boundary of the proposed small-scale activity at the closest point."*

There is no other SSC CDM project activity with an application to register or registered in the same project category and with the same project participants neither registered, nor waiting for registration, nor with a PDD made publicly available.

4.5 Applicability of Selected Methodology to the Project Activity

From the information supplied in the PDD (version 4) (ref. 1) section B.1. is applying AMS – I.D. version 13, approved in EB36 (ref. 4).

The methodology and tools used have not been altered from the original stated in the PDD (version 4) (ref. 1).

CAR #6 was raised because information provided in the PDD (version 4) (ref. 1) was unclear. Section B.2. supplied a brief description of the choice of the project description. As per the requirements of EB34, Annex 9 (ref. 10), section B.2. should clearly justify how the PA meets the project type and category. The PA is also required to demonstrate how the PA meets the small-scale requirements and how it will remain within these requirements.

To close out **CAR #6** the PP submitted a revised PDD (version 5) (ref. 1), as per AMS ID version 13 (ref. 4), the section technology/measure was inserted in the PDD (ref. 1) section B.2. Each paragraph and its applicability condition were analyzed in PDD according to project application.

The revised documentation was verified (ref. 1, 14) by the assessment team and found to be in compliance with the requirements of EB34, Annex 9 (ref. 10).

CAR #6 closed out (see Annex A.3 for more details).

From the information supplied in the PDD (version 5) (ref. 1) section B.2. Applicability with AMS – ID v. 13 (ref. 4) was as follows:

1. *"This category comprises renewable energy generation units, such as photovoltaic, 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."*

The project consists of renewable energy generation that supplies electricity to a fossil fuel fired distribution system; therefore the proposed project activity meets this applicability criterion. According to ANEEL permission (ref. 14, 18, 27), the project activity will supply electricity through renewable energy to the Brazilian National Interconnected System

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 fuel1, the capacity of the entire unit shall not exceed the limit of 15MW."*

The project consists of renewable energy generation with a total installed capacity of 6.66 MW (ref. 14, 18, 27). Furthermore, it will generate renewable energy to the grid; therefore the proposed project activity meets this applicability criterion.

3. *"Combined heat and power (co-generation) systems are not eligible under this category."*

Not applicable, considering there is no co-generation systems under the proposed project activity. The project activity is composed of a small hydropower of 6.66MW installed capacity (ref. 14, 18, 27). There is no co-generation system under this project.

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."*

Not applicable, since the project is not adding energy generation units to an existing renewable power generation facility. The project activity refers to a new hydropower with 6.66MW of installed capacity (ref. 14, 16, 18, 27).

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."*

Not applicable, since the project does not modify or retrofit an existing facility for renewable energy generation. It is new hydropower with 6.66MW of installed capacity (ref. 14, 16, 18, 27).

The project activity will not exceed 15MW installed capacity during the crediting period. According to manufacture's specification (ref. 14, 18) the maximal limit is 6.66MW.

4.6 Project Boundary

According to AMS.I.D, version 13 (ref. 1): The project boundary encompasses the physical, geographical site of the renewable generation source.

The project boundary encompasses the physical, geographical ARS plant generation sources, that is the Von Den Steinen river (ref. 14 and 18), and Brazilian National Interconnected System (ref. 28).

The Brazilian DNA adopted a single system for the CDM projects using Tool for calculating the emission factor associate with ACM0002.

From the information supplied in the PDD (version 4) (ref. 1) section B.3. states the most relevant grid has been correctly identified in accordance with the tool to calculate emission factor of electricity system and the underlying methodology.

Brazil has a unique emission factor of the grid, determined by MCT (Science and Technology Ministry) (ref. 21-22). The MCT has published a resolution (number 8, dated 26th May 2008) that establishes a unique emission factor for entire Brazilian Interconnected Electricity System (ref. 21-22).

The project boundary encompasses the physical, geographical site of the hydropower generation source, represented by the Von Den Steinen river basin near the power plant facility and the BIES. The assessment team verified the project boundary at the site visit conducted 16th – 18th March and 4th – 7th May 2009 and found the project boundary to be in accordance with AMS – ID v.13 (ref. 4).

4.7 Baseline Selection and Additionality

The proposed project activity is in line with all tools and procedures applied as per the approved methodology AMS – I.D. version 13 (ref. 4).

The baseline scenario according to AMS.I.D, version 13: a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system'.

The information supplied in the PDD (version 5) (ref. 1) section B.4. the selection of the baseline is consistent with available (public) data. All key assumptions are explained and information sources clearly referenced. Sources were checked to ensure information (ref. 21-22) contained in the PDD (ref. 1) was correct.

The project uses Attachment A of Appendix B of the Simplified modalities and Procedures, version dated 30th September 2005 (ref. 7) to discussion the additionality.

All steps are followed in a transparent manner.

The project activity is in accordance with all relevant national policies and circumstances.

Environmental Requirements:

The following licenses were issued by FEMA (Fundação Estadual do Meio Ambiente):

- Installation license, number 397/2003, issued on 29/12/2003 (ref. 27)
- Installation license, number 154, issued on 02/03/2005 (ref. 27)
- Installation license, number 1096, issued on 16/05/2008 (ref. 27)
- Operation license, number 297328/2009, issued on 30/04/2009 (ref. 16)

Energy Requirements:

ANEEL (Agência Nacional de Energia Elétrica) the following licenses were issued:

- ANEEL: 28th May 2002 (resolution no. 284) (ref. 27)
- ANEEL: 16th November 2004 (dispatch no. 911) (ref. 14)
- ANEEL: 5th August 2008 (resolution no. 1490) (ref. 18)

4.7.1 Additionality

In accordance with Attachament A of Appendix B of the Simplified M&P for the Small-Scale CDM Project Activities (ref. 7), a barrier analysis could be carried out in order to demonstrate project additionality. It is required an explanation to show that the project activity would not have occurred anyway due to at least one

of the following barriers: investment barrier, technological barrier, barrier due to prevailing practice and other barriers. The PDD discussed the prevailing practice and others.

CAR #9 was raised because information provided in the PDD (version 4) (ref. 1) section B.5. in regards to additionality, lacked sufficient justification or evidence for the following reasons:.

CAR #9 (a-c) was raised because information supplied in the PDD (version 4) section B.5. regarding the references in relation to large-scale projects were not applicable to a small-scale project. The PP submitted a revised PDD (version 5) excluding the references in order to follow CDM_Glos04.

CAR #9d was raised because from information supplied in the PDD (version 4) section B.5. footnote 5 made reference to a web-link that was accessed in 2007. However upon verifying the web-link (25th February 2009) it was not possible clarify the original information stated as the website had last been updated 9th February 2009. The ANEEL web-link (Brazilian Electricity Regulatory Energy), which was mentioned in the original information of the common practice (PDD version 4), has updated in order to provide the credibility of the analysis performed.

CAR #9(e-f) was raised because from the information supplied in the PDD (version 4) section B.5. contained unclear information regarding tables, figures and references to a web-link. The references and tables were removed from PDD version 5 due to make clear the barriers analysis.

CAR #9g was raised because the information supplied in the PDD (version 4) made several assumption about the “others barriers”, however none explanation had been provided. During the site visit conducted on 16th March 2009 that assessment team was able to confirm that the project is located an in isolated area where there is no infrastructure such as roads, electricity and communication Because of the lack of infrastructure the owner developed some facilities. Furthermore, there were no qualified staffs, the owner has brought some workers from distant cities due to there is no schools and universities (information confirmed thought interview).

CAR #9(a-g) was closed out (see Annex 3, CAR #9 for more details).

The references and tables mentioned in the PDD (version 4) (ref. 1) to support the discussion of prevailing practice were restructured and clarified in the revised PDD (version 5) (ref. 1). Barrier due to “prevailing practice”, where prevailing practice or existing regulatory or policy requirements would have led to the implementation of the project activity with higher emissions was used to by the project participants.

The PDD (version 5) (ref. 1) section B.5. and Annex 8 discussed and demonstrates that there is a small participation of small hydro plants in Brazilian power market (ref. 28). According to ANEEL (ref. 28) small hydropower in Brazil correspond to 2.64% of the total electricity generated in the country and on the trends of the Brazilian power generation sector as shown by the below table.

Brazilian Power Market

	Quantity	Verified Power (kW)	Market Share (power)	Market Share (quanity)
CGH	293	167062	0,16%	14,11%
EOL	33	417480	0,39%	1,59%
PCH	343	2817459	2,64%	16,52%
SOL	1	20	0,00%	0,05%
UHE	159	74700627	69,95%	7,66%
UTE	1245	26678661	24,98%	59,97%
UTN	2	2007000	1,88%	0,10%
Total	**2076**	**106788309**	**100,00%**	**100,00%**

Key:
CGH = Mini Hydro Power (<1MW)
EOL = Solar Power
PCH = Small Hydro Power (<30MW)
SOL = Tidal Power
UHE = Large Hydro Power
UTE = Thermal Power

(Source: ANEEL, BIG (ref. 28)

From the information presented by the PP (ref. 28, 46, 47) the below table demonstrates that out of a total of 120 power plants for the state of Mato Grosso, Brazil, of which only 35.83% are small-scale hydro (<30MW).

The State of Mato Grosso

	Quantity	Verified Power (kW)	Market Share (power)	Market Share (quanity)
CGH	22	10.048	0,48%	18,33%
PCH	**42**	**512.256**	**24,40%**	**35,00%**
UHE	8	885.180	42,17%	6,67%
UTE	48	691.646	32,95%	40,00%
Total	**120**	**2.099.130**	**100,00%**	**100,00%**

Key:
CGH = Mini Hydro Power (<1MW)
PCH = Small Hydro Power (<30MW)
UHE = Large Hydro Power
UTE = Thermal Power

(Source: ANEEL, BIG, (n.d.) (ref. 25))

The operational small scale hydro power plants are shown in the table below.

Small Operational Hydro Power Plants in the state of Mato Grosso, Brazil.

.Small Hydros in Operation in the state of Mato Grosso, Brazil				
Nº	**Plant Name**	**Installed Power (MW)**	**Category**	**Incentive**
1	Água Suja	1.20	APE-COM	
2	Alto Araguaia	0.80	SP	
3	Antônio Brennand (Ex-Alto Jauru)	20.02	PIE	CDM
4	Alto Paraguai (Pedro Pedrossian)	1.34	SP	
5	Aprovale	1.52	APE	
6	Baruíto	18.30	SP	CDM
7	Camargo Corrêa (Arrossensal)	4.23	PIE	
8	Canoa Quebrada	28.00	PIE	PROINFA

9	Aquarius	4.20	PIE	CDM
10	Faxinal I	2.79	APE	
11	Primavera	8.12	SP	
12	Ronuro	0.87	APE	
13	Salto Belo	3.60	SP	
14	Braço Norte II	10.75	SP	
15	São Domingos (Torixoréo)	2.40	SP	
16	Casca II	3.52	SP	
17	Culuene	1.79	SP	
18	Braço Norte	5.18	SP	
19	Braço Norte III	14.16	PIE	CDM
20	Ombreiras	26.00	PIE	
21	Rio Prata	2.14	PIE	
22	Salto Corgão	27.00	PIE	
23	Indiavaí	28.00	PIE	CDM
24	Poxoréo (José Fragelli)	1.20	SP	
25	Cachoeira da Fumaça	2.56	APE-COM	
26	Santa Lúcia	5.00	PIE	
27	Juína	2.65	SP	
28	Salto	19.00	PIE	CDM
29	Senador Jonas Pinheiro (Caeté)	6.30	PIE	PROINFA
30	Santa Lúcia II	7.60	PIE	CDM
31	Cabixi II	2.80	APE	
32	Braço Norte IV	14.00	PIE	CDM
33	Faxinal II	10.00	PIE	CDM
34	Sacre 2	30.00	PIE	CDM
35	São Lourenço (Ex.Zé Fernando)	29.10	PIE	PROINFA
36	Paranatinga II	29.02	PIE	
37	Sucupira	4.50	PIE	CDM
38	Pequi	6.00	PIE	CDM
39	Engº José Gelásio da Rocha	24.44	PIE	PROINFA
40	Rondonópolis	26.60	PIE	PROINFA
41	Garganta da Jararaca	29.30	PIE	CDM
42	Graça Brennand (Ex.Terra Santa)	18.27	PIE	CDM

(Source: PDD (version 5), Annex 8, dated 22nd May 2009) – Original source – http://www.aneel.gov.br/aplicacoes/ResumoEstadual/GeracaoTipoFase.asp?tipo=5&fase=3&UF=MT:MATO%20GROSSO

The original source from the table above was confirmed on the ANEEL and UNFCCC website. No deviation was found.

Legend

PROINFA – Programme of incentives for alternative electricity sources – law N° 10438	The programme has incentive to increase renewable projects, also has special incentive financing from BNDES (Brazilian National Development Bank). http://projects.wri.org/sd-pams-database/brazil/programme-incentives-alternative-electricity-sources-proinfa http://www.eletrobras.gov.br/EM_Programas_Proinfa/default.asp
CDM Clean Development Mechanism	Carbon credits
APE – auto – supplying	http://www.aneel.gov.br/aplicacoes/Manuais%5Fbanco%5Fde%5Finformacoes/
SP – Public service	http://www.aneel.gov.br/aplicacoes/Manuais%5Fbanco%5Fde%5Finformacoes/
PIE – Independent Power Producer	ARSSHP http://www.aneel.gov.br/aplicacoes/Manuais%5Fbanco%5Fde%5Finformacoe

	s/

Of the small scale hydro power plants that are currently operational in the state of Mato Grosso, Brazil, PROINFA makes up 4.17%, CDM 11.67% and 19.17% other or public initiatives as demonstrated in the below table.

Operational Small Hydro in Mato Grosso

			State Market Share (small hydro)	State Market Share (power plants)	Market Share (Brazil)
Incentive	Data	Total	35%	6%	100%
CDM	Sum of Installed Power (MW)	223.35	46.12%		
	Sum of Count	14	33.33%	11.67%	0.67%
Other	Sum of Installed Power (MW)	146.48	30.25%		
	Sum of Count	23	54.76%	19.17%	1.11%
PROINFA	Sum of Installed Power (MW)	114.44	23.63%		
	Sum of Count	5	11.90%	4.17%	0.24%
Total Sum of Installed Power (MW)		484.27			
Total Sum of Count		42			

(SOURCE: Adapted from PDD (version 5), Annex 8, dated 22nd May 2009) – Original source – http://www.aneel.gov.br/aplicacoes/ResumoEstadual/GeracaoTipoFase.asp?tipo=5&fase=3&UF=MT:MATO%20GROSSO

The original source from the table above was confirmed on the (ref. 28, 46, 47) and no deviation was found.

The propose project activity is 6.66MW with an assured power output of 5.23MW. Under CDM the requirement for small-scale hydro electric power projects is 15MW. Look at the range of operational small-scale hydro power projects in the state of Mato Grosso between 0.8MW and 15MW there are 28 within the range of CDM small-scale hydro in operation. These 28 power plants represent 67% of the operational small hydro electric power plants in the state of Mato Grosso

CDM Small Hydro Range between 0.8MW and 15MW in Mato Grosso

Projects meeting the Capacity of CDM Small-scale Hydro	28	67%
Projects in Operation in the State of Mato Grosso	42	

(SOURCE: Adapted from PDD (version 5), Annex 8, dated 22nd May 2009) – Original source – http://www.aneel.gov.br/aplicacoes/ResumoEstadual/GeracaoTipoFase.asp?tipo=5&fase=3&UF=MT:MATO%20GROSSO

The original source from the table above was confirmed on the ANEEL and UNFCCC website. No deviation was found.

As demonstrated above of 120 power plants in the state of Mato Grosso, 35% are small hydro power plants. Of those projects in operation 67% represents the same capacity criteria to meet small-scale hydro power requirements (<15MW). 5.83% already had CDM Incentive. 0.83% had incentive from PROINFA and 16.67% had other initiatives as demonstrated by the below table.

CDM Small Hydro Range between 0.8MW and 15MW in Mato Grosso

			State Market Share (small hydro)	State Market Share (power plants)	Market Share (Brazil)
Incentive	Data	Total	35%	6%	100%
CDM	Sum of Installed Power (MW)	60.46	46.08%		
	Sum of Count	7	25.00%	5.83%	0.34%
Other	Sum of Installed Power (MW)	64.46	49.12%		
	Sum of Count	20	71.43%	16.67%	0.96%
PROINFA	Sum of Installed Power (MW)	6.3	4.80%		
	Sum of Count	1	3.57%	0.83%	0.05%
Total Sum of Installed Power (MW)		131.22			
Total Sum of Count		28			

(SOURCE: Adapted from PDD (version 5), Annex 8, dated 22nd May 2009) - - Original source – http://www.aneel.gov.br/aplicacoes/ResumoEstadual/GeracaoTipoFase.asp?tipo=5&fase=3&UF=MT:MATO%20GROSSO

The original source from the table above was confirmed on the ANEEL and UNFCCC website. No deviation was found.

The projects that already received CDM and PROINFA incentives were disregarded from the analysis and the remaining 20 power plants were looked at and shown in the below table.

Small Hydro Electric Power Project

Plant Name	Installed Power (MW)	Category	Incentive
Alto Araguaia	0.8	SP	Other
Ronuro	0.87	APE	Other
Água Suja	1.2	APE-COM	Other
Poxoréo (José Fragelli)	1.2	SP	Other
Alto Paraguai (Pedro Pedrossian)	1.34	SP	Other
Aprovale	1.52	APE	Other
Culuene	1.79	SP	Other
Rio Prata	2.14	PIE	Other
São Domingos (Torixoréo)	2.4	SP	Other
Cachoeira da Fumaça	2.56	APE-COM	Other
Juína	2.65	SP	Other
Faxinal I	2.79	APE	Other
Cabixi II	2.8	APE	Other
Casca II	3.52	SP	Other
Salto Belo	3.6	SP	Other
Camargo Corrêa (Arrossensal)	4.23	PIE	Other
Santa Lúcia	5	PIE	Other
Braço Norte	5.18	SP	Other
Primavera	8.12	SP	Other
Braço Norte II	10.75	SP	Other

(SOURCE: Adapted from PDD (version 5), Annex 8, dated 22nd May 2009)

The original source from the table above was confirmed on the ANEEL and UNFCCC website. No deviation was found.

From the 16.67% falling under “Other” initiatives shown in the above table the category is further broken down in the follow: APE – captive (3.33%); APE-COM – captive plants (company) (1.67%); PIE – Independent Producer (2.50%) and SP – Public Service (9.17%).

APE and APE-COM will be disregarded because they on provide power for themselves and do not export power to the Brazilian grid. SP will also be disregarded as they are publically funded projects.

From the original 120 projects in the state of Mato Grosso, 42 are small-scale hydro (35%), 19 of these fall into the same requirement as CDM small-scale hydro (65%), leaving 3 in operation owned by independent producers, exporting power to the grid (2.50%) as shown from the below table.

			State Market Share (small hydro)	State Market Share (power plants)	Market Share (Brazil)
Category	Data	Total	35%	6%	100%
APE	Sum of Installed Power (MW)	7.98	12.38%		
	Sum of Count	4	20.00%	3.33%	0.19%
APE-COM	Sum of Installed Power (MW)	3.76	5.83%		
	Sum of Count	2	10.00%	1.67%	0.10%
PIE	Sum of Installed Power (MW)	11.37	17.64%		
	Sum of Count	3	15.00%	2.50%	0.14%
SP	Sum of Installed Power (MW)	41.35	64.15%		
	Sum of Count	11	55.00%	9.17%	0.53%
Total Sum of Installed Power (MW)		64.46			
Total Sum of Count		20			

(

SOURCE: Adapted from PDD (version 5), Annex 8, dated 22nd May 2009)

The original source from the table above was confirmed on the ANEEL and UNFCCC website. No deviation was found.

Of all of the small scale hydro power plants there are two that meet the similar requires of the proposed project activity as demonstrated in the below table.

Small-scale Power Plants Similar to the Proposed Project Activity

Plant Name	Installed Power (MW)	Category	Incentive	Count
Rio Prata	2.14	PIE	Other	1
Camargo Corrêa (Arrossensal)	4.23	PIE	Other	1
Santa Lúcia	5	PIE	Other	1

(SOURCE: Adapted from PDD (version 5), Annex 8, dated 22nd May 2009)

The above forementioned power plants were in the state of Mato Grosso were verified to have similar requirements of the proposed project activity. The three plants are SHP Rio Prata (2,13MW), which has been exporting energy to the grid since 1994 (ref. 32). In 1995 a new law (Law nº 9.074 – 07/07/1995) was established creating a new scenario for electricity services. The law set out new requirements for concession, exploration and commercialization came to force. The implementation of Law nº 9.074 justifies why the proposed project activity is different from Rio Prata SHP.and will not be considered because the decision to implement the project activity was taken in 2001.

The other small hydro power plant, Camargo Corrêa (Aerossensal) (a branch of the Camargo Corrêa Group), in 2003 increased its installed capacity with a retrofit from 800KW to 4.2MW (ref. 33, 34). In 2001 the installed capacity of Camargo Correa SHP was 800KW. According to Brazilian requirement (Resolution Nº 395, dated 4th December 1998 (ref. 48)), hydropower plants <1MW are considered as a mini hydro power (CGH) plants, so it could not be compared with the ARS project.

The above mentioned two plants are differentiated from the proposed project activity and did not face the same barriers.

Santa Lucia is a similar project to ARS has been in operation since 2000. The plant was constructed on an isolated grid to supply energy to the city of Sapezal. With the construction of Santa Lúcia II (CDM project) Santa Lucia was moved from the isolated grid to the national grid. Being connected to the isolated grid the project has different incentives and is a different condition to the construction of ARS.

Therefore Santa Lucia is differentiated from the proposed project activity and did not face the same barriers.

The common practice in Brazil is towards power generation from large hydroelectric and thermal fossil fuel plants (ref. 24). From the analysis, the project activity would not have occurred due to at least one of the barriers required for the small scale project activities (ref. 3).

.**CL #10** was raised to seek clarification for several points in section B.5. of the PDD (version 4) (ref. 1). The following points were raised:

a) The start date of the project activity was stated as the 27th July 2006. The date was the date of the signing of the purchase agreement. Evidence was requested to substantiate the date.
b) Mention of a board meeting being held on the 10th September 2001. Evidence of this board meeting and its outcome was requested. Also clarification was sort as to what was actively done between this meeting and the present date. A partial chronogram had been provided (PDD version 4, Annex 6), but it contained many gaps.
c) Reference made with regards prevailing practice were general. Three schemes were mentioned (PCH-COM, PROFINA, PCH-COM v. 2) but there was no mention of how these schemes affected the project or the barriers these schemes presented to the PA.
d) Section B.5. contained no information on the analysis of prevailing practice. There was no discussion to the extent other similar or operational projects other then CDM PA had been undertaken in the region.
e) In section B.5. of the PDD (version 4) reference was made to a conference held in Rio in 2005. However from the statement made emphasis seems to be on thermal energy. It was unclear what the PP was trying to get across and how it related to small-scale hydro electric plants.

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To close out CAR 10, the revised documentation was verified (ref. 1, 27, 29-31) by the assessment team and from the information supplied by the Client in the PDD (version 5) (ref. 1) section B.5. was assessed as follows:

a) Review of Generator Purchase Contract, dated 4th January 2006 confirms correct date (ref. 29).

The equipment purchase contract submitted by the PP (ref. 29) between Flessak Electo Industrial Ltda, and Centrais Electricas Technovolts S/A, for the purchase of two Trifasico Aberto generators. The document was signed by both parties (Edson Carlson Flessak and Oreste de Bortoli Fattia). As per the requirements set out in CDM_GLOS04 (EB41, para 67).

“.

b) Review of the revised PDD along with additional information supplied in References_Annex 6 PDD ARS.zip (ref. 27) confirms statements made in the original PDD (version 4) (ref. 1).

The meeting of partner notes (ref. 30) dated 10th September 2001, submitted by the PP stated that:

“the company shall have the social objective of implementing and operating hydro, thermal and wind-based electric energy generation units, after authorized by the relevant public power, including activities for development of applications and projects; construction and operation of hydro, thermal and wind-based electric energy generation units in the whole Brazilian territory. The company shall also participate in the Carbon Credit Project under the Clean Development Mechanism.”

c) Review of the revised PDD (ref. 5) provides better understand the prevailing practice analysis, providing more evidence and also adding more explanation which shows that the project activity would not have occurred anyway due to the barriers presented (ref. 19, 28).

The additionality documentation (ref. 28) submitted by the PP contain letters from Tecnovolt to numerous financial entities trying to obtain financial funding. These letters include:

- Technovolt to BNDES, dated 25th August 2004
- BNDES to Technovolt, dated 11th October 2005
- Technovolt to CAIXA, dated 9th February 2005
- CAIXA to Technovolt, dated 8th May 2007

- UBF Garantias and Seguros S.A., dated 18th March 2008

d) Review of the revised PDD (ref. 5) provides better understand the prevailing practice analysis, providing more evidence and also adding more explanation which shows that the project activity would not have occurred anyway due to the barriers presented (ref. 19, 28).

A more detailed analysis was included incorporated small scale projects in Brazil and a specific focus on the state of Mato Grosso where the proposed project activity is being implemented (see CAR #10 for more details).

e) Footnote 6 and the paragraph for which referred to a conference held in Rio in 2005. was excluded. Assessment team confirmed exclusion from the revised PDD (ref. 1).

CL #10 closed out (see Annex A.3 for more details).

Information supplied in the PDD (version 5) (ref. 1) section B.5. determined the discussion on additionality (ref. 31) and the evidence provided (ref. 29-31) was consistent with the starting date of the project and the guidance of Attachment A to Appendix B (ref. 7).

The registration of the proposed project activity will help ARS SHP to improve its economic performance and it was an incentive for its implementation. It also may have a strong impact in prepare others facilities the implementation of similar projects in Brazil.

4.7.2 Prior Consideration of the Clean Development Mechanism

The meeting of partner notes (ref. 30) dated 10th September 2001, submitted by the PP stated that:

"the company shall have the social objective of implementing and operating hydro, thermal and wind-based electric energy generation units, after authorized by the relevant public power, including activities for development of applications and projects; construction and operation of hydro, thermal and wind-based electric energy generation units in the whole Brazilian territory. The company shall also participate in the Carbon Credit Project under the Clean Development Mechanism."

As per the requirements set out in EB41, Annex 46 (ref. 11):

"Proposed project activities with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are required to demonstrate that the CDM was seriously considered in the decision to implement the project activity… Evidence to support this would include, inter alia, minutes and/or notes related to the consideration of the decision by the Board of Directors..."

The meeting notes (ref. 30) submitted by the PP meet the requirement set out in CDM Consideration (EB41, Annex 46) (ref. 11) and found satisfactory.

In 2001, the PP looked for resources to implement the proposed project activity. On the 10th September 2001, the project owners had a meeting to discuss the implementation of the ARS plant and how the obtain the resources for its implementation.

Mr Flessak (project owner) mentioned that he had heard about the incentives from Carbon Credits through his friend that works at PriceWaterHouseCoopers (PWC) (information obtained by interview on 5th May 2009).

On 28th May 2002, ANEEL issued the authorization to explore the ARS plant (ref. 27). As the PP did not have the cash to start the implementation of the project, a new chronogram of implementation was requested to ANEEL on 27th May 2003 (ref. 27). While the PP was looking for the consultant to develop their PDD, at the same time the PP requested the environmental license on 29th December 2003 (ref. 27) and financing from the banks on 25th August 2004 (BNDES) (ref. 27), 30th October 2004 (Banco do Brasil) (ref. 27) and 9th February 2005 (Caixa Econômica Federal) (ref. 27) among others actions to obtain the financing.

On 4th January 2006 the generator was bought (ref. 29) with no guarantees that the financing would be approved, the PP decided to take a risk to buy that equipment. From March 2006 the PP and MGM consultant started evaluation of the project activity (ref. 27). Confident that the carbon credits could help the implementation of the project activity, the PP acquired the turbine on the 27th July 2006 (ref. 27). From then many actions were taken to proceed with the project activity conform described in the table below.

CL #8 was raised because information in the PDD (version 4) (ref. 1) made reference to an installation license, (397/2003), dated 27th July 2006 being the start date of CDM consideration of the PA. However in section C.1.1. reference was made to a purchase agreement signed on the 27th July 2006 as being the start date of the PA. The PP was requested to clarify the two statements along with providing evidence to the actual start date of the project. To close out **CL #8** the PP submitted a revised PDD (version 5) (ref. 1) and also stated that the starting date was changed by the earliest date at which real action of the project activity begins. The date corresponds to the Generators Purchase Contract, dated 4th January 2006 (ref. 29) and was updated in section B.5, C.1.1 and Annex 6. The revised documentation was verified (ref. 1, 29) by the assessment team and from the information supplied in the PDD (version 5) (ref. 1) the start date of the proposed project activity has been amended verified to meet the requirements as per CDM_GLOS04.

CL #8 was closed out (see Annex 3, CL #8 for more details)

CAR #11 was raised because evidence relating to the start date of the PA supplied in the PDD (version 4) (ref. 1) was unclear. Annex 6 of the PDD (version 4) (ref. 1) states that the bank loan contract was signed on 18th June 2007. However from the UNFCCC website the project is currently on its third international stakeholders consultation (ISHC) (ref. 1). The PP was requested to supply a complete up-to-date chronogram that showed the steps taken by the PA to actively pursue CDM.

To close out **CAR #11** the PP submitted a revised PDD (version 5) (ref. 1) completing the Timeline (Annex 6 of the PDD) with more information about what happened between 2007 and 2009 to include information regarding first ISHC, stakeholders consultation process, validation visits, methodology expiration, new EB rules, etc.

The revised documentation was verified (ref. 1, 27) by the assessment team during the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 and electronic copies were supplied by the PP in response to **CAR #11**.

CAR #11 closed out (see Annex A.3 for more details).

To assess the project with regards CDM Consideration as per the requirements of EB41, Annex 46 (ref. 29) the assessment team verified the following documentation (ref. 27) shown and commented on in the below table.

CDM Consideration Chronogram

Document	Date	Event
Minutes of the Partners Meeting (ref. 27a)	10 September 2001	Internal Meeting
Comment: A partners meeting was held on the 10th September 2001. The meeting decided the involvement of the company (Tecnovolt Centrais Elétricas S.A.) in participate in the Carbon Credit Project under the Clean Development Mechanism.		
ANEEL Resolution (ref. 27b)	28 May 2002	Resolution n° 284 from ANEEL
Cmment: ANEEL Resolution #284 I authorising Tecnovolt Centrais Elétricas S.A. to explore the proposed project activity.		
Request to ANEEL (ref. 27c)	27 May 2003	Chronogram Approval Request
Comment: A chronogram of the implementation of the proposed project activity was sent to ANEEL requesting approval.		
Installation License (ref. 27d)	29 December 2003	Installation License
Comment: FEMA (local environmental agency) approves Installation License (397/2003) valid until 29 October 2004.		
Financing Request (ref. 27e)	25 August 2004	BNDES
Comment: A letter was sent to BNDES (bank) requesting finance for the proposed project activity.		
Financing Request (ref. 27f)	30 October 2004	Banco do Brasil
Comment: A letter was sent to Banco do Brasil (bank) requesting finance for the proposed project activity.		
ANEEL Dispatch (ref. 27g)	16 November 2004	ANEEL Dispatch #911
Comment: ANEEL Dispatch #911 received approving the basic engineering the proposed project.		
Financing Request (ref. 27h)	09 February 2005	Caixa Economica Federal
Comment: A letter was sent to Caixa Economica Federal (bank) requesting finance for the proposed project activity. More than two years passed until receive the approval of this request (see Reference 19).		
Installation License (ref. 27i)	02 March 2005	Installation License
Comment: New installation licence issued by FEMA (154/2005 valid until 02 March 2007). The license was extended due to delays in obtaining financing and consequently in the project construction.		
Financing request (ref. e)	11 October 2005	Response to financing request
Comment: Letter received from BNDES (bank) stating that the project was qualified into the financing program to receive a loan; however the financing was not carried out with BNDES.		
Equipment purchase contract (ref. 27k)	4th January 2006	Starting date (CDM_GLOS04)
Comment: **Start Date.** Equipment purchase contract for two generators signed 15th February 2006.		
Contact with MGM International (ref. 27l)	11 March 2006	Contact with MGM
Comment: Email communication between Project sponsor and MGM regarding an evaluation of the proposed project activity under the CDM.		

PDD development information (ref. 27m)	29 June 2006	PDD development
Comment: Email communication between MGM and external consultant to evaluate and start the PDD development.		
Equipment purchase contract (ref. 27n)	27 July 2006	Turbines purchase
Comment: Turbines Purchase Contract signed: equipment for project implementation.		
CDM Project Development Agreement (ref. 27o)	26 September 2006	CDM Project Development agreement
Comment: CDM project development agreement was signed between MGM International and Tecnovolt Centrais Elétricas S.A.		
Invitation Letter - Municipality acknowledgment receipt (ref. 27p)	January 2007	First Local Stakeholders Consultation Process
Comment: The first consultation process was held in accordance to the rules established in the Resolution #1 issued by CIMGC (the Brazilian DNA).		
PDD sent to SGS (ref. 27q)	12 April 2007	PDD sent for validation
Comemt: The PDD was sent to the DOE (SGS) in order to start the validation process.		
PDD on UNFCCC web site (ref. r)	18 April 2007	First ISHC
Comment: PDD applying the methodology AMS ID, version 10, was made available on UNFCCC web site http://cdm.unfccc.int/Projects/Validation/DB/VBSEM1SUFCWJTS5SB5ACJQFO9Q56QH/view.html – Checked 28th May 2009		
Approval of Financing (ref. 27s)	08 May 2007	Approval of Financing
Comment: Letter sent by Caixa Econômica Federal approving the financing for the project development.		
Bank Loan contract (ref. 27t)	18 June 2007	Bank loan contract
Comment: Contract between Caixa Economica Federal and Tecnovolt Centrais Elétricas S.A., signed to obtain the loan used for the project activity.		
First validation visit (ref. 27u)	22 and 23 July 2007	First Validation Visit
Comment: First validation visit on site was carried out by SGS team.		
Validation Report (ref. 27v)	12 September 2007	Validation Report
Comment: Validation report sent to the Brazilian DNA to start the National Approval Process to obtain the host country Letter of Approval (LoA).		
National Approval Process (ref. 27w)	02 August 2007	Project submitted to DNA for approval
Comment: Presentation of project activity to start the National Approval Process for requesting the host country Letter of Approval. (http://www.mct.gov.br/index.php/content/view/68007.html) – Checked 28th May 2009		
PDD on UNFCCC web site (ref. 27x)	13 December 2007	Second ISHC
Comment: PDD updated according to methodology AMS ID, version 12, was made available again on UNFCCC web site http://cdm.unfccc.int/Projects/Validation/DB/B4ZHHVDNVPLXYZ5M2PIBXL57V6FDTH/view.html – Checked 28th May 2009		
Request sent to ANEEL (ref. 27w)	06 March 2008	Chronogram Approval Request
Comment: An updated chronogram of the implementation of the proposed project activity was sent to ANEEL requesting approval.		
Installation License (ref. 27y)	16 May 2008	Installation License
Comment: FEMA approved the issuance of a new Installation License number 1096/2007 with validity until 28 February 2010.		
Letter of Approval (ref. 27aa)	04 July 2008	Letter of Approval issuance
Comment: The Brazilian DNA issued the host country Letter of Approval for the project activity.		
EB41 (ref. 11)	02 August 2008	EB41, Annex 46
Comment: The EB published guidance (EB 41, Annex 46) on the demonstration and assessment of prior CDM consideration. The project had not been requested for registration and had to be reviewed by the DOE according to EB41, Annex 46.		
ANEEL resolution (ref. 27y)	05 August 2008	Resolution #1490 from ANEEL
Comment: ANEEL Resolution #1490 received authorising Tecnovolt Centrais Elétricas S.A. to use the necessary land to implement the transmissions lines.		
Validation Process Review	November 2008	Internal discussion – Start of new Validation Process
Comment: As a consequence of EB 41, Annex 46 and EB44 Annex 3, both published by the EB, after several discussions between MGM and SGS, it was decided that a new validation process should be performed.		
New Validation Process	Dec. 2008 – Feb. 2009	DOE hiring
In December, 2008 the process to hire a DOE for a new validation was started. The final agreement was signed on February 26, 2009.		
Invitation Letter – Municipality acknowledgment receipt	January 2009	Second Local Stakeholders Consultation Process
Comment: In Brazil, the DNA establishes that the Validation Process should start fifteen days after the start of the Local Stakeholders Consultation Process. Thus, a new consultation process was done following the new rules established in the Resolution #7 issued by CIMGC (the Brazilian DNA).		
PDD sent to SGS	17 February 2009	PDD sent to SGS to start the new validation process
Comment: MGM sent PDD to SGS in order to start the new validation process. A second consultation process was done following the new rules established in the Resolution #7.		
PDD on UNFCCC web site	28 February 2009	Third ISHC
Comment: PDD updated to the □órum□ology AMS ID version 13, was made available on UNFCCC web site http://cdm.unfccc.int/Projects/Validation/DB/PSBA39LNEKK8EGB6HKGOAU105W5LBU/view.html – Checked 28th May 2009		
Validation Visit	17 March 2009	Validation Visit (Part 1)
Comment: Validation visit on site was carried out by SGS team.		
Validation Visit	05 May 2009	Validation Visit (Part 2)
Comment: SGS team confirms data and information provided in the Project Design Document.		

The assessment team verified that the timeline presented all stages taken to implement the project activity. Without incentives from CDM the project activity might not be implemented and the stages faced in the timeline could not have occurred. The information provided confirms that action relating to CDM consideration was taken before the project start date (ref. 29). The project was developed after CDM Consideration after numerous attempts to obtain financial backing (ref. 31). In conclusion the proposed project activity complies with the requirements of EB41 Annex 46 (ref. 11).

4.7.3 Identification of Alternatives (if applicable)

From the information supplied in the PDD (version 4) (ref. 1) identification of alternatives is not applicable as proposed project activity complies with the guidance of Attachment A to Appendix B (ref. 7).

4.7.4 Investment Analysis

From the information supplied in the PDD (version 4) an investment analysis has not been used to demonstrate additionality.

4.7.5 Barrier Analysis

From the information supplied in the PDD (version 4) (ref. 1) section B.5. the project activity (PA) followings the guidance of Attachment A to Appendix B (ref. 7).

Small scale project does not require "Tool for the demonstration and assessment of additionality".

4.7.6 Common Practice Analysis

Small scale project does not requires "Tool for the demonstration and assessment of additionality".

4.8 Application of Baseline Methodology and Calculation of Emission Factors

4.8.1 Baseline Emission

CAR #7 was raised because information provided in the PDD (version 4) (ref. 1) section B.4. although steps for following the baseline and its development were as per the selected methodology AMS – ID v. 13 (ref. 4). EB34, Annex 9 (ref. 10) requires that all assumptions made are clearly explained and justified in a transparent manner. Reference was made to Tecnovolt Centrais Eletricas S.A. and a value of 45,798MWh/yr. However there was no clear explanation or justification to why the figure selected was used.

To close out **CAR #7** the PP submitted a revised PDD (version 5) (ref. 1). Information regarding the electricity generation was provided in section B.6.3, where there is a table that shows how the energy generated by the project is calculated. A footnote was inserted in order to facilitate the visualisation of the information in PDD (ref. 1).

The installed capacity and assured energy are described in the section A.4.2, as the factor capacity is described at the section B.6.3.

Installed Capacity	6.66 MW	Assured Energy	5.23 MW

(Source: Adapted from Aneel Dispatch No. 911, dated 15th February 2006)

Assured Energy is the energy delivered to the grid, a quantity stated by ANEEL and defined in Power Purchase Agreements (PPA).

The revised documentation was verified (ref. 5, 16) by the assessment team from the information supplied in the PDD (version 5) (ref. 1) section B.4. clearly meets the requirements set out in EB34, Annex 9 (ref. 10).

CAR #7 close out (see Annex A.3 for more details).

From the information supplied in the PDD (version 4) (ref. 1) the approved methodology has been applied and calculated correctly using official figures from the Ministry of Science and Technology for Brazil (ref. 21-22).

From the approved methodology (ref. 4) para. 9 states:

"For all other systems, the baseline is the kWh produced by the renewable generating unit multiplied by an emission coefficient (measured in kg CO2e/kWh) calculated in a transparent and conservative manner as:

(a) A combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) according to the procedures prescribed in the 'Tool to calculate the emission factor for an electricity system'.

Calculations must be based on data from an official source (where available) and made publicly available. "

The tool (ref. 8) provides the procedures to determine the following parameters:

Parameters	SI Unit	Description
$EF_{grid,CM,y}$	tCO_2/MWh	Combined margin CO_2 emission factor for grid connected power generation in year y
$EF_{grid,BM,y}$	tCO_2/MWh	Build margin CO_2 emission factor for grid connected power generation in year y
$EF_{grid,OM,y}$	tCO_2/MWh	Operating margin CO_2 emission factor for grid connected power generation in year y

(Source: AM_Tool_07, dated 29th July 2008)

In Brazil the $EF_{grid,OM,y}$ and $EF_{grid,BM,y}$ are calculated by the Ministry of Science and Technology (MCT) (ref. 21-22).

Build Margin
Mean Emission Factor (tCO_2/MWh) - **Annual 2007**
0,0775

Operation Margin											
Mean Emission Factor (tCO_2/MWh) - **Monthly 2007**											
Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
0,2292	0,1954	0,1948	0,1965	0,1606	0,2559	0,3096	0,3240	0,3550	0,3774	0,4059	0,4865

$EF_{grid,BM,y}$ = 0,0775 $EF_{grid,OM,y}$ = 0,2909

(Source: Adapted from MCT (ref. 22))

4.8.2 Project Emissions

From the information supplied in the PDD (version 4) (ref. 1) section B.6.1. according to AMS – ID v. 13 (ref. 4) does not consider emissions from the project emissions. Project emissions are there for considered zero.

4.8.3 Leakage

From the information supplied in the PDD (version 4) (ref. 4) the methodology states that leakage is considered as zero if equipment used in the project is new. During the site visit conducted 16th – 18th March and 4th – 7th May 2009 the assessment team confirmed that the equipment used in the construct on the proposed project activity was new (ref. 24) and hence leakage is considered as zero.

4.8.4 Direct Calculation of Emission Reductions

CAR #12 was raised because information in the PDD (version 4) (ref. 1) was unclear as to the origin of the equation used to calculate emission reductions. The equation used to calculate emission reductions did not come from the approved methodology AMS – ID, v. 13 (ref. 4) or follow the guidelines set out by EB34, Annex 9 (ref. 12). All equations used should be transparent providing clarification and justification on how the equation came about and why it is being used.

To close out **CAR #12** the PP submitted a revised PDD (version 5) (ref. 1) section B.6.3 and B.6.1. stating that equations in were numbered, completed and replaced by equations according to AMS – ID, v. 13 (ref. 4) and Leakage emissions, project emissions, baseline emissions and emission reductions were clarified in accordance with EB34, Annex 9 (ref. 10).

The revised documentation was verified (ref. 1) by the assessment team and found to be in compliance with the requirements of EB34, Annex 9 (ref. 10).

Emission Reductions:

$ER_y = BE_y - PE_y - LE_y$

$PE_y = 0$ (according to approved methodology (ref. 4)

$LE_y = 0$ (according to approved methodology (ref. 4) and equipment purchase (ref. 29))

Thus:

$$ER_y = BE_y$$

$$BE_y = EG_y \times EF_{grid,CM\ y}$$

$$ER_y = EG_y \times EF_{grid,CM\ y}$$

CAR #12 closed out (see Annex A.3 for more details).

From the information supplied in the PDD (version 4) (ref. 1) section B.6.1. where there is an option between different equations or parameters in the methodology, the justifications for the use of those specific choices have been clearly justified. The information supplied in the PDD (version 5) (ref. 1) section B.6.1. where there is an option between different equations or parameters, the methodological choices for the project have been explained, properly justified and correct.

The uncertainties in the GHG emissions estimates were unclear if they had been properly addressed in the PDD (version 4) (ref. 1) assumptions made in relation to the plant capacity (6.66MW) and the capacity factor (0.785) have not been justified. During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 documentation was supplied to demonstrate the plant capacity and capacity factor (ref. 14).

Installed Capacity	6.66 MW	Assured Energy	5.23 MW
Capacity Factor		= Assured Energy/Installed Capacity	
Capacity Factor		= 5.23 / 6.66	
Capacity Factor		= 0.785	

(Source: Adapted from ANEEL Dispatch No. 911, dated 15th February 2006 (ref. 14))

4.8.5 Ex-ante Data and Parameters Used

From the information supplied in the PDD (version 4) (ref. 1) section B.6.3./4. all ex-ante parameters mentioned are in compliance with AMS – ID v. 13 (ref. 4). All data stated is derived from official sources. MCT (ref. 21-22).

The information supplied in the PDD (version 4) (ref. 1) section B.6.3./4. it is unclear if all data supplied has been correctly applied. During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 documentation was supplied to demonstrate the datas appropriateness and correctness to the proposed project activity (ref. 35). The information supplied in the PDD (version 5) (ref. 1) and with the closure of **CL #5** and **CAR #11** (Annex A.1) all data provided is appropriate and has been correctly applied to the proposed project activity.

From the information supplied in the PDD (version 5) (ref. 1) all data and parameters that are not being monitored and remained fixed throughout the crediting period are appropriately assessed, correct, and will result in conservative estimates.

4.8.6 Calculation of Emission Reductions

From the information supplied in the PDD (version 4) (ref. 1) was unclear if the approved methodology has been applied to determine correct ER. During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 an ER calculation spreadsheet (ref. 35) was supplied. The spreadsheet (ref. 14) was reviewed by the assessment team and the Client was advised of a few corrections to be made to the transparency of the

spreadsheet. The information supplied by the Client in the PDD (version 5) (ref. 1) section B.6.3./4. and the closure of **CL #5** and **CAR #11** has correctly applied the approved methodology to determining emission reductions.

Emission Reductions

$$ER_y = BE_y$$

$$ER_y = EG_y \times EF_{grid,CM,y}$$

EG_y = Plant Capacity * Operating Hours * Capacity Factor

EG_y = 6.66 * 8760 * (523/6.66)

EG_y = 58341.6 * 0.785

EG_y = 45,815 (see Annex A.1 for more details)

$EF_{grid,\ CM,\ 2007} = W_{OM} * EF_{grid,OM,2007} + W_{BM} * EF_{grid,CM,2007}$

$EF_{grid,\ CM,\ 2007}$ = (0.5 * 0.2909) + (0.5 * 0.0775)

$EF_{grid,\ CM,2007}$ = 0.1454 + 0.0387

$EF_{grid,\ CM,2007}$ = 0.1842 (see ref. 21-22, 35 for more details)

ER_y = Egy * $EF_{grid,\ CM,2007}$

ER_y = 45,815 * 0.1842

ER_y = 8,439 tCO2e/MWh(see ref. 35 for more details)

From the information supplied in the PDD (version 4) (ref. 1) the projection of ER is based on the same procedure for calculating ER (ref. 35).

From the information supplied in the PDD (version 4) (ref. 1) was not possible to determine if the calculations for ER's is correct. The information supplied in the PDD (version 5) (ref. 1) section A.4.3. and B.6.4. have been correctly applied and conform to EB34, Annex 9 (ref. 10).

The ER spreadsheet (ref. 35) was cross-checked with the PDD (ref. 1), MCT (ref. 21-22) and other relevant information obtained from the site visit, conducted on the 16th – 18th March and 4th – 7th May 2009 and found to be correct and inline with AMS – ID v. 13 (ref. 4).

From the information supplied in the PDD (version 4) (ref. 1) section B.6.4. the projection of the proposed project activity and Ers are considered inline with the indicated crediting period mentioned in section C of the PDD (version 4) (ref. 1).

4.8.7 Baseline Details

From the information supplied in the PDD (version 4) (ref. 1) section B.8. the baseline was determined 01/12/2005 and revised 12/12/2008. The determination of the baseline is consistent with the PDD history.

- Baseline Determination: 12th December 2008
- PDD version 4: 17th February 2009

Following the revised PDD (version 5) (ref. 1) section B.8. contains the following information:

- Baseline Determination: 22nd May 2009
- PDD version 5: 22nd May 2009

From the information supplied in the PDD (version 4) (ref. 1) all information provided in Annex 3 is considered consistent with AMS – ID v. 13 (ref. 4) and complete.

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4.9 Application of Monitoring Methodology and Monitoring Plan

From the information supplied in the PDD (version 4) (ref. 1) the monitoring methodology is consistent with the monitoring methodology set out in AMS – ID v. 13 (ref. 4).

CAR #13 was raised because information supplied in PDD (version 4) (ref. 1) section B.7.2. was unclear. No information was mentioned with regards checking the EF from the MCT (ref. 21-22). Efgrid,CM,y is the

parameter mentioned that will be monitored. The parameter states that the required information will be derived from the MCT. But it is unclear how the PP will be notified that the EF has been changed by the MCT, how often will this be checked and how will the amended figure be implemented.

To close out **CAR #13** the PP submitted a revised PDD (version 5) (ref. 1) section B.6.2. information was included at (*Data and parameters that are available at validation)* and B.7.1 *(Data and parameters monitored)*, regarding $EF_{grid,CM,y}$, "*This value is yearly updated according to MCT calculations for the Brazilian electric system*".

The revised documentation was verified (ref. 1, 21-22) by the assessment team and found to be satisfactory.

CAR #13 closed out (see Annex A.3 for more details).

4.9.1 Data and Parameters to be Monitored

From the information supplied in the PDD (version 4) (ref. 1) and in the approved methodology (ref. 6) the source of all generated energy delivered to the grid is hydroelectric and the emission reduction is a result of the energy delivered to the grid * emission factor.

- EG_y (Electricity generated in year) = the sources will be generated and monitored by Tecnovolt Centrais Elétricas S.A. The energy generation will be monitored by the calibrated energy meters.
- $EF_{grid,\ CM,y}$ (Emission Factor for the Brazilian interconnected grid): source obtained from Brazilian DNA. The data is determined as ex-post.

From the information supplied in the PDD (version 4) (ref. 1) section B.7.1. the choices of project GHG indicators are deemed reasonable and in conformance with the requirements set by the approved methodology (ref. 4) applied.

The monitored data is possible to determine the GHG emission reductions. The following parameters will be monitored:

- Egy = Electricity generated by the renewable technology in year y MWh): this data will be obtained by calibrated meters. The electricity generated will be controlled by the buyer and seller (PP). During verification the energy information will be checked through invoices.
- *Efgrid,CM,y* = Grid Emission factor .(tCO_2/MWh): this data will defined as ex-post. This data will be calculated by Brazilian DNA (MCT and ONS).

From the information supplied by the Client in the PDD (version 4) (ref. 1) all information given regarding the monitoring variables is sufficient to deliver high quality data, free from biases.

- Egy (MWh) – the data will be generated by calibrated meters. The energy meters will calibrate every 2 years (ref. 21-22).
- *Efgrid,CM,y (*tCO_2/MWh) – the data will come from the official source. The Brazilian DNA (MCT/ONS) will issue this data every year.

From the information supplied by the Client in the PDD (version 4) (ref. 1) it is unclear as to whether the current monitoring approach is inline with current good practice. Mention is made in Section 7.2. about internal procedures being written before the first crediting period covering essential items regarding training, QA, archiving and so on.

Annex 4 to the PDD (ref. 1) makes brief reference to an electronic spreadsheet that will be used to collate and calculate necessary data, along with information regarding electronic data handling (ref. 37).

From the information supplied in the PDD (version 4) (ref. 1) section B.6.1. all formulae used to determine project emission are clearly indicated and in compliance with the monitoring methodology.

4.9.2 Quality Control (QC) and Quality Assurance (QA) Procedures

From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.7.2. the emission factor for the grid will be calculated by MCT an official source (ref. 21-22). The QA/QC for this data is high.

The energy meters will be calibrated in accordance with Brazilian Standard (ONS – Operador Nacional do Sistema Elétrico) (ref. 36). The QA/QC for this data is expected to be low.

FAR #17 – At validation site visit the energy meters was not installed yet. During verification the follow information should be confirmed by assessment team:

- Serial numbers of energy meters
- Calibration certificate
- Periodicity of calibration

4.9.3 Operational and Management Structure

CAR #14 was raised because information in section B.7.2 of the PDD (version 4) (ref. 1) contained no information regarding authority, responsible person for project management, registration, monitoring etc. As per the guidelines set out in EB34, Annex 9 (ref. 10) the section requires a detailed description of monitoring plan, clearly describing responsibilities.

To close out **CAR #14** the PP submitted a revised PDD (version 5) (ref. 1) section B.7.2. including information regarding monitoring procedures, monitoring plan, operational and management structure to be implemented, etc. All procedures will be according to the Descriptive Memorial of the supervisory monitoring system and according with ONS (National Dispatch Centre).
The Descriptive Memorial (ref. 20) and Submodulo 12.1 from ONS – Operador Nacional do Sistema Elétrico (ref.21) states the calibration of energy meters will be carried out every 2 years.
Regarding responsible for project manager, monitoring etc, the PDD, version 5 stated the complete information, however it was not implemented yet, due to the project activity is under construction.

FAR#18 – Following information should be implemented before crediting period:

- Internal auditing
- Training
- Responsibilities for MR
- Achieving time
- Monitoring all parameter required
- Internal procedures (training, calibration, auditing, maintenance, working instructions, etc).

CAR #15 was raised because information in section B.7.2 of the PDD (version 4) (ref. 1) stated that metering would be calibrated every three years. However there is a Brazilian requirement (ONS –submódulo 12.3) (ref. 36) that establishes the periodicity of calibration every 2 years. The PP was requested to make the necessary changes in compliance with the ONS requirement.

To close out **CAR #15** the PP submitted a revised PDD (version 5) (ref. 1) section B.7.2. correcting the typing error in frequency calibration).

The revised documentation (ref. 1) was verified by the assessment team and found to be corrects and satisfactory.

CAR #15 was closed out (see Annex A.3 for more details).

4.10 Duration of Crediting Period

From the information supplied in the PDD (version 4) (ref. 1) section C.1.1./2. clearly defines the start date and operation lifetime as follows:

- Start Date: 9th August 2005
- Operational Lifetime: 25 years.

During the validation process **CL #8** was raised due to the above stated start date not meeting the requirements set out in CDM_GLOS04. Following the closure of **CL #8** the revised PDD (version 5) (ref. 5) defines the start date and operation lifetime as follows:

- Start Date: 4th January 2006
- Operational Lifetime: 25 years.

From the information supplied in the PDD (version 4) (ref. 1) section C.2. states the following:

- 1st July 2009 (or on the date of registration of the CDM project activity, whichever is later

The projects operational lifetime does exceed the crediting period. The information supplied in the PDD (version 4) (ref. 1) section C.1./2. the projects operational life time is stated as 25 years. The crediting period is stated as 7 years with a possible 2 additional renewals (7*3=21yrs).

4.11 Environmental Impacts

From the information supplied in the PDD (version 4) (ref. 1) section D.1. states that a series of permits are required from the respective environmental agencies.

- Preliminary Environmental License (LAP);
- Environmental Construction License (LAI) and
- Environmental Operation License (LAO).

During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 the necessary documents pertaining to the environmental were verified (ref. 16, Annex A.1) by the assessment team and found to be correct.

From the information supplied in the PDD (version 4) (ref. 1) section D.1. the analysis of the environmental impact for the proposed project activity as been sufficiently described.

The analysis of the environmental impact for the proposed project activity has been undertaken and the proposed project activity has obtained (Environmental Operation License) LAO no. 297328/2009 (cert. 022834), dated 30th April 2009 (ref. 16, Annex A.1).

The project will not create any adverse environmental effects as the proposed project activity is a run-of-river hydropower plant, the dam is intended to store water in order to generate electricity for short periods of time. The water accumulation due to the small barrier forms a small reservoir. Therefore, the environmental impact is very small compared to other types of power generation alternatives.

4.12 Local Stakeholder Comments

The letters were sent to the following local stakeholders:

- Municipality (Nova Ubiratã) – 27th January 2009
- Alderman Chamber (Nova Ubiratã) – 27th January 2009
- Municipal Environmental Agency (Nova Ubiratã) – 27th January 2009
- State Environmental Agency: SEMA/MT – Secretaria de Estado do Meio Ambiente – 27th January 2009
- State Environmental Agency: FEMA/MT – Secretaria de Estado do Meio Ambiente – 27th January 2009.
- Brazilian □órum of NGOs – □órum Brasileiro de ONGs e Movimentos Sociais para o Meio Ambiente e Desenvolvimento (FBOMS) – 27th January 2009
- Community Association (Nova Ubiratã) – 27th January 2009
- Public Ministry (Nova Ubiratã) – 27th January 2009
- Federal Ministry – 6th May 2009.

The invitation covered the DNA requirements. **CAR #16** was raised because information in section E.1. of the PDD (version 4) (ref. 1) stated that local stakeholder consultation had been conducted in compliance with Brazilian DNA Resolution No. 1. However upon checking the Brazilian DNA website (25th February 2009) the most recent applicable resolution from Brazilian DNA was Resolution No. 7 dated, 5th March 2008. The PP was requested to comply with this resolution and make the necessary changes.

During the site visit conducted by 5th May 2009 while reviewing the Letters of invitation and Ars, the following documents were found to be missing:

- Missing AR – Municipal Environmental Agency (NovaUbiratã)
- Missing FEMA letter of invitation and AR.
- Missing Federal letter of invitation and AR

To close out **CAR #16** the PP submitted a revised PDD (version 5) (ref. 1) section E.1. including information regarding local stakeholders consultation process, as per resolution 1 and the most recent resolution 7 of the Brazilian DNA, was included in the PDD.

- AR – Municipal Environmental Agency (NovaUbiratã) – 27th January 2009.
- AR – FEMA – letter sent on 27th January 2009.
- AR – Federal Public Ministry – letter sent on 6th May 2009.

CAR #16 closed out (see Annex A.3 for more details).

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5. 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.

5.1 Description of How and When the PDD was Made Publicly Available

The PDD for this project was made available on the SGS website as follows:

First ISHC

- Website: http://cdm.unfccc.int/Projects/Validation/DB/VBSEM1SUFCWJTS5SB5ACJQFO9Q56QH/view.html – Checked 25th February 2008
- Period: 18th April 2007 to 17th May 2007
- Comments Received: 0

Second ISHC

- Website: http://cdm.unfccc.int/Projects/Validation/DB/B4ZHHVDNVPLXYZ5M2PIBXL57V6FDTH/view.html – Checked 25th February 2008
- Period: 13th December 2007 to 11th January 2008
- Comments Received: 0

Third ISHC

- Website: http://cdm.unfccc.int/Projects/Validation/DB/PSBA39LNEKK8EGB6HKGOAU105W5LBU/view.html – Checked 30th March 2009
- Period: 28th February 2009 to 29th March 2009.
- Comments Received: 0

Comments were invited through the UNFCCC CDM homepage

5.2 Compilation of all Comments Received

No comments were received for any of the ISHC undertaken by the project.

5.3 Explanation of How Comments Have Been Taken into Account

No comments were received for any of the ISHC undertaken by the project.

6. List of Persons Interviewed

Date	Name	Position	Short Description of Subject Discussed
17/03/2009	Ivo Beuter	Manager – ARS small hydroplant	Owner
17/03/2009	Rocio Rodrigues	Consultant – MGM	Project developer
17/03/2009	Fernando Alarcon	Consultant – MGM	Project developer
05/05/2009	Rocio Rodrigues	Consultant – MGM	Project developer
05/05/2009	Fernando Alarcon	Consultant – MGM	Project developer
05/05/2009	Edson Flessak	Manager – Flessak	Flessak

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 PDD, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

ID	Description	Title	Version	Date	Format
1.	PDD	ARS Small Hydroelectric Power Plant	1	9th March 2007	First ISHC
Weblink: http://cdm.unfccc.int/Projects/Validation/DB/VBSEM1SUFCWJTS5SB5ACJQFO9Q56QH/view.html – Checked 25th February 2009					
b	PDD	ARS Small Hydroelectric Power Plant	2	5th August 2007	
c	PDD	ARS Small Hydroelectric Power Plant	3	11th December 2007	Second ISHC
Weblink: http://cdm.unfccc.int/Projects/Validation/DB/B4ZHHVDNVPLXYZ5M2PIBXL57V6FDTH/view.html – Checked 25th February 2009					
d	PDD	ARS Small Hydroelectric Power Plant	4	17th February 2009	Third ISHC
Weblink: http://cdm.unfccc.int/Projects/Validation/DB/PSBA39LNEKK8EGB6HKGOAU105W5LBU/view.html – Checked 28th February 2009					
e	PDD	ARS Small Hydroelectric Power Plant	5	22nd May 2009	.pdf
2.	LoA	Letter of Approval – Brazil	n.v.	18th August 2009	.pdf
3.	MoC	Modalities of Communications	n.v.	21st August 2009	.pdf

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):

ID	Description	Title	Version	Date	Format
4.	AMS I D	Grid Connected Electricity Generation	13	14th December 2007	pdf
Weblink: http://cdm.unfccc.int/UserManagement/FileStorage/CDMWF_AM_PHPV5WESACMBTJ2YY54GAJYSIEI3HD – Checked 25th February 2009					
5.	Attachment A to Appendix B	Information on Additionality	6	30th September 2005	.pdf
Weblink: http://cdm.unfccc.int/methodologies/SSCmethodologies/AppB_SSC_AttachmentA.pdf – Checked 25th February 2009.					
6.	Attachment B to Appendix B	Acronyms, Abbreviations and Units of Measure	6	30th September 2005	.pdf
Weblink: http://cdm.unfccc.int/methodologies/SSCmethodologies/AppB_SSC_Attachments_acronyms.pdf – Checked 25th February 2009					
7.	EB36, Annex 27	Compendium of guidance on the debundling for SSC project activities.	2	30th November 2007	.pdf
Weblink: http://cdm.unfccc.int/EB/036/eb36_repan27.pdf – Checked 25th February 2009					

ID	Description	Title	Version	Date	Format
8.	EB35, Annex 12	AM_Tool_07	1.1	29th July 2008	.pdf
Weblink: http://cdm.unfccc.int/methodologies/Pamethodologies/tools/am-tool-07-v1.1.pdf – Checked 25th February 2009					
9.	EB41, Annex 20	Indicative simplified baseline and monitoring methodologies for selected small-scale CDM project activity categories.	12	2nd August 2008	.pdf
Weblink: http://cdm.unfccc.int/EB/041/eb41_repan20.pdf – Checked 25th February 2009					
10.	EB34, Annex 9	Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD) and the form for Proposed New Small Scale Methodologoes (CDM-SSC-NM).	5	14th September 2007	.pdf
Weblink: http://cdm.unfccc.int/Reference/Guidclarif/pdd/PDD_guid02_v05.pdf – Checked 25th February 2009					
11.	EB41, Annex 46	Guidance on the demonstration and assessment of prior consideration of the CDM	1	2nd August 2008	.pdf
Weblink: http://cdm.unfccc.int/EB/041/eb41_repan46.pdf – Checked 28th May 2009					
12.	ANEEL	Boletim de Energia	1	8th to 14th October 2003	.pdf
Weblink: http://www.aneel.gov.br/arquivos/PDF/BOLETIM_ENERGIA_097.htm – 5th May 2009 – Checked 11th June 2009					
13.	Run-of-river	Eletrobrás (Centrais Elétricas Brasileiras S.A – Electricity Agency)	n.v.	n.d.	.asp
Weblink: http://www.eletrobras.gov.br/EM_Programas_PCH-COM/capitulos.asp. Checked 11th June 2009					
14.	ANEEL	Agência Nacional de Energia Elétrica Dispatch	911	16th November 2004	.pdf
15.	AP Engenharia Ltda.	Technical Description of ARS	n.v.	July 2004	.pdf
16.	FEMA – Environmental License	Operation License	297328/2009	18th August 2006	.pdf
17.	Map	Map of the Project	n.v.	9th May 2009	.pdf
18.	ANEEL	Agência Nacional de Energia Elétrica Resolution	1490	5th August 2008	pdf
19.	UNFCCC	Project Search	n.v.	n.d.	.html
Weblink: http://cdm.unfccc.int/Projects/projsearch.html – Checked 28th May 2009					
20.	UNFCCC	Validation Projects	n.v.	n.d.	.html
Weblink: http://cdm.unfccc.int/Projects/Validation/index.html – Checked 28th May 2009					
21.	MCT	Resolution Nº 8	n.v.	26th May 2006	.pdf
Weblink: http://www.mct.gov.br/upd_blob/0024/24833.pdf					
22.	Emission Factor	MCT Emission Factor 2007	n.v.	29th April 2008	.pdf
Weblink: http://www.mct.gov.br/index.php/content/view/303073.html – 27th May 2009					
23.	Common Practice	ARS Common Practice Spreadsheet	n.v.	21st May 2009	.xls
24.	ANNEL BIG	Bank of Generation Information – Brazil	n.v.	26th May 2009	.htm

ID	Description	Title	Version	Date	Format
Weblink: http://www.aneel.gov.br/15.htm – Checked 28th May 2009					
25.	ANNEL BIG	Bank of Generation Information – MT	n.v.	26th May 2009	.htm
Weblink: http://www.aneel.gov.br/15.htm – Checked 28th May 2009					
26.	ANNEL BIG	Bank of Generation Information – MT Capacities	n.v.	26th May 2009	.htm
Weblink: http://www.aneel.gov.br/15.htm – Checked 28th May 2009					
27.	Minutes of the partners meeting	Internal meeting – CDM consideration	n.v.	10th September 2001	.pdf
B	ANEEL	Agência Nacional de Energia Elétrica Resolution	284	28th May 2002	.pdf
C	Request to ANEEL	Process N° 48500.001494/96-54 PCH ARS	n.v.	27th May 2003	.pdf
D	Environmental License	Installation License	397/2003	29th December 2003	.pdf
E	Financing Request	Letter from Tecnovolt to BNDES	n.v.	25th August 2004	.pdf
F	Financing request	Letter from Tecnovolt to Banco do Brasil	n.v.	30th October 2004	.pdf
G	ANEEL	Agência Nacional de Energia Elétrica Dispatch	911	16th November 2004	.pdf
H	Financing Request	Letter from Tecnovolt to Caixa Econômica Federal	n.v.	9th February 2005	.pdf
I	Environmental license	Installation License	154/2005	2nd March 2005	.jpg
J	Financing Request	Letter from BNDES to Tecnovolt	n.v.	11th October 2005	.jpg
K	Equipment Purchase Contract	Letter from HISA to Tecnovolt.	n.v.	4th January 2006	.pdf
L	Project sponsor contacted MGM	Flessak contracted PWC regarding PDD development	n.v.	11th March 2006	.msg
M	PDD Development Information	MGM contacted Osvaldo Stella regarding PDD development of PCH ARS. Email sent by Stefan David	n.v.	29th June 2006	.msg
N	Equipment Purchase Contract	Letter from HISA to Tecnovolt.	n.v.	27th July 2006	.pdf
O	CDM Project Development Agreement	Contract between MGM and Tecnovolt	n.v.	26th September 2006	.pdf
P	Invitation letter	Invitation letter sent to the local stakeholders	n.v.	January 2007	.pdf
Q	PDD	PDD sent to SGS	n.v.	12th April 2007	.msg
R	PDD	First Global Stakeholders Consultation	n.v.	18th April 2007	.html
Weblink: http://cdm.unfccc.int/Projects/Validation/index.html – Checked 28th May 2009					
S	Financing Approval	Letter from CAIXA to Tecnovolt	n.v.	8th May 2007	.pdf
T	Bank Loan Contract	Financial contract between CAIXA and Tecnovolt	n.v.	18th June 2007	.pdf
U	Site Visit by DOE	Site visit carried out at ARS plant	1	22nd July 2007	.pdf
V	Validation Report	Draft validation report	1	12th September 2007	.pdf
W	National Approval Process	Draft validation report submitted to Brazilian DNA.	n.v.	2nd August 2007	.html
Weblink: http://www.mct.gov.br/index.php/content/view/68007.html – Check 28th May 2009					
X	PDD	Second Global Stakeholders Consultation.	n.v.	13th December 2007	.html
Weblink: http://cdm.unfccc.int/Projects/Validation/index.html – Check 28th May 2009					

ID	Description	Title	Version	Date	Format
Y	ANEEL	Requesting to ANEEL approval of project implementation.	n.v.	6th March 2008	.pdf
Z	Environmental License	Installation License	1096/2007	16th May 2008	.pdf
AA	Letter of Approval	Letter of approval from Brazilian DNA	n.v.	4th July 2008	.pdf
28.	ANNEL BIG	Bank of Generation Information – Brazil Capacities	n.v.	27th May 2009	.htm
Weblink: http://www.aneel.gov.br/aplicacoes/capacidadebrasil/capacidadebrasil.asp – Checked 28th May 2009					
29.	Equipment Purchase Contract	Flessak Equipment Purchase Agreement	n.v.	4th January 2006	.pdf
30.	CDM Consideration	Internal Meeting – Portuguese	n.v.	10th September 2001	.pdf
b	CDM Consideration	Internal Meeting – English	n.v.	10th September 2001	.pdf
31.	Additionality	Additonality	n.v.	numerous	.zip
32.	Common Practice	SHP Rio Prata – ANEEL N° 48100.001895/94-33	-	7th March 2005	.pdf
33.	Common Practice	SHP Camargo Correa	-	5th September 2005	.asp
Weblink: http://inter.bndes.gov.br/english/news/not112_05.asp – Checked 11th June 2009					
34.	Common Practice	SHP Camargo Corrêa – ANEEL Nº 48100.483045/95-51	-	26th July 2004	.pdf
35.	ER	Emission Reduction Spreadsheet	2	22nd May 2009	.xls
36.	NOS	Operador Nacional do Sistema Elétrico – Calibration procedure of energy meters	2	7th July 2008	.pdf
37.	Flessak Eletro Industrial Ltda	Descriptive Memorial	n.v.	23rd February 2008	.pdf
38.	Letters of Invitation	Local Stakeholders Consultation	n.v.	27th January 2009, 6th May 2009	.pdf
39.	Equipments Internal Consumption	Internal consumption at ARS plant	1	13th June 2009	.xls
40.	Turbine Equipment	HISA – Turbine Purchase Offer	n.v.	27th July 2006	.pdf
41.	Generator Equipment	Flessak Generators Technical Data.	n.v.	7th February 2007	.pdf

ID	Description	Title	Version	Date	Format
42.	Decision 4/CMP.1, Annex II	Further clarifications on definitions of eligible activities	n.v.	30th March 2006	.pdf
Weblink: http://cdm.unfccc.int/Reference/COPMOP/08a01.pdf#page=43 – Checked 25th February 2009					
43.	UNFCCC	Parties and Observers	n.v.	n.d.	.pdf
Weblink: http://unfccc.int/parties_and_observers/parties/items/2352.php – 28th May 2009					
44.	MCT	Emission Factor 2007	n.v.	n.d.	.html
Weblink: http://www.mct.gov.br/index.php/content/view/303073.html – Checked 16th April 2009					
45.	MCT	Emission Factor 2008	n.v.	n.d.	.html
Weblink: http://www.mct.gov.br/index.php/content/view/303077.html#ancora – Checked 28th May 2009					
46.	PROINFA	PROINFA – Approved Small-scale Hydro Projects	n.v.	n.d.	.pdf
Weblink: http://www.eletrobras.gov.br/ELB/services/DocumentManagement/FileDownload.EZTSvc.asp?DocumentID={26924AEC-4ECD-4B19-9FED-CC9F45D6BE82}&ServiceInstUID={9C2100BF-1555-4A9D-B454-2265750C76E1} – Checked 28th May 2009					
47.	CDM	Capacity Development for Clean Development Mechanism	n.v.	n.d.	.html
Weblink: http://www.cd4cdm.org/ – Checked 28th May 2009					
48.	ANEEL	Resolution nº 395	n.v.	n.d.	.pdf
Weblink: http://www3.aneel.gov.br/empreendedor/documentos/022-007_Res_ANEEL_395-04-12-1998.pdf – Checked 6th July 2009					

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A.1 Annex 1: Local Assessment

The checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document (PDD) for ARS Small Hydroelectric Power Plant.

It serves as a "**reality check**" on the project that is completed by a local assessor from SGS Brazil

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
Confirm the installed capacity informed in the PDD (6.66 MW); Check the equipment installed on-site and the ANEEL document.	The installation capacity of ARS hydropower was confirmed on the ANEEL License (ref. 14and 18). ANEEL License (5th August 2008, resolution authorisation no. 1490 – ref.18) states the following: Max: 6.66MW, Mean: 5.23 MW ANEEL: 16th November 2004 (dispatch no. 911) (ref. 14). Equipment purchase agreement (ref.18) states 2*3.265 (3.3*2=6.6MW) dated 27th July 2006 Site visited 16th March 2009. Proposed project activity is under construction. Photos taken of equipment on site.	The following documents were verified: o ANEEL License dated 5th August 2008 – ref.18. o ANEEl License, dated 16th November 2004 – ref.11. o ANEEL License dated 30th October 2006. o Equipment Purchase Agreement, dated 27th July 2006 – ref.18. o Site visit photos taken on-site, dated 16th March 2009 (at ARS plant).	**No**
Provide evidence and take pictures of the installed equipments (generators, metering, turbines). Also, take print screen from command panel. Carry out sampling of the energy generation from the system.	The follow equipment will installed at ARS plant: 1. 2 generators manufactured by Flessak Eletro Industrial Ltda, 4000KVA, 6900V, 180 RPM (ref. 40). 2. 2 turbines Francis manufactured by HISA Hidráulica Industrial S.A, 3,265 KW, 180 RPM (ref. 41). The energy meters will be installed before the plant become operation.	The following documents were verified: o Site visit photos taken on-site, dated 16th March 2009 (at ARS plant). o Ref. 14 o Ref. 15 o Ref. 40	**FAR #17** **See Annex 3, FAR #17 for more details.**

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
		○ Ref. 41	
Confirm the locality (Von Den Stein River coordinates etc). Check the project is not a debundled project. Confirm details of evidence verified on-site.	ANEEL license (ref. 11) states the following: LAT: 13° 05' 57''S LONG: 54° 49' 08''W The project is located on Von del Steinen River, Nova Ubitã city – Mato Grosso. Confirmed during site visit conducted 5th May 2009 (at ARS office) and via interview, that the project is not debundled project. Proposed project activity under construction. Site visited 16th March 2009 (at ARS plant), photos taken on site.	The following documents were verified: ○ ANEEL License, n.911 dated 16th November 2004 (ref.11). ○ Site visit photos taken on-site, dated 16th March 2009.	**CAR #4.** **See Annex 3, CAR #4 for more details.**
Verify if the project is a run-of-river. Ask for evidence, such as studies, environmental license, maps or topographic maps.	The project activity is a run-of-river. The requirements to classify a project as run-of-river were verified by assessment team. The Eletrobrás requirements is a public information and it is available on the website: http://www.eletrobras.gov.br/EM_Programas_PCH-COM/capitulos.asp ANEEL license (16th November 2004 – ref.11) confirm the area of Reservoir 1.64km. Proposed project activity under construction. Site visited 16th March 2009 (at ARS plant), photos taken on site.	The following documents were verified: ○ ANEEL License, dated 16th November 2004 (ref.11). ○ Ref.10 ○ Site visit photos taken on-site, dated 16th March 2009.	**CAR#1** **See Annex 3, CAR #1 for more details.**
Ask for a copy of "Boletim Energia, number 97, 2003" showing the commercial exploration of three thermoelectric plant connected to the grid.	Document supplied by Client. Regarding the three thermoelectric, the PP provided evidence (Ref.27) which those plants were the current scenario when the decision to implement the project activity was taken.	The following documents were verified: Ref. 27 – http://www.aneel.gov.br/arquivos/PDF/BOLETIM_ENERGIA_097.htm – 5th May 2009	**CAR#1** **See Annex 3, CAR #1 for more details**

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
Give evidence of who is the responsible party of the project. For example, confirm if the company's name is shown in ANEEL licenses or environmental licenses.	ANEEL license (5th August 2008 – ref.17) states the following: Technovolt Centrais Electricas Ltda is the responsible party for the project activity.	The following documents were verified: o ANEEL License, dated 5th August 2008 (ref.17).	**No**
Confirm the electricity generation of ARSSHP 45,798MWh/year.	**Electricity generation = Plant capacity*Annual hours*Capacity factor** = 6.66*8760*0.785 = 45798 MWh/y Where: Plant capacity = 6.66MW (ref.11) Annual hours = 8760 = 24*365 Capacity factor = 0.785 (see below)	The following documents were verified: o (ref.11).	**CAR #7** **See Annex 3, CAR #7 for more details.**
Check the capacity factor of 0.785.	**Capacity factor = Maximum capacity / Mean capacity** = 5.23/6.66 = 0.785 (rounded to 3 decimal places) Where: Maximum capacity = 6.66MW (ANEEL License) Mean capacity = 5.23MW (ANEEL License)	The following documents were verified: ANEEL License, dated 5th August 2008 (ref.18).	**CAR #7.** **See Annex 3, CAR #7 for more details.**
Confirm what data was used for estimate the energy produced annually. How many MWh will the plant generate/year?	See above information.	See above information.	**CAR #7.** **See Annex 3, CAR #7 for more details.**

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
Confirm the internal consumption and auxiliary system of the equipments.	The internal consumption was estimated based on the equipments (Ref.19) which will be installed at the ARS plant. The project will consume 30.34MWh diary Monthly: 30.34MWh*24 hours/365 days per year = 22,146.98MWh The internal consumption in not required by AMS.I.D, version 13. This will data will be monitored by plant as an internal control.	The following documents were verified: Internal Consumption at ARS plant (ref.39)	**No**
Verify how the supervisory system is implemented the energy generation and how the energy report is generated (page 17 and 18). Ask for copies of the spreadsheet mentioned in page 28.	The energy generation will be carried out through Supervisory System. All information will be transmitted from energy meters to supervisory by internet. The system collects information from the energy meters every 5 minutes, and reports the energy generated per day, month and year. Also this system shows the energy generation in real time. CEMAT concessionary also gets the information from the energy meters (every 15 minutes) and sent a report with the amount of energy generated to ARS plant, which will issue an invoice to CEMAT.	Site visit and interview	**No**
Verify the installed meters. Ask a copy of its calibration.	**See Annex 3, FAR #17 for more details.**	Site visit and interview	**FAR #17.** **See Annex 3, FAR #17 for more details**
Confirm that the monitoring plan is established according to PDD, version (section B.7.2) and annex 4. Following information should be available on site: • Internal auditing • Training	**See Annex 3, CAR #14, FAR #18 for more details.**	The following documents were verified: o Descriptive Memorial (ref. 31) o NOS – Operador Nacional do Sistema Elétrico (ref. 32)	**CAR#14 and FAR#18** **See Annex 3, CAR #14, FAR #18 for more details.**

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
• Responsibilities for MR • Achieving time • Internal procedures (training, calibration, auditing, maintenance, working instructions, etc).			
Verify the original documents the support the timeline of the project activity and describe a brief of its content: • Minutes of the Partners Meeting (10/09/2001). • Financing information (11/10/2005). • Contact with MGM (11/03/2006). • PDD development information (29/06/2006). • Equipment purchase contract (27/07/2006). • CDM project agreement (26/09/2006). • PDD sent to SGS (12/04/2007). • Bank Loan contract (18/06/2007).	**10th September 2001 – ref.26a** MGM supplied book showing internal meeting reports and CDM consideration in Ata Number 1 and 2. Book is signed by Paulo Victorino Favero (Sectreteriat Designado). - **28th May 2002** Tecnovolt is authorized by ANEEL to explore the ARS plant – ref. 26b. - **27th May 2003** Tecnovolt requested to ANEEL a new chronogram of implantation – ref. 26c. - **29th December 2003** Installation license issued by environmental agency that gives permission the construction of the plant ref.26d. - **25th August 2004** Tecnovolt to BNDES supplied dated 25th August 2005, signed by Paulo Victorino Favero. ARS plant asks financing to the bank – ref. 26e. - **30th October 2004** Tecnovolt letter to Banco do Brasil supplied. Dated 30th October 2004, signed by Oreste de Bortoli Faitta. Tecnovolt is asking	The following documents were verified: ○ Meeting minutes, dated 10th September 2001 – ref.27. ○ ANEEL Resolution N°284, dated 28 May 2002 – ref.27. ○ Process nº 48500.0011494/96-54 – ref.27. ○ Installation license, N° 397/2003, issued by FEMA (Fundação Estadual do Meio Ambiente) – ref. 27. ○ Letter from Tecnovolt to BNDES, dated 25th August 2005 – ref.27. ○ Letter from Tecnovolt letter to Banco do Brasil, dated 30th October 2004 – ref.27. ○ ANEEL Dispatch nº 911, dated 16th November 2004 – ref.27. ○ Letter from Tecnovolt letter to CAIXA, dated 9th February 2005 – ref.27. ○ Installation license	**CAR#11** **See Annex 3, CAR #11 for more details.**

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
	the financing to the Brasil Bank – ref.26f. - **16th November 2004** ANEEL approves the basic project of engineering (ref.26g). **9th February 2005** Tecnovolt letter to CAIXA supplied dated 9th February 2005, signed by Paulo Victorina Favero. The financing requested to BNDES bank was transferred to another bank (Caixa Econômica Federal) – ref.26h. - **2nd March 2005** Tecnovolt requested a new installation license because of the previous license had expired – ref.26i. - **11th October 2005** BNDES letter to Technovolt Centrais Eletricas S.A. supplied (carta CEC-505/05). Signed by Ricardo Luiz de Souza Ramos, dated 11th November 2005. Tecnovolt received the letter from Caixa Econômica Federal informing the project was qualified to the financing – ref.26j.	Nº154/2005, dated 02/03/2005, issued by FEMA (Fundação Estadual do Meio Ambiente) ref.27. ○ Letter from BNDES to Tecnovolt Centrais Eletricas S.A. (carta CEC-505/05), dated 11th October 2005 – ref.27. ○ Equipment purchase agreement between Flessak Electro Industrial Ltda and Tecnovolt S.A., dated 4th January 2006 – ref.16.	
	- **4th January 2006** Equipment purchase agreement between Flessak Electro Industrial Ltda and Technovolt S.A. Signed by Edson Carlso Flessak. It is the starting date – ref.16. - **11th March 2006** Flessak contracted PWC regarding PDD development (9th March 2006). PWC forwarded Flessak to MGM, email dated 11th March 2009 – ref.26k. - **29th June 2006**	○ Flessak contracted PWC regarding PDD development (9th March 2006). PWC forwarded Flessak to MGM, email dated 11th March 2009 – ref.27. ○ MGM contacted Osvaldo Stella regarding PDD development of PCH ARS. Email sent by Stefan David, dated 29th June 2006 – ref.27.	

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
	MGM contacted Osvaldo Stella regarding PDD development of PCH ARS. Email sent by Stefan David – ref.26l. - **27th July 2006** HISA (Hidraulica Industrial S.A.) letter to Tecnovolt supplied equipment purchase agreement of two turbines. Signed by Gerson Luiz Chillemi and Edson Flessak, dated 27th July 2006. (2006-210-DT-Rev.02) – ref.26m.	○ Letter from HISA (Hidraulica Industrial S.A.) to Tecnovolt . Equipment purchase agreement of two turbines, dated 27th July 2006 – ref.27. ○ Contract between MGM and Tecnovolt, dated 26th September 2006 – ref.27. ○ Invitation letter sent to the local stakeholders – ref. 27. ○ PDD sent to SGS, dated 12/04/2007 – ref.27. ○ First Global Stakeholders Consultation – ref. 27	
	- **26th September 2006** MGM supplied signed contract between MGM and Tecnovolt. Signed by Marco G. Monroy and Edson Carlos Flessak, dated 26th September 2006 ref.26n.. - **January 2007** The first local stakeholders consultation in accordance with Resolution n°1 – Brazilian DNA – ref.26o. - **12th April 2007** SGS had received the PDD, version 1 via email – ref.26p. - **18th April to 17th May 2007** First Global Stakeholders Consultation – ref.26q. UNFCCC Webpage: http://cdm.unfccc.int/Projects/Validation/index.html	○ Letter from CAIXA to Tecnovolt, dated 8th may 2007 – ref27. ○ Financial contract between CAIXA and Tecnovolt supplied, dated 18th June 2007 – ref.27. ○ Audit plan – site visit at ARS office – ref.27 ○ Draft validation report issued by SGS – ref.27. ○ Draft validation report submitted to Brazilian DNA – ref.27. ○ Second Global Stakeholders	

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
	8th May 2007 CAIXA letter to Tecnovolt supplied approving finance of PCH ARS project – ref.26r. Signed by Elizete Ferronado Pretto and Wilson Argenton. - **18th June 2007** Financial contract between CAIXA and Tecnovolt supplied. Signed by Roberto Carlos Ceratto, Oreste de Bortoli Faitta and Edson Carlos Flessak, dated 18th June 2007 – ref.26s. - **22nd and 23th July 2007** Site visit carried out by SGS at ARS office – ref.26t. - **12th September 2007** The draft validation report, version 1 issued by SGS – ref.26u. - 2nd August 2007 The draft validation report submitted to Brazilian DNA – ref26.v. - **13th December 2007 to 11th January 2008** Second Global Stakeholders consultation – ref.26w. http://cdm.unfccc.int/Projects/Validation/index.html - **6th March 2008** Tecnovolt requested to ANEEL approval of the updated chronogram of project implementation – ref.26x. - **16th May 2008** A new Installation license issued by environmental agency that gives permission the construction of the plant ref.26y. - **4th July 2008** Letter of approval from Brazilian DNA issued –ref.26z.	consultation – ref.27. ○ Requesting to ANEEL approval of project implementation, dated 6th March 2008 – (ref. 27). ○ Installation license, N° 1096/2007, issued by FEMA (Fundação Estadual do Meio Ambiente), dated 16th May 2008 (ref. 27). ○ Letter of approval from Brazilian DNA issued on 4th July 2008 (ref. 27). ○ EB 41- annex 46. Guidance on the demonstration and assessment of prior consideration of the CDM (ref. 11) ○ Resolution ANEEL, N°1.490, dated 5th August 2008 (ref. 18) ○ Ref. 11 ○ Ref. 18 ○ Ref. 27	

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
	-**2nd August 2008** The EB published the guidance on the demonstration and assessment of the CDM consideration. PP was requested to review the PDD in accordance with this new guidance – ref.9. -5th August 2008 ANEEL issued authorization to the Tecnovolt to use the necessary land to implement the transmission lines. From this date the line transmission could be constructed – ref.17. - **From November 2008** MGM and SGS have started new validation process.		
Check which evidence confirm the project starting date.	**Starting date on 4th January 2006** Equipment purchase agreement between Flessak Electro Industrial Ltda and Technovolt S.A. Signed by Edson Carlso Flessak. (ref. 29)	The following documents were verified: o Ref. 29	**No**
Is there an operation authorization issued by ANEEL? Please check and provided details. Ask copy of this authorization.	The ARS plant gotten the operation authorization issued by Energy Agency (ANEEL – Agência Nacional de Energia Elétrica) – (ref. 14). And Small-scale hydroelectric – (Operation License) LO no. 297328/2009 (cert. 022834), dated 30th April 2009. (ref. 27)	The following documents were verified: o Ref. 27 o Ref. 14	**CAR #7.** **See Annex 3, CAR #7 for more details.**
Verify the environmental licensing process. Check the environmental studies (if there is a PCA, a RAP and a PRAD or other study and plan required by	Confirmed on site inspection that the ARS plant is under construction. The Operation license (ref.13a) was already issued. All the environmental requirements have been followed accordingly. **Current environmental license:** Small-scale hydroelectric – (Operation License) LO no. 297328/2009 (cert. 022834), dated 30th April 2009, valid 29/04/2009, issued by SEMA – Secretária	The following documents were verified: o Installation License LI no. 154/2005 – ref.13d. o Electricity transmission – (Preliminary License) LP no. 1132/2007 – ref.13e.	**No**

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
Fema). Check the current operation license and the conditions defined by the environmental agency. Ask copies of the current license and record the details of all relevant documents verified on-site.	do Estado do Meio Ambiente (ref.13ª). Small-scale hydroelectric – (Installation License) LI no. 397/2003), dated 29th December 2003, issued by SEMA – Secretária do Estado do Meio Ambiente (ref.13b). Small-scale hydroelectric – (Installation License) LI no. 519/2004), n.d, issued by SEMA – Secretária do Estado do Meio Ambiente (ref.13c). Small-scale hydroelectric – (Installation License) LI no. 154/2005, dated 2nd March 2005, issued by SEMA – Secretária do Estado do Meio Ambiente (ref.13d). Electricity transmission – (Preliminar License) LP no. 1132/2007, dated 23rd January 2007, issued by SEMA – Secretária do Estado do Meio Ambiente (ref.13e). Electricity transmission – (Installation License) LI no. 984/2007 (cert. 8919), dated 23rd January 2007, issued by SEMA – Secretária do Estado do Meio Ambiente (ref.13f). Small-scale hydroelectric – (Installation License) LI no. 397/2003), dated 28th February 2007, issued by SEMA – Secretária do Estado do Meio Ambiente (ref.13g).. Small-scale hydroelectric – (Installation License) LI no. 1096/2007 (cert. 018239), dated 16th May 2008, issued by SEMA – Secretária do Estado do Meio Ambiente (ref.13h).	○ Electricity transmission – (Installation License) LI no. 984/2007 (cert. 8919) – ref.13f. ○ Installation License LI no. 1096/2007 (cert. 018239) – ref.13h ○ Operation License LO no. 297328/2009 (cert. 022834) – ref.13a.	
Verify and record the names of each stakeholder invited to comment on the project. It is possible to confirm the invitation by Ars? Are they covering the DNA requirements?	The letters were sent to the following local stakeholders: - Municipality (Nova Ubiratã) – 27th January 2009 - Alderman Chamber (Nova Ubiratã) – 27th January 2009 - Municipal Environmental Agency (Nova Ubiratã) – 27th January 2009 - State Environmental Agency: SEMA/MT – Secretaria de	The following documents were verified: Ref. 38 – Local Stakeholders Consultation.	**CAR #16.** **See Findings Overview for more details.**

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
Ask copies of Ars.	Estado do Meio Ambiente – 27th January 2009 - State Environmental Agency: FEMA/MT – Secretaria de Estado do Meio Ambiente – 27th January 2009. - Brazilian □órum of NGOs – □órum Brasileiro de ONGs e Movimentos Sociais para o Meio Ambiente e Desenvolvimento (FBOMS) – 27th January 2009 - Community Association (Nova Ubiratã) – 27th January 2009 - Public Ministry (Nova Ubiratã) – 27th January 2009 - Federal Ministry – 6th May 2009. The invitation covered the DNA requirements.		
Confirm the letter and material sent to the stakeholders (language, media etc).	Documentation supplied by the Client at the site visit (5th May 2009 at ARS Plant) conforms to Resolution No. 7, 5th March 2008 from Brazilian DNA.	Invitation letters reviewed along with AR's. Ref. 38 – Local Stakeholders Consultation.	No
Check the responses and comments received from the stakeholders.	**Municipality (Nova Ubiratã)** One comment received regarding implementation of social and environmental aspects to the project, (for example planting small trees). No negative comments received. **Alderman Chamber (Nova Ubiratã)** One comment received regarding implementation of environmental awareness. No negative comments received. **Municipal Environmental Agency (Nova Ubiratã)** **State Environmental Agency: SEMA/MT – Secretaria de Estado do Meio Ambiente.**	Invitation letters reviewed along with AR's. Ref. 38 – Local Stakeholders Consultation	**CAR #16.** **See Findings Overview for more details.**

Issue	Findings	Source/Means of Verification	Further Action / Clarification / Information Required?
	No comments received. **State Environmental Agency: FEMA/MT – Secretaria de Estado do Meio Ambiente.** No comments received. **Brazilian □órum of NGOs – □órum Brasileiro de ONGs e Movimentos Sociais para o Meio Ambiente e Desenvolvimento (FBOMS).** No comments received. **Community Association (Nova Ubiratã)** No comments received. **Public Ministry (Nova Ubiratã)** No comments received. **Federal Ministry** No comments received.		
Annex 4 "Monitoring plan" Check the spreadsheet mentioned in page 28 for data input and results. Ask copy of the spreadsheet.	The ER spreadsheet template (ref.25) for data inputting was provided. It will be used for monitoring of emission reduction.	Ref. 39 – MGM_ARS Tecnovolt_ monitoring spreadsheet.xls	**No**
Provide the management structure implemented at ARS plant.	Document supplied by Edson Flessak, dated 5th May 2009 (at ARS office). The management and operational structure was inserted in the PDD, version 5, section B.7.2.	Management and operational structure – PDD, version 5 (ref. 1)	**No**
ER spreadsheet	ER spreadsheet supplied on site visit at ARS plant (5th May 2009).	The following documents were verified:	**CL #5.** **See Annex 3, CL #5 for**

<table>
<tr><th>Issue</th><th>Findings</th><th>Source/Means of Verification</th><th>Further Action / Clarification / Information Required?</th></tr>
<tr><td></td><td>Reviewing the values showed that they were typed.
Values were changed to show how values were obtained (calculations).
The ER spreadsheet calculation is in accordance with AMS.I.D, version 13.
With the change of values using calculation.
Before:
<table><tr><th>CERs (ER)</th></tr><tr><td>4.218,0</td></tr><tr><td>8.436,0</td></tr><tr><td>8.436,0</td></tr><tr><td>8.436,0</td></tr><tr><td>8.436,0</td></tr><tr><td>8.436,0</td></tr><tr><td>8.436,0</td></tr><tr><td>4.218,0</td></tr><tr><td>59.052</td></tr><tr><td>8.436</td></tr></table>After:
<table><tr><th>CERs (ER)</th></tr><tr><td>4.219,5</td></tr><tr><td>8.439,1</td></tr><tr><td>8.439,1</td></tr><tr><td>8.439,1</td></tr><tr><td>8.439,1</td></tr><tr><td>8.439,1</td></tr><tr><td>8.439,1</td></tr><tr><td>4.219,5</td></tr><tr><td>59.074</td></tr><tr><td>8.439</td></tr></table></td><td>o Ref. 35.</td><td>more details.</td></tr>
</table>

A.2 Annex 2: Validation Checklist

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
A. General Description of Project Activity				
A.1. Project Title				
A.1.1. Does the used project title clearly enable the reader to identify the unique CDM activity?	VVM Para.56 Ref. 1, 10	DR	From the information supplied by the Client in the PDD (ref. 1) section A.1. contains the following: Project Title: "ARS Small Hydroelectric Power Plant" The proposed project activity title is considered unique to allow readers to identify the project activity (PA).	**Y**
A.1.2. Is there an indication of a revision number and the date of the revision?	VVM Para.56 Ref. 1, 10	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section A.1 contains the following: • Version 4, dated 17th February 2009 In the information supplied by the Client in the revised PDD (version 5) (ref. 1) section A.1 contains the following: • Version 5, dated 22nd May 2009	**Y** **Y**
A.2. Description of the Project Activity				
A.2.1. Does the description of the proposed CDM project activity as contained in the PDD sufficiently cover all relevant elements accurately?	VVM Para.59 Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section A.2. goes into general details regarding the purpose for the project activity (PA), the type of technology being used and the PA contribution to sustainable development. However the description in the does not include all relevant information that provides a clear understanding of the proposed project activity. There is no clear information whether the hydropower is a run-of-river.	**CL #1** **Closed out..**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			Furthermore, no evidences regarding three thermoelectric plants were provided. Information shall be available on • the purpose of the project activity, • type of technology used and the contribution of the project to sustainable development. CAR #1 was raised. **See Annex 3, CL #1 for more details.**	
A.2.2. Does the information provide the reader with a clear understanding of the proposed CDM activity?	VVM Para.60 Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) section A.2. provides the reader with a general understanding of the proposed project activity (PA). However further information regarding the project description, such as the installed capacity, number of equipments etc should be provided. CAR # 2 was raised. **See Annex 3, CAR #2 for more details.**	**CL #2** **Closed out.**
A.2.3. Is all information provided consistent and in compliance with the actual situation or planning?	VVM Para.64 Ref. 1, 10, 12-16	DR - SV	From the information provided by the Client in the PDD (version 4) (ref. 1) section A.2. is indeterminate if in compliance with actual planning/situation. During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 all information provided was consistent with the actual planning/situation. The project consists of installation of a new small hydropower which will generate renewable energy to the grid. At present the project is under construction. It is expected to become operational from 30/04/2009 (ref. 16).	**Pending Site Visit.** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			See Annex 1 for more details.	
A.2.4. Is all information provided consistent with details provided in further chapters of the PDD?	VVM Para.64 Ref. 1, 10, 12-15	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section A.2. is consistent with details provided in further chapters. The project consists of installation of a new small hydropower with 6.66MW of installed capacity, which will supply renewable energy to the Brazilian National Interconnected Electricity System.	**Y**
A.3. Project Participants				
A.3.1. Is the table required for the indication of project participants correctly applied?	VVM Para. 51 Ref. 1, 10.	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section A.3. contains the following: Brazil | Tecnovolt Centrais Elétricas S.A. | No The information complies with EB 34, Annex 9 (ref. 10) and is considered correct.	**Y**
A.3.2. Is all information provided in consistency with details provided by further chapters of the PDD (in particular annex 1)?	VVM Para. 51 Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1), Annex 1 complies with Section A.3; however not all information is supplied in Annex 1 as per EB34, Annex 9 (ref. 10). CAR#3 was raised. **See Annex 3, CAR #3 for more details.**	**CAR #3** **Closed out..**
A.4. Technical Description of the Project Activity				
A.4.1. Does the information provided on the location of the project activity allow for a clear identification of the site(s)? Are the latitude and longitude	VVM Para.64 Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section A.4.1. contains a general description of the projects location including unique latitude and longitude coordinates. However the description is unclear and the diagram (figure 1) provided could be more detailed. CAR #4 was raised.	**CAR #4** **Closed out..**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
of the site indicated (decimal points)			**See Annex 3, CAR #4 for more details.**	
A.4.2. Does the proposed CDM project activity involve the alteration of existing installations or process?	VVM Para.64 Ref. 1, 10, 14, 16, 18	DR	From the information supplied by the Client in the PDD (version 5) (ref. 1) and site visit conducted 16th March 2009, the project activity consists of the construction and installation of a new small hydroelectric power plant. The licenses issued by environmental and energy agencies (ref. 14, 16, 18) confirming that the project activity is a new hydropower.	**Y**
A.4.3. Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?	VVM Para.64 Ref. 1, 10, 14, 16, 18, 27	DR SV	From the information supplied by the Client in the PDD (version 4) (ref. 1) there is no indication that of ownership or licenses, which allow the implementation of the proposed project activity (PA) at the site. - From the site visit conducted on the 16th – 18th March 2009 and 4th – 7th May 2009 the Client and Consultant supplied the necessary documentation. According to PP, the project implementation requires the following licenses were issued by FEMA (Fundação Estadual do Meio Ambiente): - Installation license, number 397/2003, issued on 29/12/2003 (ref. 27) - Installation license, number 154, issued on 02/03/2005 (ref. 27) - Installation license, number 1096, issued on 16/05/2008 (ref. 27) - Operation license, number 297328/2009, issued on 30/04/2009 (ref. 16) According to ANEEL (Agência Nacional de Energia Elétrica) requirements the following licenses were issued: - ANEEL: 28th May 2002 (resolution no.284) (ref. 27). - ANEEL: 16th November 2004 (dispatch no. 911) (ref. 14). - ANEEL: 5th August 2008 (resolution no. 1490) (ref.18).	**Pending Site Visit** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			See Annex 1 for more details.	
A.4.4. Is the category(ies) of the project activity correctly identified?	VVM Para.64 Ref. 1, 9, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the proposed project activity (PA) will use AMS – I.D. (scope 1) and is considered correct for the proposed PA.	**Y**
A.4.5. Is all information provided in compliance with actual situation or planning as available by the project participants?	VVM Para.64 Ref. 1, 10, 13, 17, 27	DR SV	From the information provided by the Client in the PDD (version 4) (ref. 1) is indeterminate if in compliance with actual planning/situation. - From the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 all information provided was consistent with the actual planning/situation. According to Brazilian Legislation, the environmental and ANEEL licenses would not be emitted if the project had not been in compliance with the requirements applicable to hydro powers. **See Annex 1 for more details.**	**Pending Site Visit** **Y**
A.4.6. Is the table required for the indication of projected emission reductions correctly applied?	VVM Para.64 Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section 4.3 does not meet the requirements as per EB 34, Annex 9 (ref. 10). CL # 5 was raised. **See Annex 3, CL #5 for more details.**	**CL #5** **Closed out..**
A.5. Public Funding				
A.5.1. Does the information on public funding provided conform to the actual situation or planning as presented by the project participants?	Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) there is no public funding involved in the project activity (PA).	**Y**
A.5.2. Is all information provided consistent with details provided	Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section 4.4. all information regarding public funding is consistent with further chapters, in	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
by further chapters of the PDD (in particular annex 2)?			particularly Annex 2.	
A.5.3. In case of public funding from Annex I Parties is it confirmed that such funding does not result in a diversion of official development assistance	Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section 4.4. all information regarding public funding is consistent with further chapters, in particularly Annex 2.	**Y**
A.6. Debundling				
A.6.1. Is the small-scale project activity a debundled component of a large scale project activity	VVM Para. 134c Ref. 1, 7, 19, 20	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section A.4.5. the proposed project activity is not a debundled component of a large scale project activity as it does not meet the requirements set out in EB 36, Annex 27 (ref. 7). - There is no other SSC CDM project activity with an application to register (ref. 20) or registered (ref. 19) in the same project category and with the same project participants.	**Y**
A.6.2. If the project is a debundled component of a larger project, does the larger project fall within the limits for small-scale CDM project activities	VVM Para. 134c Ref. 1, 7	DR	Not Applicable	**Y**
B. Baseline and Monitoring Methodology				
B.1. Choice and Applicability				
B.1.1. Is the baseline methodology previously approved by the CDM Methodology Panel?	VVM Para.68 Ref. 1, 4	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the project activity is applying AMS – I.D. version 13, dated 14th December 2007 (ref. 4).	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.1.2. Has the methodology (incl. the tools) been altered from the original version as referenced in the PDD?	VVM Para.69 Ref. 1, 4, 8	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the methodology (AMS I D) (ref. 4) and tools (AM_Tool_07) (ref. 8) used have not been altered from the original stated in the PDD.	**Y**
B.1.3. Does the project activity qualify as small scale project?	VVM Para. 134[a] Ref. 1,2, 11, 13, 17, 26b, 26d, 26i, 26y	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.2. supplies a brief justification for the choice of project category, but does not follow the guidance set out in EB34, Annex 9 (ref. 10). CAR#6 was raised. **See Annex 3, CAR #6 for more details**	**CAR #6** **Closed out.**
B.1.4. Is the category(ies) of the project activity correctly identified in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities?	Ref. 1, 10, 14	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.1. clearly identifies the category(ies) of the project activity correctly identified in accordance with Appendix B to the simplified modalities and procedures for small-scale CDM project activities (ref. 5). The project activity will not exceed 15MW installed capacity during the crediting period. According to ANEEL (ref. 14) the maximum output is 6.66MW with an assume putput of 5.23MW.	**Y**
B.1.5. Is the selected simplified methodology applicable to the project activity in the PDD?	VVM Para. 75/66[a]/68/73 Ref. 1, 4, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the project activity is applying AMS – I.D. version 13, dated 14th December 2007 (ref. 4).	**Y**
B.1.6. Does the project activity conform to one of the approved small-scale categories?	VVM Para. 134b Ref. 1, 8, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.2. clearly demonstrates the project activity conform to one of the approved small-scale categories. **See Annex 2, B.1.3 and B.1.4 for more details.**	**Y**
B.1.7. Is the project activity a bundle of several small scale activities and if so does it contain any		DR	Not Applicable	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
sub-bundles?				
B.1.8. If the project activity is a bundle of several small scale activities, does the sum of the total bundle (including any subbundles) fall within the limits for small scale projects		DR	Not Applicable	**Y**
B.1.9. If the project activity is a bundle of several small scale activities, has the form with information related to the bundle been submitted and is it correctly used		DR	Not Applicable	**Y**
B.1.10. Is the discussion in the PDD in conformance with all applicability criteria of the applied methodology?	VVM Para. 75/66b/68 Ref. 1, 10	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the justification for choice of methodology is brief and does not follow the guidance set out in EB 34, Annex 9 (ref. 10). **See Annex 3, CAR #6 for more details.** - From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.2. now meets the requirements set out in EB34, Annex 9 (ref. 10).	**Pending CAR #6** **Closed out..** **Y**
B.2. Project Boundary				
B.2.1. Are all emission sources and gases related to the baseline scenario, project scenario and leakage clearly identified and	VVM Para. 79/76 /67 Ref. 1, 4, 10	DR	Not Applicable	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
described in a complete and transparent manner? Is there information on GHG emissions in proposed CDM project activity boundary as a result of the implementation of the proposed CDM project activity which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.				
B.2.2. In case of grid connected electricity projects: Is the relevant grid correctly identified in accordance with the tool to calculate emission factor of electricity system (wherever applicable) and the underlying methodology?	VVM Para.79 Ref. 1, 10, 21	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the emission factor is already predetermined by the Ministry of Science and Technology - MCT for Brazil in accordance with Resolution Nº 8, dated 26th May 2008 (ref. 21)	**Y**
B.2.3. Does the project boundary include the physical delineation of the proposed CDM project activity?	VVM Para.78/79 Ref. 1, 4, 10, 16-17, 21	DR SV	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.3 describes the project boundary as per the methodology AMS – I.D. version 13 (ref. 4). (see Annex 1 for more details) - From the site visit conducted 16th – 18th March and 4th – 7th May 2009 the assessment team found the project boundary to be in accordance with AMS – ID v.13 (ref. 4). The project boundary encompasses the physical, geographical ARS plant generation sources, that is the Von Den Steinen river (ref. 16-17), and Brazilian National Interconnected System (ref. 21).	**Pending Site Visit.** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			See Annex 1 fore more details. -	
B.2.4. Are the project's geographical boundaries and the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	VVM Para.76/79 Ref. 1, 4, 10	DR	From the information supplied by the Client in the PD (version 4) (ref. 4) section B.3. the project activities boundaries have been clearly as per AMS – I.D. version 13, EB 36, para. 6 (ref. 4). The project boundaries encompass the physical, geographical site that includes hydropower's plant, Von Den Stein river and the interconnected grid.	**Y**
B.3. Identification of the Baseline Scenario				
B.3.1. Does the PDD discuss the identification of the most likely baseline scenario? Does the PDD follow the steps to determine the baseline scenario required by the methodology and is the application of the methodology and the discussion and determination of the chosen baseline transparent?	VVM Para.67b.80/82/86 Ref. 1, 4, 10, 14	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.4 clearly follows the steps for selecting a baseline and its development as per methodology AMS – I.D. version 13 (ref. 4). However more specific information is required regarding electricity generation. The Brazilian DNA (MCT http://www.mct.gov.br/upd_blob/0024/24833.pdf) calculates the emission factor to the grid. The emission factor of the grid is a combination of the operating margin emission factor, reflecting the intensity of the CO_2 emissions of the dispatch data margin and the build emission factor, reflecting the intensity of the CO_2 emissions of the last power plants built. CAR#7 was raised. **See Annex 1, and Annex 3, CAR #7 for more details.**	**CAR #7** **Closed out..**
B.3.2. Are all tools/procedures in the methodology correctly applied to identify the most reasonable baseline scenario? This includes all potential realistic and credible baseline scenarios in the discussion taking into	VVM Para. 81/82/86ª-d/83/84 Ref. 1, 4, 8, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B all tools (AM_Tool_07) (ref. 8) and procedures have been correctly applied as per methodology AMS – I.D. version 13 (ref. 4).	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
account relevant national and/or sectoral policies, macro-economic trends and political aspirations?				
B.3.3. Is the choice of the baseline compatible with the available data?	VVM Para. 86b-c/95 Ref. 1, 4, 8, 10, 14	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) (the baseline is compatible with the available data. (see Annex 1, CAR #7 for more details). - From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.4. the selection of the baseline is consistent with available (public) data. All key assumptions are explained and information sources clearly referenced. Sources were checked to ensure information contained in the PDD was correct. **See Annex 3, CAR #7 for more details.** -	**Pending CAR #7** **Closed out.** **Y**
B.3.4. Is conservativeness addressed in the way of identifying the baseline?	VVM Para.90 Ref. 1, 4, 10	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the baseline identified meets the requirements set out in AMS – I.D. version 13 (ref. 4). (see Annex 3, CAR #7 for more details) - From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.4. all key assumptions are explained and information sources clearly referenced. Sources were checked to ensure information contained in the PDD was correct. **See Annex 3, CAR #7 for more details.** -	**Pending CAR #7** **Closed out.** **Y**
B.3.5. Does the selected baseline represent the most likely scenario among other possible	VVM Para.90/91 Ref. 1, 4, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the selected baseline represents the most likely scenario as per AMS – I.D. version 13	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
and/or discussed scenarios?			(ref. 4). -	
B.3.6. Is there a verifiable description of the baseline scenario? Does this include a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM Para.86e/85 Ref. 1, 4, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.4. the selected baseline represents the most likely scenario as per AMS – I.D. version 13 (ref. 4).	**Y**
B.4. Additionality				
B.4.1. Does the PDD clearly demonstrate the additionality using the approach as specified in the methodology and by following all the required steps?	VVM Para.67d/95 Ref. 1, 5, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.5. Attachment A of Appendix B of the Simplified modalities and Procedures (ref. 5) All steps are followed in a transparent manner.	**Y**
B.4.2. In case of using the additionality tool: Is the 'Additionality Tool' used in the PDD latest version? If an earlier version has been used, do the changes impact the discussion in the PDD? Are all steps followed in a transparent manner?	Ref.	DR	Not Applicable -	**Y**
B.4.3. Has all information been	VVM Para.93/91	DR	From the information supplied by the Client in the PDD (version 4), Section B.5.	

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
backed up with references, sources and certification? Is the data presented credible and reliable with complete transparency to all available data and documentation?	Ref. 1, 2, 3, 21, 26, 29, 30, 31		states: Guidelines for Completing the Project Design Document, this document contains no reference. - Reference made to the start date of a project activity being in the guidelines stated is incorrect. Reference made is to large-scale guidelines and not small-scale guidelines. - Reference made to CDM PDD version 6.2 is incorrect as it refers to large-scale projects. - Project Activity was initiated on the 27th July 2006 - Board meeting held between partners 10th September 2001 - Justification for prevailing business practice is general and full of assumptions PCH-COM, PROFINA, PCH-COM v. 2 - Information relating to the footnote 5 is dated 6th August 2007, yet report was written 17th February 2009. - Reference is missing to justify small hydroelectric power plants corresponding to 2.4% as highlighted in table 2.	**CAR #9a** **CAR #9b** **CAR #9c** **CL #10a.** **CL #10b** **CL #10c** **CAR #9d** **CAR #9e** **CL #10d**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			- Information relating to the energy auction in Rio, 2005, does not relate to assumptions 1, 2 on page 12 of the PDD. - Web reference made in footnote 7 did not produce the required information stated in the PDD. - References made regarding "other barriers" are unsubstantiated - **See Annex 3, CAR #9, CL #10 for more details**	**CL #10e** **CAR #9f** **CAR #9g** **Closed out.**
B.4.4. Is the discussion on additionality and the evidence provided consistent with the starting date of the project? If the project activity start date is prior to the validation is it discussed how the CDM was taken into account in the decision to go ahead with the project activity	VVM Para.102b Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.5. is pending closure or CAR #9 and CL #10. Annex 6 also states a timeline of events from the decision CDM consideration was decided. - Evidence is also required on all steps stated, along with additions to the timeline between 2007 and 2009. CAR #11 raised. - From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.5. the discussion on additionality and the evidence provided is consistent with the starting date of the project. **See Annex 3, CAR #9, CL #10 and CAR #11 for more details.** -	**Pending CAR #9** **Closed out.** **CL#10** **Closed out.** **CAR #11** **Closed out.**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
				Y
B.4.5. If an investment analysis has been used, has it been shown that the proposed project activity is economically or financially less attractive than at least one other alternative without the revenue from the sale of CERs?	VVM Para. 106, 107, 109 112ª-c	DR	Not Applicable	**Y**
B.4.6. If a benchmark is used, is it ensured that it is selected in accordance with the requirements of the tool /methodology and it represents standard returns in the market (not linked to the subjective profitability expectation or risk profile of a particular project developer).	VVM Para. 110	DR	Not Applicable	**Y**
B.4.7. If a barrier analysis has been used, has it been shown that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but	VVM Para. 114 115ª-b/116 Ref. 1, 5, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.5. the project activity (PA) followings the guidance of Attachment A to Appendix B (ref. 5). - From the information supplied by the Client in the PDD (revision 5) section B.5. and	**Pending CAR #9, CL #10, CAR #11** **Closed**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
would not have prevented the implementation of at least one of the alternatives?		DR	including the supporting evidence provided in CAR #9, CL #10 and CAR #11 the supporting evidence demonstrates that the proposed project activity faces barriers that prevent the implementation of this type of proposed project activity but would not have prevented the implementation of at least one of the alternatives. **See Annex 3, CAR #9, CL #10 and CAR #11 for more details.** -	**out**
B.4.8. Is the discussion on additionality consistent with the identification of all plausible and credible baseline scenarios?	VVM Para. 105 Ref. 1, 3	DR	From the information supplied by the Client in the PDD (version 4) the project activity (PA) followings the guidance of Attachment A to Appendix B.	**Y**
B.4.9. Do the identified baseline scenarios include technologies and practices that include outputs or services comparable with the proposed CDM project activity. Do they also abide by the same applicable laws and legislations?	VVM Para. 105 Ref. 1, 3, 11, 13, 17, 26b, 26d. 26i, 26y	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the identified baseline scenario include technologies and practices that include outputs or services comparable with the proposed CDM project activity are unclear if it abides by the applicable laws and legislations. (Pending Local Assessor) - ***Local Assessor Comments:*** The project activity is in accordance with all relevant national policies and circumstances. Environmental requirements: The following licenses were issued by FEMA (Fundação Estadual do Meio Ambiente): • Installation license, number 397/2003, issued on 29/12/2003 (ref. 27) • Installation license, number 154, issued on 02/03/2005 (ref. 27) • Installation license, number 1096, issued on 16/05/2008 (ref 27) • Operation license, number 297328/2009, issued on 30/04/2009 (ref. 14)	**Pending Local Assessor** **Y** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			Energy requirements: ANEEL (Agência Nacional de Energia Elétrica) the following licenses were issued: • ANEEL: 28th May 2002 (resolution no. 284) – ref. 27). • ANEEL: 16th November 2004 (dispatch no. 911) – ref. 14). • ANEEL: 5th August 2008 (resolution no. 1490) (ref. 18).	**Y**
B.4.10. Has it been shown that the project is not common practice?	VVM Para. 119ª/b Ref. 1, 10	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.5. is unclear as demonstrating that the proposed project activity is not common practice. - In Mato Grosso state of Brazil, where the proposed project activity is installed, small hydropower plants represent 17,0% of total installed capacity. This information was checked during validation on the ANEEL website (ref. 28) To complete this information, the list of SHP in operation was verified to identify the plants which have the same classification of ARS (classified as PIE – Independent Power Producer) are in the same scale (1 to 15MW of installed capacity). On the validation assessment was verified that there are 42 plants installed in Mato Grosso (with under the limit of 15MW). Among them, only 2 (excluding ARS, CDM projects, and Proinfa plants) are classified as Independent Power Producer. The others plants are classified as Public Service or Producers for Auto-supplying. The two plants are Hidrelétrica Comodoro Ltda (SHP Rio Prata) of 2,13MW, which is exporting energy to the grid since 1994 (ref. 32). This SHP would not be considered in this analysis due to the decision to implement the project activity was taken by 2001. Another SHP, the Camargo Corrêa (Aerossensal), it is a branch of the Camargo Corrêa Group. This SHP had multiplied its installed capacity going from 100KW to 4.2MW (ref. 33) in 2003. Considering these points (main objective, destination of electicity generated and date of construction), there two plants also are distinguished from ARS plant, and did mot face the same barriers or shared the same context.	**Pending CAR #9** **Closed out..** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			In addition, ANEEL authorized (ref. 12) the installation of 3 thermoelectric plants, which will add 49.9MW to the grid. These plants are all thermal plants using fossil fuel and wood biomass). From this discussion, it was demonstrated that the small hydro plants are not a business-as-usual scenario, this information was included in the PDD (version 5), and confirmed on the ANEEL website (*http://www.aneel.gov.br/area.cfm?idArea=15*). The common practice in Brazil it is power generation from hydroelectric plants and thermal fossil fuel plants (ANEEL webpage – *http://www.aneel.gov.br/area.cfm?idArea=15*). From this analysis, the project activity would not have occurred due to at least one of the barriers required for the small scale project activities (ref. 5). From the information supplied in the PDD (version 5) (ref. 1) section B.5. clearly demonstrates that the proposed project activity is not common practice. All information supplied to answer CAR #9 has been reviewed and found satisfactory. **See Annex 3, CAR #9 for more details.** -	
B.4.11. What are they key distinctions between the project activity and any similar projects that are widely used as common practice?	VVM Para. 118, 119c/d Ref. 1, 3	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) reference is made to official data to the extent of small-scale hydroelectric projects in the area. - From the information supplied by the Client in the PDD (version 5) section B.5. clearly demonstrates that the proposed project activity is not common practice. The analysis looks at similar projects on a country scale, and as well as a state scale. Showing the relevant distinctions between each project. **See Annex 3, CAR #9 for more details.** -	**Pending CAR #9** **Closed out.** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.5. Application of the Simplified Methodology				
B.5.1. Has the simplified methodology been applied correctly for determining **baseline emissions**?	VVM Para. 91d Ref. 1, 10, 22	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the approved methodology has been applied and calculated correctly using official figures from the Ministry of Science and Technology for Brazil (MCT) (ref. 22). -	**Y**
B.5.2. Has the simplified methodology been applied correctly for determining **project emissions**?	VVM Para. 90/91d Ref. 1, 4, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.6.1. according to AMS-ID v. 13 (ref. 4) does not consider emissions from the project emissions. Project emissions are there for considered zero.	**Y**
B.5.3. Has the simplified methodology been applied correctly for determining **leakage**?	VVM Para. 91d Ref. 1, 4, 10	DR SV	From the information supplied by the Client in the PDD (version 4) (ref. 1) the methodology states that leakage is considered as zero if equipment used in the project is new. - During the site visit conducted 16th – 18th March and 4th – 7th May 2009 the assessment team confirmed that the equipment used in the construct on the proposed project activity was new and hence leakage is considered as zero. **See Annex 1 for more details.** -	**Pending Site Visit.** **Y**
B.5.4. Where applicable, has the simplified methodology been applied correctly for the **direct calculation of emission reductions?**	VVM Para 88/91d Ref. 1, 4, 10, 35	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the methodology AMS – I.D. version 13, (ref. 4) does not state an equation to calculate ER. Clarification and justification is required as to why the chosen equation was used. CAR #12 raised. **See Annex 3, CAR #12 for more details.**	**CAR #12** **Closed out.**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			-	
B.5.5. Where there is an option between different equations or parameters, has the methodological choices for the project been explained, have they been properly justified and are they correct?	VVM Para. 89/90/91 Ref. 1, 4, 10, 35	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.6.1. where there is an option between different equations or parameters in the methodology, the justifications for the use of those specific choices have been clearly justified and found correct. - From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.6.1. where there is an option between different equations or parameters, the methodological choices for the project have been explained, properly justified and correct. **See Annex 3, CAR #12 for more details.** -	**Pending CAR #12** **Closed out.** **Y**
B.5.6. Are uncertainties in the GHG emissions estimates properly addressed in the documentation?	Ref. 1, 2 11	DR SV	From the information supplied by the Client in the PDD (version 5) (ref. 1) assumptions made in relation to the plant capacity (6.66MW – ref. 11) and the capacity factor (0.785 – ref. 11) have been justified. From the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 documentation was supplied to demonstrate the plant capacity and capacity factor. **See Annex 1 for details for more details.** -	**Pending Site** **Y**
B.6. Ex-ante Data and Parameters Used				
B.6.1. Are the data provided in compliance with the methodology?	VVM Para. 91/67c Ref. 1, 4, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 4) all ex-ante parameters mentioned are in compliance with AMS – I.D. version 13 (ref. 4).	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.6.2. Is all the data derived from official data sources or replicable records and have these been correctly quoted?	VVM Para. 91ª/b Ref. 1, 10, 21-22	DR	From the information supplied by the Client in the PDD (version 4) (ref .4) all data stated, derived from official sources MCT - Ministry of Science and Technology for Brazil (ref. 21-22).	**Y**
B.6.3. Is the vintage of the baseline data correct?	Ref. 1, 10, 21-22	DR	From the information supplied by the Client in the PDD (version 4) (ref. 4) B.6.3. the vintage of the baseline is considered to be correct. If MCT – Ministry of Science and Technology for Brazil release new EF data for 2008 (ref. 21-22), then baseline will have to be corrected inline with this if project is not registered.	**Y**
B.6.4. Is all the data appropriate and correctly applied to the CDM project activity?	VVM Para. 91c Ref. 1, 2, 14	DR SV DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) it is unclear if all data supplied have been correctly applied. Assumptions made in relation to the plant capacity 6.66MW (ref. 14) and the capacity factor 0.785 (ref. 14) have not been. - During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 documentation was supplied to demonstrate the plant capacity and capacity factor. **See Annex 1 for more details** - From the information supplied by the Client in the PDD (version 5) (ref. 1) and the closure of CL#5 (ref. 14) all data provided is appropriate and has been correctly applied to the proposed project activity. **See Annex 3, CL #5 for more details.** -	**Pending Site Visit, CL #5** **Closed out.** **Y** **Y**
B.6.5. Are data and parameters that are not being monitored and remained fixed throughout the crediting period appropriately	VVM Para. 90 Ref. 1, 10	DR	Form the information supplied by the Client in the PDD (version 4) (ref. 1) all parameters at are not being monitored are considered conservative. Assumptions made in relation to the plant capacity (6.66MW) and the capacity factor (0.785) have not been justified.	**Pending Site Visit.**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
assessed, correct, and will they result in conservative estimates?		SV DR	- During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 documentation was supplied to demonstrate the data' appropriateness and correctness to the proposed project activity. - From the information supplied by the Client in the PDD (version 5) (ref. 1) all data and parameters that are not being monitored and remained fixed throughout the crediting period are appropriately assessed, correct, and will result in conservative estimates. -	**Y** **Y**
B.7. Calculation of Emissions Reductions				
B.7.1. Has the simplified methodology been applied correctly for determining **emission reductions**?	VVM Para. 91d Ref. 1, 10, 24	DR SV DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) it is unclear if the approved methodology has been applied to determine correct ER. - During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 an ER calculation spreadsheet was supplied. The spreadsheet (ref.24) was reviewed by the assessment team and the Client was advised of a few corrections to be made to the transparency of the spreadsheet. **See Annex 1, for more details.** - From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.6.3./4. and the closure of CL #5 has correctly applied the approved methodology to determining emission reductions. **See Annex 3, CL #5 for more details.**	**Pending Site Visit, CL #5** **Closed out.** **Y** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			-	
B.7.2. Are the emission reduction calculations documented in a complete and transparent manner?	VVM Para. 91e Ref. 1, 2, 35	DR SV DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) it is unclear as to the transparency of the ER calculations. - During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 an ER calculation spreadsheet was supplied. The spreadsheet (ref. 35) was reviewed by the assessment team and the Client was advised of a few corrections to be made to the transparency of the spreadsheet. **See Annex 1, for more details.** - From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.6.3./4. and the closure of CL #5 has correctly applied the approved methodology to determining emission reductions. **See Annex 3, for more details.** -	**Pending Site Visit, CL#5 Closed out.** **Y** **Y**
B.7.3. Is the projection based on same procedures as used for later monitoring or acceptable alternative models?	Ref. 1, 2, 24	DR	From the information supplied by the Client in the PDD (version 4) section B.3. the projection of ER (ref.24) is based on the same procedure for calculating ER.	**Y**
B.7.4. Is the calculation of the emission reduction correct?	VVM Para. 91e Ref. 1, 10, 21-22, 35	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) it is not possible to determine if the calculations for ER's is correct. - From the information supplied by the Client in the PDD (version 5) (ref. 1) section A.4.3. and B.6.4. have been correctly applied and conform to EB34, Annex 9 (ref.	**Pending CL#5** **Closed out.**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
		DR	10). The ER spreadsheet (ref. 35) was cross-checked with the PDD (ref. 1), MCT and other relevant information (ref. 21-22) obtained from the site visit, conducted on the 16th – 18th March and 4th – 7th May 2009 and found to be correct and inline with AMS – ID v. 13. **See Annex 3, CL #5 for more details.**	**Y**
B.8. Emission Reductions				
B.8.1. Is the form/table required for the indication of projected emission reductions correctly applied?	Ref. 1, 4, 10, 21-22	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) it is not possible to determine if the calculations for ER's is correct. - From the information supplied by the Client in the PDD (version 5) (ref. 1) section A.4.3. and B.6.4. have been correctly applied and conform to EB34, Annex 9 (ref. 10). The ER spreadsheet (ref.24) was cross-checked with the PDD (ref. 1), MCT and other relevant information (ref. 21-22) obtained from the site visit, conducted on the 16th – 18th March and 4th – 7th May 2009 and found to be correct and inline with AMS – ID v. 13 (ref. 4). **See Annex 3, CL #5 for more details.** -	**Pending CL #5 Closed out.** **Y**
B.8.2. Is the projection in line with the envisioned time schedule for the project's implementation and the indicated crediting period?	Ref. 1, 2	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the projection is considered inline with the indicated crediting period.	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.9. Monitoring Methodology				
B.9.1. Does the monitoring methodology provide a consistent approach in the context of all parameters to be monitored and further information provided by the PDD? Are all parameters and data that are available at validation consistent with the simplified methodology. Has this data been interpreted and applied correctly?	VVM Para. 67e Ref. 1, 4	DR	From the information provided by the Client in the PDD (version 4) (ref. 1) the monitoring methodology is consistent with the monitoring methodology set out in AMS – I.D. version 13 (ref. 4). All parameters and data that are available at the time of validation are consistent with the simplified methodology and applied correctly.	**Y**
B.9.2. Does the monitoring methodology apply consistently the choice of the option selected for monitoring both of project and baseline emissions?	Ref. 4, 5, 12, 17-18	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the monitoring methodology complies with the assessment of electricity generation, but no information is mention with regards checking the EF from the MCT (ref. 21-22). Mention is made the EF parameter will be monitored, but no reference is made as to how this will be done. CAR#13 was raised. **See Annex 3, CAR #13 for more details.** -	**CAR #13 Closed out.**
B.10. Data and Parameters Monitored				
B.10.1. Does the monitoring plan in the PDD comply with the simplified methodology? Provide for the collection and	VVM Para. 91ª/91d/121/79	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the monitoring plan is in compliance with the monitoring plan stated in AMS – I.D. version 13, para. 13 (ref. 4).	**Pending Expert Comment**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
archiving of all relevant data necessary for estimation or measuring the emission reductions within the project boundary during the crediting period?	Ref. 1, 4	DR	- ***Expert Comments:*** According to information given in PDD (ref. 1) and AMS.I.D (ref. 4), the source of all generated energy delivered to the grid is hydroelectric the emission reduction is resulted of the energy delivered to the grid* emission factor. - Egy (Electricity generated in year) = the sources will be generated and monitored by Tecnovolt Centrais Elétricas S.A. The energy generation will be monitored by the calibrated energy meters. - Efgrid, CM,y (Emission Factor for the Brazilian interconnected grid): source obtained from Brazilian DNA. The data is determined as ex-post.	**s.** **Y**
B.10.2. Are the choices of project GHG indicators reasonable and in conformance with the requirements set by the simplified methodology applied?	Ref. 1, 4	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1)section B.7.1. all the choices of project GHG indicators are reasonable and in conformance with the require-ments set by the simplified methodology applied (ref. 4). - ***Expert Comments:*** Yes. The GHG indicators (PDD, version 4 – Section B.7.1) are in conformance with methodology approved. -	**Pending Expert Comments** **Y**
B.10.3. Will it be possible to determine the specified project GHG indicators?	Ref. 1	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) all monitoring parameters comply with the monitoring methodology. - The monitored data is possible to determine the GHG emission reductions. The following parameters will be monitored: • Egy = Electricity generated by the renewable technology in year y MWh): this data will be obtained by calibrated meters. The electricity generated will be controlled by the buyer and seller (PP). During verification the energy information will be checked through invoices.	**Pending Expert Comments** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			• *Efgrid,CM,y* = Grid Emission factor (tCO_2/MWh): this data will defined as ex-post. This data will be calculated by Brazilian DNA (MCT and ONS).	
B.10.4. Is the information given for each monitoring variable by the presented table sufficient to ensure the verification of a proper implementation of the monitoring plan?	Ref. 1, 2	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) all information regarding each parameter is sufficient to ensure verification of a proper monitoring plan. - ***Expert Comments:*** See Annex 1, section B.10.3.	**Pending Exper Comments** **Y**
B.10.5. Is the information given for each monitoring variable by the presented table sufficient to ensure the delivery of high quality data free of potential for biases or intended or unintended changes in data records?	Ref. 1, 10, 21-22, 36,	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) all information given regarding the monitoring variables is sufficient to deliver high quality data, free from biases. - ***Expert Comments:*** Egy (MWh) – the data will be generated by calibrated meters. The energy meters will calibrate every 2 years (ref. 36). *Efgrid,CM,y (*tCO_2/MWh) – the data will come from the official source. The Brazilian DNA (MCT/ONS) will issue this data every year. (ref. 21-22)	**Pending Expert Comments** **Y**
B.10.6. Is the monitoring approach in line with current good practice, i.e. will it deliver data in a reliable and reasonably acceptable accuracy?	Ref. 1, 2, 25	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) it is unclear as to whether the current monitoring approach is inline with current good practice. Mention is made in section 7.2. about internal procedures being written before the first crediting period covering essential items regarding training, QA, archiving and so on. Annex 4 to the PDD (ref. 1) makes brief reference to an electronic spreadsheet that will be used to collate and calculate necessary data, along with information regarding electronic data handling (ref. 25). -	**Pending Expert Comments** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			Expert Comments: No Additional Information Required.	
B.10.7. Are all formulae used to determine project emission clearly indicated and in compliance with the monitoring methodology.	PDD Section B.6.2-B.7.1 Ref. 1, 2, 24	DR	Not Applicable - ***Expert Comments:*** Yes. According to AMS.I.D, version 13 (ref. 4) "the monitoring consist of metering the electricity generated by the renewable technology". The formulae used to determine project emission is clearly stated in the PDD version 4, section B.6.1. All the formulas in the spreadsheet (ref. 35) were checked and are compliance with the AMS.I.D, version 13 (ref. 4). **See Annex 3, CL #5 for more details.**	**Pending Expert Comments** **Y**
B.11. Quality Control (QC) and Quality Assurance (QA) Procedures				
B.11.1. Is the selection of data undergoing quality control and quality assurance procedures complete?	VVM Para. 121 Ref. 1	DR	From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.7.2. the emission factor for the grid will be calculated by MCT an official source (ref. 21-22). The QA/QC for this data is high. The energy meters will be calibrated in accordance with Brazilian Standard (ONS – Operador Nacional do Sistema Elétrico) (ref. 36). The QA/QC for this data is expected to be low. **See Annex 3, FAR #17 for more details.**	**FAR#17.**
B.11.2. Is the belonging determination of uncertainty levels done correctly for each ID in a correct and reliable manner?	Ref. 1	DR	**See Annex 2, section B.11.1 for more details.**	**Y**
B.11.3. Are quality control procedures and quality assurance procedures sufficiently	VVM Para 121 Ref. 1	DR	From the information supplied by the Client in the PDD (version 5) (ref. 1) the monitoring plan states how the all data will be captured and analyzed by operators	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
described to ensure the delivery of high quality data?			to ensure the high quality data. **See Annex 3, FAR #17, #18 for more details.**	
B.11.4. Is it ensured that data will be bound to national or internal reference standards?	VVM Para. 86d Ref.1	DR	**See Annex 1, section B.11.1 for more details.**	**Y**
B.11.5. Is it ensured that data provisions will be free of potential conflicts of interests resulting in a tendency of overestimating emission reductions?	VVM Para. 19 Ref. 1	DR	**See Annex 1, section B.11.1 for more details.**	**Y**
B.12. Operational and Management Structure				
B.12.1. Is the authority and responsibility of project management clearly described?	Ref. 1, 10	DR	From the information supplied by the Client in PDD (version 4) (ref. 1) section 7.2 of the PDD the authority and responsibility of project management clearly not described and does not follow guidance set out in EB34, Annex 9 (ref. 10). CAR#14 was raised. **See Annex 3, CAR #14, FAR #17-#18 for more details.**	**CAR #14** **Closed out.**
B.12.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	Ref. 1, 10	DR DR	From the information supplied by the Client in PDD (version 4) (ref. 1) of the PDD the authority and responsibility for registration, monitoring, measurement and reporting clearly not described and does not follow guidance set out in EB34, Annex 9 (ref. 10). - See Annex 2, section B.12.1 for more details. **See Annex 3, CAR #14, FAR #17-#18 for more details.** -	**Pending CAR #14** **Closed out.** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.12.3. Are procedures identified for training of monitoring personnel?	Ref. 1	DR	See Annex 2, section B.12.1 for more details. **See Annex 3, CAR #14, FAR #17-#18 for more details.**	**Y**
B.13. Monitoring Plan (Annex 4)				
B.13.1. Is the monitoring plan developed in a project specific manner clearly addressing the unique features of the CDM activity?	VVM Para. 122a Ref.1	DR	From the information supplied by the Client in the PDD (version 5) (ref. 1) the monitoring plan has been developed in a project specific manner clearly addressing the unique features of the CDM activity.	**Y**
B.13.2. Does the monitoring plan completely describe all measures to be implemented for monitoring all parameter required, including measures to be implemented for ensuring data quality?	VVM Para. 122b Ref.1	DR	**See Annex 3, FAR #17-#18 for more details.**	**FAR #18.**
B.13.3. Does the monitoring plan provide information on monitoring equipment and respective positioning in order to safeguard a proper installation?	VVM Para. 122b Ref.1	DR	**See Annex 3, FAR #17-#18 for more details.**	**Y**
B.13.4. Are procedures identified for calibration of monitoring equipment?	VVM Para. 122ª-c Ref.1	DR	**See Annex 3, FAR #17-#18 for more details.**	**Y**
B.13.5. Are procedures identified for maintenance of monitoring	VVM Para. 122ª-c	DR	**See Annex 3, FAR #17-#18 for more details.**	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
equipment and installations?	Ref.1			
B.13.6. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	VVM Para. 122ª-c Ref.1	DR	**See Annex 3, FAR #17-#18 for more details.**	**Y**
B.13.7. Are procedures identified for dealing with possible monitoring data adjustments and missing data allowing redundant reconstruction of data in case of monitoring problems?	VVM Para. 122ª-c Ref.1	DR	**See Annex 3, FAR #17-#18 for more details.**	**Y**
B.13.8. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	VVM Para.122ª-c Ref.1	DR	**See Annex 3, FAR #17-#18 for more details.**	**Y**
B.13.9. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	VVM Para. 122ª-c Ref. 1	DR	**See Annex 3, FAR #17-#18 for more details.**	**Y**
B.13.10. Describe the ability of the project participants to implement the monitoring plan.	VVM Para. 122c Ref. 1	DR	**See Annex 3, FAR #17-#18 for more details.**	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
B.14. Baseline Details				
B.14.1. Is there any indication of a date when determining the baseline?	Ref. 1, 2	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.8 the baseline was determined 01/12/2005 and revised 12/12/2008.	**Y**
B.14.2. Is this consistent with the time line of the PDD history?	Ref. 1, 2	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section B.8. the determination of the baseline is consistent with the PDD history. ○ Baseline Determination: 12th December 2008 ○ PDD version 4: 17th February 2009 - Following the revised PDD (version 5) section B.8. contains the following information: ○ Baseline Determination: 22nd May 2009 ○ PDD version 5: 22nd May 2009	**Y** **Y**
B.14.3. Is all data required provided in a complete manner by annex 3 of the PDD?	Ref. 1, 2	DR	From the information supplied by the Client in the PDD (version 4) all information provided in Annex 3 is considered consistent with AMS – I.D. version 13 and complete.	**Y**
C. **Duration of the Project / Crediting Period**				
C.1.1. Are the project's starting date and operational lifetime clearly defined and reasonable?	VVM Para. 102ª-c Ref. 1, 10	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section C.1.1./2. clearly defines the start date and operation lifetime as follows: • Start Date: 9th August 2005 • Operational Lifetime: 25 years. - During the validation process CL #8 was raised due the above stated start date not meeting the requirements set out in CDM_GLOS04. Following the closure of CL #8	**Y** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			the revised PDD (version 5) defines the start date and operation lifetime as follows: • Start Date: 4th January 2006 (ref. 29) • Operational Lifetime: 25 years. **See Annex 3, CL #8 for more details.**	
C.1.2. 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)?	VVM Para. 102a Ref. 1, 10	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section C.2. states the following: • 1st July 2009 (or on the date of registration of the CDM project activity, whichever is later - From the information supplied by the Client in the PDD (version 5) (ref. 1) section C.2. states the following: • 1st January 2010 (or on the date of registration of the CDM project activity, whichever is later	**Y** **Y**
C.1.3. Does the project's operational lifetime exceed the crediting period	VVM Para. 102a Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) the projects operational life time is defined as 25 years. The crediting period is stated as 7 years with a possible 2 additional renewals (7*3=21yrs)	**Y**
C.1.4. Does the start date indicate whether this is a new project activity or a pre-existing project activity?	VVM Para. 102ª/ 98 Ref. 1, 10, 11, 29	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the project start date is stated as 27/07/2006 (signing of the Purchase Agreement). Annex 6 of the PDD shows a chronological timeline of events that accorded from the time of CDM consideration. However more information is required to fill in the gaps between 2001-2005 and 2007-2009. - From the information supplied by the Client in the PDD (version 5) (ref. 1) section C	**Pending CL #8 Closed out.**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			states the start date as 4th January 2006 (ref. 29) Following the guidance set out in EB41, Annex 46 (ref. 11) the start date of the project represents a old project and as such Annex 6 of the PDD has been included to conform with EB41, Annex 46 (ref. 11). **See Annex 3, CL #8 for more details.** -	**Y**
D. Environmental Impacts				
D.1.1. Does the project comply with environmental legislation in the host country?	VVM Para. 131/134d Ref. 1, 16, 27	DR SV	From the information supplied by the Client in the PDD (version 4) (ref. 1) section D.1. states that a series of permits are required from the respective environmental agencies. • Preliminary Environmental License (LAP) • Environmental Construction License (LAI) and • Environmental Operation License (LAO). - During the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009 the necessary documents pertaining to the environmental were reviewed. **See Annex 1 for more details.** -	**Pending Site Visit.** **Y**
D.1.2. Has an analysis of the environmental impacts of the project activity been sufficiently described?	VVM Para. 131 Ref. 1, 10	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section D.1. the analysis of the environmental impact for the proposed project activity as been sufficiently described.	**Y**
D.1.3. Are there any Host Party requirements for an Environmental Impact	VVM Para. 131 Ref. 1, 10, 16	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section D.1. the analysis of the environmental impact for the proposed project activity has been undertaken and the proposed project activity has obtained (Environmental	**Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
Assessment (EIA), and if yes, is an EIA approved?			Operation License) LAO no. 297328/2009 (cert. 022834), dated 30th April 2009 (ref. 16)	
D.1.4. Will the project create any adverse environmental effects?	VVM Para. 131 Ref. 1, 16	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section D.2. the environmental impact for the proposed project activity is expected to be very small.	**Y**
D.1.5. Are trans-boundary environmental impacts considered in the analysis?	VVM Para. 131 Ref. 1, 16	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section D.1./2. no trans-boundary environmental impacts are expected.	**Y**
D.1.6. Have identified environmental impacts been addressed in the project design?	VVM Para. 131 Ref. 1, 16	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) section D.1./2. the environmental impacts identified for the proposed project activity have been addressed the proposed project activity has obtained (Environmental Operation License) LAO no. 297328/2009 (cert. 022834), dated 30th April 2009 (ref.16)	**Y**
E. Stakeholder Comments				
E.1.1. Have relevant stakeholders been consulted?	VVM Para. 128a Ref. 1, 23	DR DR SV	From the information supplied in the PDD (version 4) Section E.1. states that the invitation for local stakeholders was established as per Resolution No. 1. - ***Local Comments:*** The local stakeholder's consultation should have complied with the most recent resolution from Brazilian DNA (Resolution nº 7 – 05/03/2008). - Following the site visit conducted by SGS on the 5th May 2009 it was found that the following Letters of invitation and Ars were missing: ○ Missing AR – Municipal Environmental Agency (NovaUbiratã) ○ Missing FEMA letter of invitation and AR. ○ Missing Federal letter of invitation and AR	**Pending Local Comments** **Pending Site Visit.** **CAR #16** **Closed out.**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			CAR#16 was raised. - **See Annex 3, CAR #16 for more details.**	
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	VVM Para. 128a Ref. 1, 38	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) invitation letters were sent to the relevant stakeholders in January 2009. Included in the letter was a website were several documents were made publically available. The website was initiated on the 26th January 2009 and to date (17th February 2009) no comments have been received. **See Annex 1 for more details.**	**Y**
E.1.3. Is the undertaken stakeholder process described in a complete and transparent manner?	VVM Para. 128b Ref. 1, 24	DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the undertaken stakeholder process stated in Section E.1. is described in a complete and transparent manner. **See Annex 3, CAR #16 for more details.**	**Y**
E.1.4. Is a summary of the stakeholder comments received provided?	VVM Para. 128b Ref. 1, 24	DR DR	From the information supplied by the Client in the PDD (version 4) (ref. 1) the Local Stakeholder process is still ongoing. - From the information supplied by the Client in the PDD (version 5) (ref. 1) section E the Local Stakeholder is completed a summary of the stakeholder comments received provided. Details include: o Date the consultation was held; o Location; o Invited Persons; o Contents of the letters o Questions raised and answers given;	**Pending CL #16 Closed out.** **Y**

Checklist Question	Ref. ID	MoV*	Comments	Conclusion/ CARs/CLs
			○ Suggestions/comments of participants; ○ List of attendees. **See Annex 1 for more details.**	
E.1.5. Has due account been taken of any stakeholder comments received?	VVM Para. 128b Ref. 1, 24	DR	No comments received. **See Annex 1, Annex 3, CL #16 for more details.**	**Y**

A.3 Annex 3: Overview of Findings

Findings Overview Summary

	CARs	CLs	FARs
Total Number Raised	13	3	2

Deadline for submission of Response by Client[1]: 26/05/2009

Date:	27.02.2009			Raised by:	Geisa Principe	
Type:	CAR	Number:	#1	Reference:		A.2.1.

Lead Assessor Comment:

The description of the PDD (version 4) does not include all relevant information that provides a clear understanding of the proposed project activity (PA). As per EB34, Annex 9

There is no clear information whether the hydropower is a run-of-river. Furthermore, no evidences or justification is supplied as to the relevance to the three thermoelectric plants were mentioned.

Information regarding these plants dates back to 2003, yet no updated information (recent) has been quoted.

Project Participant Response: **Date:** 22/05/2009

1) Information regarding general description of the project activity was included at Section A.2, pag.3 (First Paragraph).

Footnote 1 was included in PDD to clearly refer information about Mato Grosso State electricity data, regarding paragraph in Section A.2, page 3.
More information about how energy generated, by the project to the grid, avoids CO_2 emissions was inserted in the PDD Section A.2, pag. 3 – *"The energy generated is dispatched into the grid avoiding the use of non renewable sources of energy, such as fossil fuel sources which increase the GHG emissions"*.

2) The information inserted on PDD about the Boletim Energia 97, Section A.2, footnote 2, comes from weblink – http://www.aneel.gov.br/arquivos/PDF/BOLETIM_ENERGIA_097.htm – which informs the authorization of five new thermoelectric plants construction, in Brazil, from October 2003, when current scenario, of the Brazilian electrical system, was the necessity of more power addition. Thermoelectric plants would add more power, although its massive addition of GHG emissions in the electric system. One of those thermoelectric power plants was set in Mato Grosso State, the Rio Claro plant with 7,56MW, of capacity according to the ANEEL Generation Data Source.

3) Information about run of river definition was inserted as footnote 4 in the PDD – *According to Eletrobrás (1999), run-of-river projects are defined as "the projects where the river's dry season flow rate is the same as or higher than the minimum required for the turbines"*

4) More information about the technical description of the project as, river flows, dam area, average annual precipitation, average annual evaporation, etc, was added at Section A.4.2.

Documentation Provided by Project Participant:

[1] Response to all findings with relevant associated documentation to be sent to SGS in one submission.

2) Footnote 1 refers *Mato Grosso State Electricity Data.pdf* at folder CAR 1.

3) Information regarding footnote 2 weblink http://www.aneel.gov.br/arquivos/PDF/BOLETIM_ENERGIA_097.htm is provided in PDF format at folder CAR 1 – *Boletim Energia 97.pdf*, page 2.

Evidences to the Rio Claro plant in Mato Grosso can be found at: http://www.aneel.gov.br/aplicacoes/Empreendimento/ResumoUsina.asp?lbxUsina=26854:S%E3o%20Jos%E9%20do%20Rio%20Claro – This evidence is also provided to the validator at folder CAR 1 – *Rio Claro Plant Resume.pdf*

4) Evidence for run of river definition, footnote 4, can be found at: *http://www.eletrobras.gov.br/EM_Programas_PCH-COM/capitulos.asp*. (*Eletrobras Webpage.pdf* at folder CAR1) – *"Tipos de Pequenas Centrais Hidrelétricas", page 4,* also provided at folder CAR 1, *SHP Types.pdf*, page 4.

5) Information regarding technical information mentioned is available at folder CAR 1, according to the *Engineering Technical Resume.pdf*, page 5 and 10.

Information regarding the turbines is provided in the *HISA Turbines Purchase Offer.pdf* at folder CAR1, page 1 and *2.*
Information regarding the generators is provided in the *Flessak Generators Technical Data.pdf* at folder CAR1, page 1, 2 and 3.

Information Verified by Lead Assessor:

PDD (version 5), dated 22nd May 2009 (ref. 1)
ANEEL – Boletim Energia, dated 11th May 2009 (ref. 12)
Eletrobrás Small Hydro Requirements (n.v.) (n.d.) (ref.13),
ANEEL dispatch license (ref. 14).
Technical Resume (n.d.) (ref. 15)

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** *11/06/2009*

From the information supplied in the revised PDD (version 5) (ref. 1) sectpn A.2. additional information regarding the purpose of project description, the purpose of project activity is contributing of renewable electricity to the Brazilian Interconnected Electricity system. On ANEEL webpage there is a clearly information about Mato Grosso electricity data.

Regarding the three thermoelectrics, the PP provided evidence (ref. 12) which those plants were the current scenario when the decision to implement the project activity was taken. The plants are generating electricity with fossil fuel. The project activity will contribute the emission reduction through renewable energy by small hydropower.

The complete definition (ref. 13) of run-of-river was correctly stated in the PDD (version 5) (ref 1). The project activity has 1.64 Km² reservoir area, on which it is considered as a run-of-river. This information was confirmed at site inspection and ANEEL license (ref. 14).

Further technical description was included in the PDD, version 5 (ref. 1). The project has the installed capacity of 6.66MW, consisting of 2 turbines-generators of 3.33MW each (ref. 15).

CAR #1 closed out.

Acceptance and Close out by Lead Assessor: **Date:** *11/06/2009*

Date:	27.02.2009		Raised by:	Geisa Principe		
Type:	CAR	Number:	#2	Reference:	A.2.2.	

Lead Assessor Comment:

From the information provided in the PDD (version 4), further information regarding the project description, such as the installed capacity, number of equipments etc is required as per EB34, Annex 9.

Project Participant Response: **Date:** *22/05/2009*

1) According to the *Dispatch 911 ANEEL*, information regarding the Installed capacity, assured energy and reservoir area were added to the PDD, Section A.4.2.

2) According to the *Engineering Technical Resume*, information regarding number of equipments was added to the PDD through tables 2, 3 and 4, Section A.4.2.

Documentation Provided by Project Participant:	
1) *Dispatch 911 ANEEL.pdf* can be found at the weblink: http://www.aneel.gov.br/cedoc/dsp2004911.pdf. The document is also attached at folder CAR 2. 2) Information regarding this requirement is set out at folder CAR 1, *Engineering Technical Resume.pdf*.	
Information Verified by Lead Assessor:	
PDD (version 5), dated 22nd May 2009 (ref. 1) Technical Resume (ref. 15)	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** *11/05/2009*
From the information supplied in the revised PDD (version 5) (ref. 1) section A.2. additional technical description (ref. 12 -15) which presents information about engineering plans of ARS plant. CAR #2 closed out.	
Acceptance and Close out by Lead Assessor:	**Date:** *11/05/2009*

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe		
Type:	CAR	Number:	#3		Reference:	A.3.2.
Lead Assessor Comment:						
From the information supplied in the PDD (version 4) Section A.3. is consistent with the information supplied in Annex 1 of the PDD, however the information supplied in Annex 1 is incomplete. Please see EB34, Annex 9 for more details.						
Project Participant Response:				**Date:** 22/05/2009		
Information regarding address, city, location, state, contacts and additional information were added to the PDD, Annex 1.						
Documentation Provided by Project Participant:						
1) Information regarding the address of the project activity is provided by the Operation License ARS.pdf from the Environmental Agency, attached at CAR #3 folder.						
Information Verified by Lead Assessor:						
Revised PDD (version 5), dated 22nd May 2009. (ref. 1) License ARS.pdf (ref. 16).						
Reasoning for not Acceptance or Acceptance and Close Out:				**Date:** 27.05.2009		
From the information supplied by the Client in the PDD (version 5) (ref. 1) section A.3. and Annex 1, was cross checked against the Operational License (ref. 16) is now in compliance with EB34, Annex 9 (ref. 10). CAR #3 was closed.						
Acceptance and Close out by Lead Assessor:				**Date:** 11/06/2009		

Date:	27.02;2009		Raised by:	Andrew Collins/Geisa Principe		
Type:	CAR	Number:	#4		Reference:	A.4.1
Lead Assessor Comment:						
From the information supplied in the PDD (version 4), Section A.4.1 supplies a general description of the project location including longitude and latitude, however the diagram supplied (Figure 1) is too general and not detailed enough to locate the project activity (PA).						
Project Participant Response:				**Date :** *22/05/2009*		
Figure 1 was included in PDD at Section A.4.1.4 with a quick view of the project location.						
Documentation Provided by Project Participant:						
1) *Figure 1* is refereed at folder CAR 4 – *MAP.pdf*.						
Information Verified by Lead Assessor:						
Revised PDD (version 5), dated 22nd May 2009 (ref. 1) Map.pdf. (ref. 17)						
Reasoning for not Acceptance or Acceptance and Close Out:						**Date:** 27.05.2009

From the information supplied in the revised PDD (version 5) section A.4.1.4 includes a more detailed diagram (ref.17). CAR #4 closed.
Acceptance and Close out by Lead Assessor: **Date:** *17/06/2009*

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe	
Type:	CL	Number:	#5	Reference:	B.4.6

Lead Assessor Comment:

From the information supplied in the PDD (version 4), section A.4.3. pertaining to the ER emissions it is unclear if ER stated have been correctly applied.

Please submit an ER spreadsheet, clearly showing how Ers were obtained, as well as its evidence for estimation.

Please also note that the table for indicating projected emission reductions does not meet the requirements set out in EB34, Annex 9. Please amend accordingly.

Project Participant Response: **Date:** *22/05/2009*

1) Emissions reductions spreadsheet was provided to clarify ER calculation. Changes related with the references of the calculus and with the updating of the Brazilian Emission Factor (using values for year 2007) were made in the spreadsheet, which modify the Ers. This modification was updated in the PDD, Section A.4.3 and Section B.6.4.

2) Table for indicating estimated emission reductions, was adjusted to the correct format.

Documentation Provided by Project Participant:

1) Emission Reduction Spreadsheet is provided in folder CL5 – *Ers PDD ARS 22 05 2009.xls*.

Information Verified by Lead Assessor:

Revised PDD (version 5), dated 22nd May 2009 (ref. 1)
ER Spreadsheet, dated 22nd May 2009 (ref. 35)

Reasoning for not Acceptance or Acceptance and Close Out: **Date:** *28.05.2009*

From the information supplied in the PDD (version 5) (ref. 1) section A.4.3. and B.6.4. have been correctly applied and conform to EB34, Annex 9 (ref. 10).

The ER spreadsheet (ref. 35) was cross-checked with the PDD (ref. 1), MCT and other relevant information obtained from the site visit, conducted on the 16th – 18th March and 4th – 7th May 2009 and found to be correct and inline with AMS – ID v. 13 (ref. 4).

CL #5 closed.

Acceptance and Close out by Lead Assessor: **Date:** *12/06/2009*

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe	
Type:	CAR	Number:	#6	Reference:	B.1.3. to B.1.6, B.10

Lead Assessor Comment:

From the information supplied by the Client in the PDD (version 4), Section B.2. supplies a brief justification for the choice of project category. The section should clearly justify the project type and catergory as well as demonstrate how the project meets small-scale requirements and how the project will remain within those limits.

Please see EB34, Annex 9 for more guidance.

Project Participant Response: **Date:** *22/05/2009*

As per AMS ID version 13, the section Technology/measure was inserted in the PDD Section B.2. Each paragraph and its applicability condition were analyzed in PDD according to project application.

Documentation Provided by Project Participant:

At folder CAR #2, *Dispatch 911 ANEEL.pdf* confirms power plant capacity, 6.66 MW, lower than maximum required to set the project as small scale, 15 MW.

Information Verified by Lead Assessor:

Revised PDD (version 5), dated 22nd May 2009 (ref. 1) Dispatch 911 Aneel.pdf, dated 16th November 2004 (ref. 14)	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** *28.05.2009*
From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.2. now meets the requirements set out in EB34, Annex 9 (ref. 10). The applicability criterions are explained and were checked during site visit: *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.* According to ANEEL permission (ref. 14, 18 27), the project activity will supply electricity through renewable energy to the Brazilian National Interconnected System. 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 fuel1, the capacity of the entire unit shall not exceed the limit of 15MW.* The project activity is eligible under this category owing to the installed capacity is 6.66MW (ref. 14, 16, 27). Furthermore, it will generate renewable energy to the grid. 3) *Combined heat and power (co-generation) systems are not eligible under this category.* The project activity is composed of a small hydropower of 6.66MW installed capacity (ref. 14, 16, 27). There is no co-generation system under this project. *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 distinct2 from the existing units.* The project activity refers to a new hydropower with 6.66MW of installed capacity (ref. 14, 16, 18, 27). *6) 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.* The project activity will not retrofit or modify an existing facility. It is new hydropower with 6.66MW of installed capacity (ref. 14, 16, 18, 27). CAR #6 closed.	
Acceptance and Close out by Lead Assessor:	**Date:** *12/06/2009*

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe	
Type:	CAR	Number:	#7	Reference:	B.3.1.
Lead Assessor Comment:					
From the information supplied by the Client in the PDD (version 4), Section B.4. clearly follows the steps for selecting a baseline and its development as per methodology AMS – I.D. version 13. However more specific information is required regarding electricity generation. Reference is made to Tecnovolt Centrais Eletricas S.A. and a value of 45,798MWh/yr. As per EB34, Annex 9 it is required that all assumptions made as clearly explained and justified in a transparent manner to allow determination of baseline emissions. See EB34, Annex 9 for more details.					
Project Participant Response:			**Date:** *22/05/2009*		

Information regarding the electricity generation is provided in Section B.6.3, where there is a table that shows how the energy generated by the project is calculated. A footnote was inserted in order to facilitate the visualization of this information in PDD. The installed capacity and assured energy are described in the Section A.4.2, as the factor capacity is described at the Section B.6.3. Installed capacity: 6.66 MW Assured Energy: 5.23 MW (Assured Energy is the energy delivered to the grid, a quantity stated by ANEEL and defined in Purchase Power Agreements).
Documentation Provided by Project Participant:
The Installed capacity and the Assured Energy can be referred through the *Dispatch 911 ANEEL.pdf*, at folder CAR 2.
Information Verified by Lead Assessor:
Revised PDD (version 5), dated 22nd May 2009 (ref. 1) Dispatch 911 ANEEL.pdf, dated 16th November 2004 (ref. 14)
Reasoning for not Acceptance or Acceptance and Close Out: **Date:** *28.05.2009*
From the information supplied by the Client in the PDD (version 5) section B.4. (ref. 1) clearly meets the requirements set out in EB34, Annex 9 (ref. 10). The electricity generation calculation was based on the installed capacity and assured energy witch was determined by ANEEL (ref. 14). CAR #7 closed out.
Acceptance and Close out by Lead Assessor: **Date:** *16/06/2009*

Date:	27.02.2009		Raised by:	Geisa Principe	
Type:	CL	Number:	#8	Reference:	B.4.4
Lead Assessor Comment:					
From the information provided by the Client in the PDD (version 4), the installation license (397/2003) shall not be considered the starting date, by the reason of it does not show the real action of the project activity. In the section C.1.1 (PDD, version 4), the starting date is the Purchase Agreement signed on 27/07/2006. Clarify which document defines the real starting date.					
Project Participant Response: **Date:** *22/05/2009*					
The starting date was changed by the earliest date at which real action of the project activity begins. This date correspond to the *Generators Purchase Contract*. This information was updated in Section B.5, C.1.1 and Annex 6 (timeline) from the PDD, where this date has been published.					
Documentation Provided by Project Participant:					
The starting date comes out from the G*enerator Purchase Contract ARS.pdf* signed, available at folder CL #8.					
Information Verified by Lead Assessor:					
Revised PDD (version 5), dated 22nd May 2009 (ref. 1) Generator Purchase Contract, dated 4th January 2006 (ref. 29)					
Reasoning for not Acceptance or Acceptance and Close Out: **Date:** *28.05.2009*					
From the information supplied by the Client in the PDD (version 5) the start date of the proposed project activity has been amended verified to meet the requirements as per CDM_GLOS04. CL #8 closed.					
Acceptance and Close out by Lead Assessor: **Date:** *16/06/2009*					

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe	
Type:	CAR	Number:	#9	Reference:	B.4.3.
Lead Assessor Comment:					
From the information supplied by the Client in the PDD (version 4), Section B.5. mentions the following: a) Reference is made to guidelines for completion of a PDD, this reference is for guidance for large-scale projects and not small-scale projects. EB34, Annex 9 is for small-scale project. b) Reference is made to a guidance stating the requirements for the start date of a project. EB34, Annex 9 makes no reference to such statement. Reference should be taken from CDM Glos04. c) Reference is made to CDM PDD version 6.2. This is reference to guidance for large-scale projects and not small-scale projects. See EB34, Annex 9 for more details.					

d) Footnote 5 makes reference to a web-link accessed in 2007. When web-link was accessed the reference information was last updated as 9th February 2009 – Checked 25th February 2009. It was not possible to clarify original source.
e) It is unclear as to the source of the information contained in table 2, it is advisable to clearly reference each figure and table. Each source can be cited (e.g. Aneel) with further elaboration provided in Annex 5.
f) Web-link in footnote 7 did not produce the required data as shown in the PDD (version 4). If web-link is the original insert in version 1 of the PDD please clarify information exists and update link.
g) Assumptions make in "Other barriers" need to be explained and substantiated

i. Project located in isolated, undeveloped area
ii. Deficit of infrastructure
iii. Sponsor had to develop some facilities
iv. No qualified workers
v. Raw materials come from hundreds of kilometers away

Project Participant Response: | **Date:** *22/05/2009*

a) This paragraph was excluded from PDD in order to follow small scale guidelines.
b) This paragraph was excluded from PDD in order to follow CDM Glos04.
c) Reference made from large scale projects was excluded from PDD.
d) Information on PDD, Section B.5., *Prevailing Business Practice*, was updated in order to keep information referable and trustful.
As the data in the PDD came from ANEEL report (*Brazilian Generation Data*) which is often updated and no record was made of this information, no supporting documentation can be provided. Because of that, the data was updated and the webpage recorded.
e) The figures and Tables in section B.5 were removed and others were included in order to better understand the prevailing practice barrier including the sources of data *(Source: ANEEL)*.
f) The footnote 7 was removed together with the figure for which it was the reference.
g) Information regarding this issue was verified during the validation visit, occurred at 16 to 18 March 2009. The validator team could check out the information contained on PDD.

Documentation Provided by Project Participant:

d) Information from the *Brazilian Generation Data (27_April_2009).pdf* from ANEEL at folder CAR 9 was used to refer this data.
e) Information regarding the prevailing practice analyzes is provided in the folder *prevailing practice* at folder CAR 9.

Information Verified by Lead Assessor:

Revised PDD (version 5), dated 22nd May 2009 (ref. 1)
ARS Common Practise.xls, dated 21st May 2009 (ref. 23)
BIG – Brazil, dated 26th May 2009 (ref. 24)
BIG – Matto Grosso, dated 26th May 2009 (ref. 25)
BIG – Matto Grosso – Capacity, dated 26th May 2009 (ref. 26)
BIG – Brazil – Capacity, dated 26th May 2009 (ref. 28)

Reasoning for not Acceptance or Acceptance and Close Out: | **Date:** *28.05.2009*

From the information supplied by the Client in the PDD (version 5) section B.5. (ref. 1) was assessed as follows:

a) Confirmed exclusion from revised PDD. (ref. 1)
b) Confirmed exclusion from revised PDD. (ref. 1)
c) Confirmed exclusion from revised PDD. (ref. 1)
d) Evidence supplied in the revised PDD and Prevailing Business Practice (ref. 23) was found to provide more clarity and support to the demonstration of additionality (ref. 24-26, 28).
e) Evidence supplied in the revised PDD and Prevailing Business Practice (ref. 23) was found to provide more clarity and support to the demonstration of additionality (ref. 24-26, 28).
f) Confirmed exclusion from revised PDD (ref. 1).
g) The assessment team verified the assumptions during the site visit to the site on 16th – 18th March 2009.

See Section 4.7.1 of the Validation Report.

CAR #9 closed.	
Acceptance and Close out by Lead Assessor:	**Date:** *16/06/2009*

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe	
Type:	CL	Number:	#10	Reference:	B.4.3.

Lead Assessor Comment:

From the information supplied by the Client in the PDD (version 4), Section B.5. mentions the following:

a) Project activity was initiated on 27th July 2006 with the signing of the Purchase Agreement. Please show evidence of this.

b) Board meeting was held on 10th September 2001. Please supply evidence. Also please clarify what happened between 2001 and 2005. Mention is made regarding all the available data in 2007 that even without CDM consideration the project was still not viable. It is unclear what was actively done from 2005 and 2007 and why a lot of the data present is from 2005. Nearly 4 years old in the current version of the PDD.

c) Justification for prevailing practice is general and it is unclear what was actively done with regards the following schemes, PCH-COM, PROFINA, PCH-COM v. 2. Please provide clear transparent information. Demonstrate how the project activity faced this barrier.

d) There is no information regarding the analysis of prevailing practice based on the participation of small hydro power plants. The PDD did not discuss what extent similar and operational projects other than CDM project activities have been undertaken in the defined region.

e) It is unclear what the statement relating to Footnote 6 is trying to get across, emphasis should be on small-scale hydro projects and what the two projects mentioned equated to in terms of MW sold.

Project Participant Response:	**Date:** *22/05/2009*

a) Date of project activity was changed. Please refer to CL 8.

b) Board meeting held on 10th September 2001 has initiated the CDM consideration when affirms that the company shall participate in the carbon credit project under the clean development mechanism. This evidence was verified during the validation visit.
More information about the period 2001 – 2005 was included in the PDD timeline, Annex 6. More information regarding the period after 2007 was included to facilitate analysis of the project chronology.

c) The additionality assessment was reformed in order to better understand the prevailing practice analysis, providing more evidences and also adding more explanation which shows that the project activity would not have occurred anyway due to the barriers presented and therefore the proposed project activity is additional.

d) As was explained in the item before, the additionality assessment was reformed adding more information and discussion regarding similar and operational projects.

e) Footnote 6 and the paragraph for which it referred was excluded from PDD in order to keep information in PDD trustful and referable.

Documentation Provided by Project Participant:

a) Please consult CL #8 for evidences to this issue.

b) Board meeting held on 10th September 2001 can be found at CL #10 folder, as *Minute of Partners.pdf* and as *Meeting of Partners_Eng.pdf*.
Please verify an extra folder *References_Annex 6 PDD ARS* all references about these issues (*and b*).

c) Evidences for the prevailing practice analysis were included in the folder CAR #9. On the other hand, supporting documentation for the explanation in the barriers is provided in the folder *Additionality* at folder CL #10 and in the *References_Annex 6 PDD ARS* folder.

Information Verified by Lead Assessor:

Generator Purchase Contract.pdf, dated 15th February 2006 (ref. 29)
Meeting of Partners_Eng.pdf, dated 10th September 2001 (ref. 30)
References_Annex 6 PDD ARS.zip, dated (n.d.) (ref. 27)
Additionality.zip, dated (n.d.) (ref. 31)

Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** *28.05.2009*

In accordance with Attachement A of Appendix B of the Simplified M&P for the Small-Scale CDM Project Activities, the barriers analyses could be carried out in order to demonstrate project additionality.
From the information supplied by the Client in the PDD (version 5) section B.5. was assessed as follows:

a) Review of Generator Purchase Contract, dated 4th January 2006 confirms correct date (ref.16).

b) Review of the revised PDD along with additional information supplied on References_Annex 6 PDD ARS.zip confirms statements made in the original PDD (version 4).

From 2001, the PP had looked for resources to implement the project activity. In 2001, the project owners had a meeting to discuss the implementation of the ARS plant and how the obtain the resources for its implementation.
Mrs. Flessak (project owner) mentioned that he had heard about the incentives from Carbon Credits through his friend that works at PriceWaterHouseCoopers (information gotten by interview on 5 May 2009).
On 10 September 2001 was held a meeting which the incentives from carbon credits was discussed in order to obtain resources from carbon credits to implement the project activity (ref.16).
On 28 May 2002, ANEEL issued the authorization to explore the ARS plant (ref.26b). As the PP did not have the cash to start the implementation of the project, a new chronogram of implementation was requested to ANEEL (27/03/2003 – ref.c). While the PP was looking for the consultant to develop their PDD, at the same time the PP was requesting the environmental license (29/12/2003 – ref.26d) and financing from the bank (25/04/2004 – ref.26e). Others actions were taken to obtain the financing (ref.26f,h) such as new requests to the others banks, excessive guarantee required etc,
On 4th January the generator was bought (ref.16). Without guarantees that the financing would be approved, the PP decided to take a risk to buy that equipment. From March 2006 the PP and MGM consultant started evaluation of the project activity (ref.26k). Confident that the carbon credits could help the implementation of the project activity, the PP acquired the turbine (27/07/2006 – ref.15). From that time many actions were taken to proceed with the project activity as shown in the annex 6 – PDD (version 5).

c) Review of the revised PDD provides better understand the prevailing practice analysis, providing more evidence and also adding more explanation which shows that the project activity would not have occurred anyway due to the barriers presented.

d) The references mentioned in the PDD (version 5) to support the discussion of Prevailing Business Practice were included. Barrier die to "Prevailing Practice" – where prevailing practice or existing regulatory or policy requirements would have led to implementation of a technology with higher emissions was used by project participant to discuss the additionality. The discussion was based on the small participation of small hydro power plants in Brazilian power market (less than 2.55% of the total energy in Brazil) and trends of the Brazilian power generation sector.

In Mato Grosso state of Brazil, where the proposed project activity is installed, small hydropower plants represent 17,0% of total installed capacity. This information was checked during validation on the ANEEL website (Energy National Agency/BIG – Banco de Informação sobre Geração – brazilian database of power http://www.aneel.gov.br/aplicacoes/capacidadebrasil/capacidadebrasil.asp). To complete this information, the list of SHP in operation was verified to identify the plants which have the same classification of ARS (classified as PIE – Independent Power Producer) are in the same scale (1 to 15MW of installed capacity). On the validation assessment was verified that there are 42 plants installed in Mato Grosso (with under the limit of 15MW). Among them, only 2 (excluding ARS, CDM projects, and Proinfa plants) are classified as Independent Power Producer. The others plants are classified as Public Service or Producers for Auto-supplying. The two plants are Hidrelétrica Comodoro Ltda (SHP Rio Prata) of 2,13MW, which is exporting energy to the grid since 1994 (ref.29). This SHP would not be considered in this analysis due to the decision to implement the project activity was taken by 2001. Another SHP, the Camargo Corrêa (Aerossensal), it is a branch of the Camargo Corrêa Group. This SHP had multiplied its installed capacity going from 100KW to 4.2MW (ref.31) in 2003. Considering these points (main objective, destination of electicity generated and date of construction), there two plants also are distinguished from ARS plant, and did mot face the same barriers or shared the same context.
In addition, ANEEL authorized (ref.27) the installation of 3 thermoelectric plants, which will add 49.9MW to the grid. These plants are all thermal plants using fossil fuel and wood biomass).
From this discussion, it was demonstrated that the small hydro plants are not a business-as-usual scenario, this information was included in the PDD (version 5), and confirmed on the ANEEL website (*http://www.aneel.gov.br/area.cfm?idArea=15*).
The common practice in Brazil it is power generation from hydroelectric plants and thermal fossil fuel plants (ANEEL webpage – *http://www.aneel.gov.br/area.cfm?idArea=15*). From this analysis, the project activity would not have occurred due to at least one of the barriers required for the small scale project activities (ref.3).

e) Review of the revised PDD provides better understand the prevailing practice analysis, providing more evidence and also adding more explanation which shows that the project activity would not have occurred anyway due to the barriers presented.

f) Confirmed exclusion from the revised PDD.

CL #10 closed out.

Acceptance and Close out by Lead Assessor:	**Date:** *16/06/2009*

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe	
Type:	CAR	Number:	#11	Reference:	B.4.4.

Lead Assessor Comment:

From the information supplied in the PDD (version 4) evidence regarding projects start date till project validation is unclear. The timeline stated in Annex 6 stops on 18th June 2007 after the Bank Load Contract. However information on the UNFCCC website shows that the project is currently undergoing its third ISHC.

It is unclear what has been happening with the project between 2007 and 2009 since the first ISHC. Please provide information regarding how the project has been actively pursuing CDM.

For example First ISHC, site visit, methodology expired, PDD re-written to take into account new meth version, PDD re-published for ISHC etc\.

Project Participant Response:	**Date:** *22/05/2009*
Timeline was completed with more information about what happened between 2007 and 2009 (Annex 6 of the PDD). Information regarding first ISHC, stakeholders consultation process, validation visits, methodology expiration, new EB rules, etc were included in the timeline, Annex 6 of the PDD.	
Documentation Provided by Project Participant:	
All data and information regarding Timeline, Annex 6 is provided at folder *References_Annex 6 PDD ARS*.	
Information Verified by Lead Assessor:	
Revised PDD (version 5), dated 22nd May 2009 (ref. 1) References_Annex 6 PDD ARS, dated (n.d.) (ref. 27)	
Reasoning for not Acceptance or Acceptance and Close Out:	**Date:** *28.05.2009*
From the information supplied by the Client in the PDD (version 5) (ref. 1) Annex 6 has been updated with information discussed and reviewed at the site visit conducted 16th – 18th March 2009 and 4th – 7th May 2009. January 2007 the local stakeholder's consultation had initiated (ref. 27). April 2007 the validation process started. The client send the PDD to DOE (ref. 27), from that the global stakeholders consultation was held (ref. 27) May and June 2007, the financing was approved by Caixa Econômica Federal (bank), and the contract signed (ref. 27). From July 2007 to 2009 the validation has been carried out (ref. 27). CAR #11 closed out.	
Acceptance and Close out by Lead Assessor:	**Date:** *16/06/2009*

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe	
Type:	CAR	Number:	#12	Reference:	B.5.4.
Lead Assessor Comment:					
From the information supplied by the Client in the PDD (version 4). (ref. 1) All equations used should come from approved methodologies. The equation used to calculate the emission reductions is unclear as it has not come from AMS – ID v. 13 (ref. 4). Equations should be transparent providing a clarification and justification on how the equation came about and why it was used. See EB34, Annex 9 (ref. 10) for more details.					
Project Participant Response:				**Date:** *22/05/2009*	
1) Equations in PDD were numbered, completed and replaced by equations according to AMS-ID, version 13 in Section B.6.3 and B.6.1. 2) Leakage emissions, project emissions, baseline emissions and emission reductions were clarified in Section B.6.1 and B.6.3.					
Documentation Provided by Project Participant:					
Revised PDD version 5, dated 22nd May 2009					
Information Verified by Lead Assessor:					
Revised PDD (version 5), dated 22nd May 2009. (ref. 1)					
Reasoning for not Acceptance or Acceptance and Close Out:				**Date:** *28.05.2009*	
From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.6.1. all equation come from the approved methodology and now meet the requirements set out in EB34, Annex 9 (ref. 10). The Ers calculation spreadsheet (ref. 35) was provided. All date and calculus is in accordance with AMS.ID, version 13 (ref. 4). CAR #12 closed out.					
Acceptance and Close out by Lead Assessor:				**Date:** *16/06/2009*	

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe	
Type:	CAR	Number:	#13	Reference:	B.9.2. /
Lead Assessor Comment:					

From the information supplied in the PDD (version 4) the monitoring methodology complies with the assessment of electricity generation, but no information is mentioned with regards checking the EF from the MCT. $EF_{grid,CM,y}$ is the parameter mentioned that will be monitored as this information is derived from the MCT how often will this be checked and how will the amended figure be implemented.
Project Participant Response: **Date:** *22/05/2009*
Information was included at Section B.6.2 (*Data and parameters that are available at validation)* and B.7.1 *(Data and parameters monitored)*, regarding $EF_{grid,CM,y}$, "*This value is yearly updated according to MCT calculations for the Brazilian electric system*".
Documentation Provided by Project Participant:
Brazilian emission factor is annually updated and electrical system is monitored all the time. Thus, MCT can report a new emission factor every year, available at: *http://www.mct.gov.br/*.
Information Verified by Lead Assessor:
Revised PDD (version 5), dated 22nd May 2009 (ref. 1)
Reasoning for not Acceptance or Acceptance and Close Out: **Date:** *28.05.2009*
From the information supplied by the Client in the PDD (version 5) (ref. 1) section B.6.2. clearly demonstrates how $EF_{grid, CM, y}$ will be monitored and updated as necessary. CAR #13 closed out.
Acceptance and Close out by Lead Assessor: **Date:** *16/06/2009*

Date:	27.02.2009		Raised by:	Andrew Collins/Geisa Principe	
Type:	CAR	Number:	14	Reference:	B.12.1. / B.12.2. /

Lead Assessor Comment:
From the information supplied in the PDD (version 4), Section B.7.2. is missing any information regarding authority, responsible person for project management, registration, monitoring etc. The section requires a detailed description of monitoring plan, clearly describing responsibilities. Please see EB34, Annex 9 for more details.
Project Participant Response: **Date:** *22/05/2009*
Information regarding monitoring procedures, monitoring plan, operational and management structure to be implemented, etc were included in the Section B.7.2 of the PDD. All procedures will be according to the *Descriptive Memorial* of the supervisory monitoring system and according with ONS (National Dispatch Center).
Documentation Provided by Project Participant:
Information regarding monitoring plan are available at folder CAR 14: 1) *Descriptive Memorial.pdf* has information about the supervisory monitoring system, available at folder CAR 14. 2) *Submodulo 12.1 v10.0.pdf* states general information about SMF (supervisory system), *Submodulo 12.2 v10.0.pdf* regards procedures for installation of the equipments for SMF, *Submodulo 12.3 v10.0.pdf* regards procedures for the maintenance (calibration and others parameters) of the SMF. All of those documents are provided at folder CAR 14.
Information Verified by Lead Assessor:
PDD (version 5), dated 22nd May 2009 (ref. 1) Descriptive Memorial (ref. 37) Submodulo 12.1 from NOS – Operador Nacional do Sistema Elétrico (ref. 36)
Reasoning for not Acceptance or Acceptance and Close Out: **Date:** *11/06/2009*
The Descriptive Memorial (ref. 37) and Submodulo 12.1 from ONS – Operador Nacional do Sistema Elétrico (ref. 36) states the calibration of energy meters will be carried out every 2 years. Regarding responsible for project manager, monitoring etc, the PDD (version 5) (ref. 1) stated the complete information, however it was not implemented yet, due to the project activity is under construction. The PP established correctly the calibration procedure for the energy meters conform recommend by National Energy Requirements (ONS – Operador Nacional do Sistema Elétrico). CAR #14 closed out.
Acceptance and Close out by Lead Assessor: **Date:** *11/06/2009*

Date:	27.02.2009		Raised by:	Geisa Principe	
Type:	CAR	Number:	#15	Reference:	Local checkclist/
Lead Assessor Comment:					
According to the PDD version 4, section B.7.2. states the metering will be calibrated every 3 years; however there is a Brazilian requirement (ONS – submódulo 12.3) that establishes the periodicity of calibration every 2 years.					
Project Participant Response:				**Date :** *22/05/2009*	
The calibration frequency was corrected in the PDD, according with ONS *Submodulo 12.3_v10.0.*					
Documentation Provided by Project Participant:					
Submodulo 12.3_v10.0.pdf is available at folder CAR 14 and information regarding calibration is located at page *16, Annex 1*.					
Information Verified by Lead Assessor:					
PDD, version 5, dated 22nd May 2009 (ref. 1)					
Reasoning for not Acceptance or Acceptance and Close Out:				**Date:** 11/06/2009	
From the information supplied in the revised PDD (version 5) (ref. 1) section B.7.2. the error typing was corrected. CAR#15 closed out.					
Acceptance and Close out by Lead Assessor:				**Date:** 11/06/2009	

Date:	27.02.2009		Raised by:	Geisa Principe	
Type:	CAR	Number:	#16	Reference:	*Local Checklist*
Lead Assessor Comment:					
From the information supplied in the PDD (version 4) Section E.1. states that the invitation for local stakeholders was established as per Resolution No. 1. The local stakeholder's consultation should have complied with the most recent resolution from Brazilian DNA (Resolution nº 7 – 05/03/2008). Following the site visit conducted by SGS on the 5th May 2009 it was found that the following Letters of invitation and Ars were missing: ○ Missing AR – Municipal Environmental Agency (NovaUbiratã) ○ Missing FEMA letter of invitation and AR. ○ Missing Federal letter of invitation and AR					
Project Participant Response:				**Date :** *22/05/2009*	
Information regarding local stakeholders consultation process, as per resolution 1 and the most recent resolution 7 of the Brazilian DNA, was included in the PDD. The Local Stakeholders consultation process was carried out according to the last resolution of the Brazilian DNA, however, Project sponsor has not received yet the Acknowledgement Receipt (Ars) from the entities listed above, in Lead Assessor Comment (AR – Municipal Environmental Agency (NovaUbiratã), AR – FEMA, AR – Federal Public Ministry), Project Sponsor is still waiting for the response from the postal company.					
Documentation Provided by Project Participant:					
Invitation Letters and received Acknowledgement of Receipt of the stakeholder invited (called Ars in Brazil) are available at folder CAR #16. The comments received are also available in folder CAR #16.					
Information Verified by Lead Assessor:					
Revised PDD (version 5), dated 22nd May 2009 (ref. 1) The following local stakeholders were invited (ref. 38): ○ AR – Municipal Environmental Agency (NovaUbiratã) – 27th January 2009. ○ AR – FEMA – letter sent on 27th January 2009. ○ AR – Federal Public Ministry – letter sent on 6th May 2009.					
Reasoning for not Acceptance or Acceptance and Close Out:				**Date:** *28.05.2009*	
From the information supplied by the Client in the PDD (version 5) section E.1. includes information regarding local stakeholders consultation process, as per resolution 1 and the most recent resolution 7 of the Brazilian DNA, was included in the PDD. The invitation to the local stakeholders was appropriately carried out. CAR #16 closed out. .					

Acceptance and Close out by Lead Assessor:	**Date:** *16/06/2009*

Date:	11/06/2009		Raised by:	Geisa Principe	
Type:	FAR	Number:	#17	Reference:	Local Checklist
Lead Assessor Comment:					
At validation site visit the energy meters were not installed. During verification the follow information should be confirmed by assessment team: - Serial numbers of energy meters - Calibration certificate - Periodicity of calibration					

Date:	11/06/2009		Raised by:	Geisa Principe	
Type:	FAR	Number:	#18	Reference:	Local Checklist
Lead Assessor Comment:					
Following information should be implemented before crediting period: • Internal auditing • Training • Responsibilities for MR • Achieving time Internal procedures (training, calibration, auditing, maintenance, working instructions, etc).					

A.4 Annex 4: Team Members Statements of Competency

Statement of Competence

Name: Geisa Principe SGS Affiliate: Brazil

Status

- Product Co-ordinator ☐
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☒

	Validation	Verification
Local Assessor	☒	☒
Lead Assessor	☒	☒
Assessor / Trainee Lead Assessor	☐	☐

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	☒
2. Energy Distribution	☐
3. Energy Demand	☐
4. Manufacturing	☐
5. Chemical Industry	☐
6. Construction	☐
7. Transport	☐
8. Mining/Mineral Production	☐
9. Metal Production	☐
10. Fugitive Emissions from Fuels (solid,oil and gas)	☐
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	☐
12. Solvent Use	☐
13. Waste Handling and Disposal	☒
14. Afforestation and Reforestation	☐
15. Agriculture	☐

Approved Member of Staff by: Siddharth Yadav Date: 15/01/2009

See Annex 5 for more details.

A.5 Annex 5: Amendments to the Validation Report following Brazilian LoA.

The following amendments are made to the report following the issue of the Letter of Approval from the Brazilian DNA:

Section 2.4. – The Names and Roles of the Validation Team Members

From the 14th August 2009 Fabian Goncalves took over responsibility of the validation assessment. The new team is reflected below.

Name	Role	Affiliate
Fabian Goncalves	Lead Assessor (from 14.08.2009)	SGS Brazil
Geisa Principe	Lead Assessor (until 14.08.2009)	SGS Brazil
Andrew Collins	Assessor (Trainee)	SGS Brazil

Section 4.1. – Approval

Receipt of the LoA (ref. 2) from the Brazilian DNA was received on 20th August 2009. The LoA (ref. 2) was signed by Sergio Machado Rezende, President of the Interministerial Commission on Global Climate Change for the Ministry of Science and Technology of the Federative Republic of Brazil, dated 18th August 2009.

Annex 4 – Statements of Competency

Name: Fabian Goncalves SGS Affiliate: Brazil

Status

- Product Co-ordinator ☒
- Operations Co-ordinator ☐
- Technical Reviewer ☐
- Expert ☒

	Validation	Verification
- Local Assessor	☒	☒
- Lead Assessor	☒	☒
- Assessor / Trainee Lead Assessor	☒	☒

Scopes of Expertise

1. Energy Industries (renewable / non-renewable) ☒
2. Energy Distribution ☐
3. Energy Demand ☐
4. Manufacturing ☒
5. Chemical Industry ☐
6. Construction ☐
7. Transport ☐
8. Mining/Mineral Production ☐
9. Metal Production ☐
10. Fugitive Emissions from Fuels (solid,oil and gas) ☐
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride ☐
12. Solvent Use ☐
13. Waste Handling and Disposal ☒
14. Afforestation and Reforestation ☐
15. Agriculture ☐

Approved Member of Staff by Siddharth Yadav Date: 06/02/2009