VALIDATION REPORT

Energest S.A.

UHE Mascarenhas power upgrading project

SGS Climate Change Programme
SGS United Kingdom Ltd
SGS House
217-221 London Road
Camberley Surrey
GU15 3EY
United Kingdom

Date of Issue:	Project Number:
31-03-2008	CDM.Val0571
Project Title:	Organisational Unit:
UHE Mascarenhas power upgrading project	SGS Climate Change Programme
Revision Number:	Client:
01a	Energest S.A.

Summary:

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

The project activity consists of the construction of a 4th turbine/generator in an existent hydro power plant with 49.5 MW total installed capacity (4th machine) and no reservoir increases. The plant is being installed in the South East region of Brazil, in Rio Doce river.

Total amount of emission reductions estimated for the first crediting period is 353,262tCO_2e.

The Letter of Approval from the Government of Brazil was issued on 27th April 2007.

The only changes made to this version of the validation report compared to the validation report version 1 dated 06/03/2007 referred in the letter of approval of the DNA of Brazil are related to additional information requested by UNFCCC with no impact on amount of CERs as recommended by the CDM Executive Board in its 38 meeting.

Subject:		**Indexing Terms**
CDM Validation		
Team Members:		
Fabian Gonçalves, Áurea Nardelli, Rogério Carvalho, Geisa Principe.		
Technical Review: Siddharth Yadav		☒ No Distribution (without permission from the Client or responsible organisational unit)
Authorized Signatory: Irma Lubrecht		☐ Limited Distribution
Date of Final Decision: 31/03/07	Number of Pages: 36	☐ Unrestricted Distribution

Abbreviations

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

Table of Content

1. Introduction

1.1 Objective

The ENERGEST S.A have commissioned SGS to perform the validation of the project: UHE Mascarenhas power upgrading project with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

1.2 Scope

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

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

1.3 GHG Project Description

This report summarizes the results of the validation of UHE Mascarenhas power upgrading project, performed on the basis of UNFCCC criteria. The validation has been performed as a desk review of the project documents presented by Energest S.A and a site visit to Mascarenhas Hydro Power Plant, located in Baixo Guandu, Espírito Santo, Brazil. During site visit, Energest managers and Ecológica consultant were interviewed.

The project activity consists of the construction of a 4th machine in an existent hydro power plant with 49.5 MW total installed capacity using the existent reservoir. The plant is being installed in the South East region of Brazil, in Rio Doce River.

The Mascarenhas hydro plant was built in 1974 with 3 machines; and with new 4th machine, the total installed capacity now is 180.5 MW.

The yearly minimum energy output expected for the project is 192,720 MWh. The project is connected to interconnected grid South-Southeast-Midwest.

Total amount of emission reductions estimated for the first crediting period is 353,262 tCO_2 e.

Baseline Scenario:

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

With-project scenario:

The project activity consists of the installation of a 4th machine in a hydropower plant with capacity of 49.5 MW. It will result in GHG emissions reductions avoiding the dispatch of same amount of energy produced by fossil-fuelled thermal plants to the grid and to isolated systems.

Leakage:

No leakage is anticipated.

Environmental and social impacts:

As described in the PDD, the environmental impact assessment of the project is not applicable.

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

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

It was verified during the site visit that the plant obtained the required licenses.

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

1.4 The Names and Roles of the Validation Team Members

Name	***Role***
Fabian Gonçalves	*Lead Assessor*
Geisa Principe	*Local Assessor*
Aurea Nardelli	*Assessor*
Rogério Carvalho	*Trainee Local Assessor*

2. Methodology

2.1 Review of CDM-PDD and Additional Documentation

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

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

2.2 Use of the Validation Protocol

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

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

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

Checklist Question	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements are linked to checklist questions the project should meet.	*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 (**Y**), or a **Corrective Action Request (CAR)** due to non-compliance with the checklist question (See below). **New Information Request (NIR)** 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.

2.3 Findings

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

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

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

is issued, where:

I. mistakes have been made with a direct influence on project results;

II. validation protocol requirements have not been met; or

III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

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

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

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

2.4 Internal Quality Control

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

3. Determination Findings

3.1 Participation Requirements

Brazil is listed as the host Party. Brazil has ratified the Kyoto Protocol on 23rd August 2002 (http://unfccc.int/files/essential_background/kyoto_protocol/application/pdf/kpstats.pdf).

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

The Letter of Approval was issued on 27th April 2007.

3.2 Baseline Selection and Additionality

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

ACM 0002 is applicable to grid-connected renewable power generation project activities which include among other conditions "hydro power projects with existing reservoirs where the volume of the reservoir is not increased."

The project consists of installation of a 4th machine in an existent hydro power plant. The project boundaries are defined by the emissions targeted or directly affected by the project activities. It encompasses the physical, geographical site of the hydropower generation and the interconnected grid. The baseline calculation boundary is covered by the South-Southeast-Midwest integrated electric grid and all plants are connected to this grid and baseline calculations use the electric generation data from this region.

As required in the ACM 0002, the project demonstrated additionality using the "Tool for the demonstration and assessment of additionality".

Step 0 of the Tool for the demonstration and assessment of additionality is not applicable, because the crediting period will not start prior registration. To include the information under sub-step 4a. CAR 1 was raised.

The information was revised in the version 3 of the PDD. CAR 1 was closed out.

In the discussion of additionality, the project uses a benchmark analysis. The decision to go on with the project activity in 2003 does not consider the carbon credit revenue. To revise the IRR using the data available and that was used by Energest in the decision to install the 4th generator at Mascarenhas. CAR 2 was raised.

It was provided copy of the financial study. The project uses benchmark analysis as a tool to assess the potential generation project. The internal benchmark (Energest) for the year 2003 is 14.72% and the project used another value as reference, the National treasury notes (NTN-C), reference year 2003 = 18.42%. The NTN-C is an option for the project activity to invest in the Brazilian financial market which is the government bond rates. The NTN-C IRR is higher than the internal benchmark. The financial analysis demonstrates that the IRR without CDM revenue is 11.52% and with CDM revenue is 13.01% which is lower than internal benchmark or NTN-C. CAR 2 was closed out. The financial analysis as discussed in the PDD was checked against the references and the figures/assumptions used were found to be credible; amongst all the barriers elaborated in the PDD.

Barrier analysis:

It was verified during site visit that the project takes 30 years to install the 4th generator.

To provide more information regarding this information and why Escelsa was focused exclusively on the distribution activities due to the increasing opportunities on the energy market. NIR 3 was raised. A barrier analysis was made to prove additionality of the project activity. The barriers presented were investment, uncertainties on the energy, macro economic uncertainties and risk on the energy prices. The information was provided in the revised PDD. NIR 3 was closed out. Step 5 described in the PDD mention that CER was

seriously considered by the EDP holding group for all generation activities in Brazil. To provide the document that demonstrates this information to confirm that CER was considered. NIR 4 was raised.

Escelsa was focused exclusively in energy distribution because of the characteristic of the Brazilian market; most recently the market change and it was possible to obtain concession to act as a generator. The energy prices is a barrier to the project, the government establish the Thermoelectric Priority Plan, the thermal energy price is lower than hydro and this energy market is growing.

Verified that there are other similar generation plants, but not able to carry such as CDM project activity. In 2003 the EDP that owns Energest decide to consider CERs income for all generation activities in Brazil, and this is applicable for Mascarenhas project (MDL distribuidoras Brasil). NIR 4 was closed out.

During the site visit of the validation process, SGS interviewed Project Participants and Ecológica (the projects' consultancy) and verified the supporting documents, calculations of the IRR and also the benchmark utilised (WACC).

The IRR calculations and taxations were verified from the spreadsheets named: "Mascarenhas financial premises, financial analysis, cash flow (ref 13 of the Validation Report)".

LEGAL CHARGES	
ICMS	
- ICMS on eletric energy	**25.00%**
Taxes on invoiced revenues	**3.65%**
- PIS (in %)	0.65%
- COFINS (in %)	3.00%
CPMF (in %)	**0.38%**
Taxes on revenues	**33.00%**
- Income tax (in %)+D40	25.00%
- Social Contribution without revenues (in %)	8.00%
Finantial compensation =%*Cap*RCD (in US$)	**194,952**
- Reference Currently Duty - RCD (in US$)	14.40
- Applied Percentual	6.8%
ANEEL inspection taxes = 0.50% of revenues	**0.5%**

The "legal charges" above represents the applicable taxes in Brazil.

Verified the source information through official websites (Brazilian Federal Government and Espírito Santo Government) and following documents:

PIS/COFINS - http://www.receita.fazenda.gov.br/PessoaJuridica/PisPasepCofins/RegIncidencia.htm#Regimes%20especiais

CPMF - http://www.receita.fazenda.gov.br/PessoaJuridica/CPMF/InformacoesCPMF/default.htm

Social contribution - http://www.receita.fazenda.gov.br/previdencia/FormasContrib.htm

ICMS - http://www.es.gov.br/site/cidadaos/p_emp_contas_impostos.aspx

Inspection taxes – Lei No 9427, 26/12/1996.

The calculations used for the WACC were disclosed in the same document with IRR calculations, and the taxations (wheeling fees, conexion costs, sectoral taxes, etc) were verified through "Nota Técnica N° 164/2006-SRE/ANEEL (National Electricity Agency), 19/05/2006, Process: 48500.001208/2006-37". This document defines the methodology and general criteria to define the electricity concessionary remuneration.

They were fully explained to SGS by PPs and consultants, confirming that the taxes used in WACC and IRR calculations differed. SGS is of the opinion that the taxation in the IRR and benchmark is correct and comply with Brazilian regulation and is not double counted in the investment analysis.

Besides the financial analysis and barrier presented the project decide to implement the 4th generator (Mascarenhas).

The sources and information mentioned (data available in ONS, ANEEL websites) were confirmed by the assessors. The alternative to the project activity is the continuation of the current (previous) situation of electricity supplied by thermal power stations. As an alternative for the group company, there is the investment in other opportunities, like the financial market.

3.3 Application of Baseline Methodology and Calculation of Emission Factors

Considering that the project emissions and leakage are zero, the emission reductions by the project activity (ER_y) during a given year y will be the product of the baseline emissions factor (EF_y, in tCO_2e/MWh) times the electricity supplied by the project to the grid (EG_y, in MWh).

As defined in the ACM0002, the baseline emission factor is calculated as a combined margin, consisting of the combination of operating margin and the build margin factors. The calculation of the emission factor of Brazilian South-Southeast-Midwest grid is based on data from the National Electric System Operator (ONS – Operador Nacional do Sistema Elétrico) covering years 2003 -2005.

The baseline emission factor is defined as (EF_y) and is calculated as a combined margin (*CM*), consisting of the combination of operating margin (OM) and build margin (BM) factors.

The methodology mentions that the baseline emission fact is calculated considering the generation for the most recent 3 years available at the time of PDD submission. Annex 3 of the PDD present data for the most recent 4 years. To revised the baseline emission factor (2003-2005). CAR 8 was raised.

The emissions factor was revised and included in the PDD version 3. CAR 8 was closed out.

Baseline emissions are calculated by using the annual generation (project annual electricity dispatched to the grid) times the CO_2 average emission rate of the estimated baseline, as follows:

(A) Monitored project power generation (MWh) (B) Baseline emission rate factor (tCO_2/MWh)

BE= (A) x (B) (tCO_2)

The EF calculated (after CAR 8 closing out) was 0.262 tCO_2e/MWh.

The version 6 of the ACM0002 requires that the PE should be calculated from the “power density”.

In this case the reservoir do not increase, the project increase the electricity generation using the same reservoir existent.

3.4 Application of Monitoring Methodology and Monitoring Plan

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

To correct table presented in section D of the PDD according to project scenario and considering that Emission Factor was calculated ex-ante. Recording frequency for items 2, 3, 4 and 10: At the validation and will be recalculate at any renewal crediting period.

Some items are not applicable for this project. To revise the QC/QA according section D.2.1.3 when revised. CAR 6 was raised.

The PDD was revised; all item related to the EF was defined as ex-ante. CAR 6 was closed out.

PE is dependent on the reservoir area and capacity installed of the plant. This project do not increase the reservoir area, PE is not applicable.

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

The project developer will be responsible for the management. During site visit it was confirmed the structure described in the PDD (section B.7.2). As informed during site visit, the project will prepare the Operation and Maintenance Manual. Verified that the project developer is responsible for the operation, monitoring and registration and will ensure resources for the activities of monitoring.

Observation 1: Specific procedure needs to be available before project operation and during verification assessment (procedures for monitoring data adjustments, review of reported data/ results, internal audit, review data before verification assessment, corrective action).

3.5 Project Design

The project's starting date (01-10-2006) and operational lifetime (28 years) were clearly defined in the PDD and are reasonable. It was assumed a renewable crediting period. The operational lifetime exceeds the crediting period.

CAR 5: To correct the lifetime of the project according documents presented during validation assessment.

Section C.1.2 – lifetime 28 years. CAR 5 was closed out.

The project design engineering reflects current good practices and is not likely to be substituted by other or more efficient technologies within the project period.

3.6 Environmental Impacts

As described in the PDD and verified during validation assessment the environmental impact assessment of the project is not applicable, according project licenses.

The following document was verified during the site visit: "Certidão positiva de débito ambiental com efeitos de negativa, 20 July 2006" (this document informs that the project is attending environmental requirements).

The environmental effects were considered by the environmental agency during the licensing process. It is not expected any transboundary environmental impact. The project obtained licenses required by the Brazilian environmental regulation.

3.7 Local Stakeholder Comments

Local stakeholders have been invited by letters to comment on the UHE Mascarenhas power upgrading project.

The invitation was sent to specific stakeholders, considered representative of the general public, as defined in the Resolution n° 1 (Brazilian DNA requirement).

To provide copy of the letters and delivery receipt sent to local stakeholders and up dated the PDD with comments received. CAR 7 was raised.

Copy of the letters and delivery receipts was provided. CAR 7 was closed out.

During the consultation period no comments were received.

4. Comments by Parties, Stakeholders and NGOs

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

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

The PDD and the monitoring plan for this project were made available on the SGS website http://cdm.unfccc.int/Projects/Validation/DB/LE7SQW2RMMYTRA1X8YUPUTJ58TB850/view.html and were open for comments from 06 July 2006 until 04 August 2006. Comments were invited through the UNFCCC CDM homepage

4.2 Compilation of All Comments Received

No comments were received during the 30 days commenting period.

4.3 Explanation of How Comments Have Been Taken into Account

No comments were received.

5. Validation Opinion

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

SGS has performed a validation of the project: UHE Mascarenhas power upgrading project.

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

By the displacement of fossil fuels by renewable energy sources in the generation of electricity, the project results in reductions of greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the financial analysis and barriers presented demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. If the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

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

6. List of Persons Interviewed

Date	*Name*	*Position*	*Short description of subject discussed*
23-08-2006	José Miguel Trigueros	Manager	Operational issues.
23-08-2006	Belmíria Albano	MAINENANCE COORDINATOR	Technical issues.
23-08-2006	Pedro Sirgado	ENVIRONMENT	Environmental license.
23-08-2006	Sávio da Rós	PRODUCTION MANAGER	Project details, financial analysis.
23-08-2006	José Augusto Sava	MAITENANCE MANAGER	Project details, operation.
20-10-2006	Alejandro Bango	CDM CONSULTANT	PDD developing, monitoring plan, baseline study.
20-10-2006	Flávia Takeushi	CDM CONSULTANT	PDD developing, monitoring plan, baseline study.

7. Document References

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

/1/ Project Design Document, UHE Mascarenhas power upgrading project. Version 01, 05/06-2006; version 02, 30/06/2006; Version 03, 27/10/2006; version 04, 01/03/2007.

/2/ Approved consolidated baseline and monitoring methodology ACM0002 – Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources, version 6, 19/05/2006.

/3/ Tool for the demonstration and assessment of additionality

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

/4/ ANEEL license number 164, 25 April 2005.

/5/ ANEEL license number 554, 9 May 2006.

/6/ ANEEL license number 434, 30 January 2006.

/7/ Certidão positiva de débito ambiental CPENDA 136/06, 20 July 2006. This document inform that the project is attending environmental requirements

/8/ Previous license LP-GCA/SAIA/212/2006, 20 July 2006.

/9/ Installation license LI-GCA/SAIA/234/2006, 20 July 2006.

/10/ Operation license LO-GCA/SAIA/195/2006.

/11/ Agreement signed between Espírito Santo Centrais Elétricas S.A., Escelsa and Energest S.A, 1 August 2005.

/12/ 4th machine specification (turbine/generator).

/13/ Financial analysis and cash flow.

/14/ Emission factor and CER worksheet.

/15/ Technical description of the Mascarenhas plant – 4th machine.

/16/ Energest presentation about CERs income for all generation activities in Brazil (MDL distribuidoras Brasil).

A.1 Annex 1 – Local Assessment Checklist

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

Issue	**Findings**	**Source /Means of Verification**	**Further action / clarification / information required?**
Verify operation licence from ANEEL (national energy agency).	Verified ANEEL licenses: Number 164, 25 April 2005. Number 554, 9 May 2006. Number 434, 30 January 2006. License to act as an energy producer.	DR/ site visit	No
Verify PPA (Power purchase agreement)	Verified the power purchase agreement signed between Espírito Santo Centrais Elétricas S.A., Escelsa and Energest S.A, 1 August 2005.	DR/ site visit	No
Verify project like described in the PDD.	The Mascarenhas hydro plant was built in 1974 with 3 turbines and 3 generators. The CDM project encompasses the installation of the 4th turbine/generator. Turbine: Kaplan vertical, 51 MW. Generator: GE, 55000 kVA. Verified the meters installed: Meter Gross energy UN4-SMF1 Meter Liquid energy UN4-SMF2 and UN4-SMF3. The meters send the information directly to Escelsa (concessionary) in Vitória and the information is transferred electronically to the internal system. Verified that the reservoir area do not increased. Verified the document with technical description of the Mascarenhas plant – 4th machine.	DR/ site visit	No

A.2 Annex 2 – Validation Protocols

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

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	DR	PDD	No Annex I country in this project.	Ok	Ok
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily	DR	PDD	No Letter of Approval by host country (Brazil) has been submitted to the validator. The letter will be issued by the DNA after they analyse the draft validation report. The letter of approval was issued on 27th April 2007.	Send the validation report to DNA	Ok
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	DR	UFCCC	Yes. Brazil: 23 August 2002	Ok	Ok
1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario	DR	PDD	The project activity reduces emissions of greenhouse gas (GHG) as the result of the displacement of generation from fossil-fuel thermal plants that would have otherwise been delivered to the interconnected grid.	Ok	Ok
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available	DR	UFCCC	PDD was publicly available: 06 July 2006 until 04 August 2006. http://cdm.unfccc.int/Projects/Validation/DB/LE7SQW2RMMYTRA1X8YUPUTJ58TB850/view.html No comments were received.	Ok	Ok
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance	DR	PDD	Yes, the first version of the PDD uses the template version 2 (PDD publicly available during 30 days). During validation assessment the project change the template to version 3.	Ok	Ok

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA	DR	PDD	This project activity do not made use of ODA. The project was financed by BNDES.	Ok	Ok
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?			N.A		
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects			N.A		
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment.	DR Site visit I	PDD	The PDD published in the UNFCCC website was prepared using version 2 of the template. During process the PDD was updated to use the current version 3 of the template.	Ok	Ok
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?	DR Site visit I	PDD	Yes. Information and references were confirmed during validation assessment.	Ok	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology	PDD ACM 0002	DR	ACM 0002 (version 6) is applicable to grid-connected renewable power generation project activities which include among other conditions “electricity capacity additions such as hydro projects with existing reservoirs where the volume of the reservoir is not increased”. (installed power generation capacity divided by the surface area at full reservoir level) greater than 4 W/m².” The project has currently power density = 43W/m^2	Ok	Ok
2.2 Is the project boundary consistent	PDD	DR	Yes. It encompasses the	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
with the approved methodology	ACM 0002		physical, geographical site of the hydropower generation source, which is represented by the respective river basin of the project close to the power plant facility and the interconnected grid (South-Southeast-Midwest interconnected subsystem of the Brazilian grid).		
2.3 Are the baseline emissions determined in accordance with the methodology described	PDD ACM 0002	DR	The baseline emission factor is defined as (EF_y) and is calculated as a combined margin (*CM*), consisting of the combination of operating margin (OM) and build margin (BM) factors. The methodology mentions that the baseline emission fact is calculated considering the generation for the most recent 3 years available at the time of PDD submission. Annex 3 of the PDD present data for the most recent 4 years. To revised the baseline emission factor (2003-2005). The emissions factor was revised and included in the PDD version 3. CAR 8 was closed out. Baseline emissions are calculated by using the annual generation (project annual electricity dispatched to the grid) times the CO_2 average emission rate of the estimated baseline, as follows: (A) Monitored project power generation (MWh) (B) Baseline emission rate factor (tCO_2/MWh) BE= (A) x (B) (tCO_2) The EF calculated (after CAR 8 closing out) was	CAR 8	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			0.262 tCO_2e/MWh.		
2.4 Are the project emissions determined in accordance with the methodology described	PDD ACM 0002	DR	The version 6 of the ACM0002 requires that the PE should be calculated from the "power density". In this case the reservoir do not increase, the project increase the electricity generation using the same reservoir existent.	Ok	Ok
2.5 Is the leakage op the project activity determined in accordance with the methodology described	PDD ACM 0002	DR	Leakage is not applicable.	Ok	Ok
2.6 Are the emission reductions determined in accordance with the methodology described	PDD ACM 0002	DR	Yes. The emissions factor used to determine the emissions reductions was revised.	Ok	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.1 Does the PDD follow all the steps required in the methodology to determine the additionality	PDD ACM 0002 Tool	DR	Step 0 of the Tool for the demonstration and assessment of additionality is not applicable, because the crediting period will not start prior registration. To include the information under sub-step 4a. CAR 1 was raised. The information was revised in the version 3 of the PDD. CAR 1 was closed out.	CAR 1	Ok
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	ACM 0002 PDD	DR	In the discussion of additionality, the project uses a benchmark analysis. The decision to go on with the project activity in 2003 does not consider the carbon credit revenue. To revise the IRR using the data available and that was used by Energest in the decision to install the 4th generator at Mascarenhas. CAR 2 was raised. It was provided copy of the financial study. The project uses benchmark analysis	CAR 2 NIR 3 NIR 4	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			as a tool to assess the potential generation project. The internal benchmark (Energest) for the year 2003 is 14.72% and the project used another value as reference, the National treasury notes (NTN-C), reference year 2003 = 18.42%. The NTN-C is an option for the project activity to invest in the Brazilian financial market which is the government bond rates. The NTN-C IRR is higher than the internal benchmark. The financial analysis demonstrates that the IRR without CDM revenue is 11.52% and with CDM revenue is 13.01% which is lower than internal benchmark or NTN-C. CAR 2 was closed out. Barrier analysis: It was verified during site visit that the project takes 30 years to install the 4th generator. To provide more information regarding this information and why Escelsa was focused exclusively on the distribution activities due to the increasing opportunities on the energy market. NIR 3 was raised. A barrier analysis was made to prove additionality of the project activity. The barriers presented were investment, uncertainties on the energy, macro economic uncertainties and risk on the energy prices. The information was provided in the revised PDD. NIR 3 was closed out. Step 5 described in the PDD mention that CER was seriously considered by the EDP holding group for all generation activities in Brazil. To provide the		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			document that demonstrates this information to confirm that CER was considered. NIR 4 was raised. Escelsa was focused exclusively in energy distribution because of the characteristic of the Brazilian market; most recently the market change and it was possible to obtain concession to act as a generator. The energy prices is a barrier to the project, the government establish the Thermoelectric Priority Plan, the thermal energy price is lower than hydro and this energy market is growing. Verified that there are other similar generation plants, but not able to carry such as CDM project activity. In 2003 the EDP that owns Energest decide to consider CERs income for all generation activities in Brazil, and this is applicable for Mascarenhas project (MDL distribuidoras Brasil). NIR 4 was closed out. Besides the financial analysis and barrier presented the project decide to implement the 4th generator (Mascarenhas).		
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	ACM 0002 PDD	DR	Yes. The alternative to the project activity is the continuation of the current (previous) situation of electricity supplied by thermal power stations. As an alternative for the group company, there is the investment in other opportunities, like the financial market.	Ok	Ok
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario	PDD ACM 0002	DR	The other alternative could be the continuation of electricity supplied by	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			thermal plants in the country or to invest in financial market.		

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	PDD ACM 0002	DR	Yes.	Ok	Ok
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology	PDD ACM 0002	DR	Car 6 was raised: to correct table presented in section D of the PDD according to project scenario and considering that Emission Factor was calculated ex-ante. Recording frequency for items 2, 3, 4 and 10: At the validation and will be recalculate at any renewal crediting period. Some items are not applicable for this project. To revise the QC/QA according section D.2.1.3 when revised. The PDD was revised; all item related to the EF was defined as ex-ante. CAR 6 was closed out.	CAR 6	Ok
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology	PDD ACM 0002	DR	PE is dependent on the reservoir area and capacity installed of the plant. This project do not increase the reservoir area, PE is not applicable.	Ok	Ok
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	PDD ACM 0002	DR	There is no leakage.	Ok	Ok
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology	PDD AM	DR	Yes. See item 4.2.	CAR 6	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	PDD	DR	The methodology does not require monitoring for environmental, social and economic impact. The project will not change the size of the reservoir, for this reason the environmental impact is not applicable. The Mascarenhas plant has a waste recycling facility with total separation of water and oil for the new generating unit.	Ok	Ok
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	See item 5.1.1.	Ok	Ok
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	See item 5.1.1.	Ok	Ok
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	The PDD presented a discussion under six items (social and environmental) of the World Commission on Dams. Recommendations checklist.	Ok	Ok
5.2 Project Management Planning					
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	DR/I	Yes. The project developer will be responsible for the management.	Ok	Ok
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD	DR/I	During site visit it was confirmed the structure described in the PDD (section B.7.2).	Ok	Ok
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	DR Site visit I	Mascarenhas plant has specialized monitoring personnel.	Ok	Ok
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR Site visit I	Unintended emissions from the hydro power plant are not expected. Other potential emergencies and troubles should be covered by the operational manual (Operation and	Verify	Ok

CHECKLIST QUESTION		Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
				Maintenance).		
5.2.5	Are procedures identified for calibration of monitoring equipment?	PDD	DR Site visit I	Verify on site. As informed during site visit, the project will prepare the Operation and Maintenance Manual. The calibration of monitoring equipment is under project responsibility. Verified procedures: Normal operation IO-USMA-213-A, Emergency operation IO-USMA-213-B.	Verify	Ok
5.2.6	Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR Site visit I	See 5.2.5. Mascarenhas plant will be responsible for the calibration and maintenance of the monitoring equipment.	Verify	Ok
5.2.7	Are procedures identified for monitoring, measurements and reporting?	PDD	DR I	Verify on site. The Mascarenhas project was not operational during site visit. As informed during the site visit, the project sponsors will prepare the Operation and Maintenance Manual. Section B.7.2 of the PDD includes information about monitoring and reporting general procedures to be implemented.	Verify	Ok
5.2.8	Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR I	Verify on site. The Mascarenhas project was not operational during site visit. See item 5.2.5.	Verify	Ok
5.2.9	Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR Site visit I	Verified that the project developer is responsible for the operation, monitoring and registration and will ensure resources for the activities of monitoring. Specific procedure needs to be available before project operation and during verification assessment.	Ok	Observation 1

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.2.10 Are procedures identified for review of reported results/data?	PDD	DR I	See 5.2.9.	See 5.2.9	Observation 1
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	DR I	See 5.2.9.	See 5.2.9	Observation 1
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	DR I	See 5.2.9	See 5.2.9	Observation 1
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	DR I	See 5.2.9	See 5.2.9	Observation 1

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	Yes.	Ok	Ok
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR	Verify EIA and other legal requirement. As described in the PDD, the environmental impact assessment of the project is not applicable. The following document was verified during the site visit: "Certidão positiva de débito ambiental com efeitos de negativa, 20 July 2006" (this document inform that the project is attending environmental requirements).	Verify	Ok
6.3 Will the project create any adverse environmental effects?	PDD	DR	The environmental effects were considered by the environmental agency during the licensing process.	Verify	Ok
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	It is not expected any transboundary	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			environmental impact.		
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	The project obtained licenses required by the Brazilian environmental regulation.	Ok	Ok
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	Verify licenses. The plant obtained the legal required environmental licenses: Previous license LP-GCA/SAIA/212/2006, 20 July 2006. Installation license LI-GCA/SAIA/234/2006, 20 July 2006. Operation license LO-GCA/SAIA/195/2006.	Verify	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	Yes, as listed in the PDD, section E and verified during the validation assessment.	Ok	Ok
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	Verify language and information used in the consultation process. Letters sent to stakeholders were verified. They are prepared in local language.	Verify	Ok
7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	PDD	DR	To provide copy of the letters and delivery receipt sent to local stakeholders and up dated the PDD with comments received. Copy of the letters and delivery receipts was provided. CAR 7 was closed out.	CAR 7	Ok
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	No comments were received.	Verify	Ok
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	No comments were received.	Verify	Ok

Table 8 Other requirements. All CDM project activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	Yes.	Ok	Ok
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	PDD	DR	Yes.	Ok	Ok
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	Yes.	Ok	Ok
8.2.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD	DR/ site visit	Yes. The facility is a hydro power plant.	Ok	Ok
8.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR/ site visit	It is not expected.	Ok	Ok
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR/I	It was verified during the site visit, by interviews. No specific training has been required for this project. Operators will be trained on the operational, monitoring and maintenance procedures before the hydropower plant starts the operation.	Verify	Ok
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Section C.1.1 – starting date of the project activity: 01/10/2006. CAR 5: To correct the lifetime of the project according documents presented during validation assessment. Section C.1.2 – lifetime 28 years. CAR 5 was closed out.	CAR 5	Ok
8.3.2 Is the assumed crediting time clearly defined and reasonable	PDD	DR	Renewable crediting period:	Ok	Ok

CHECKLIST QUESTION		Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
	(renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?			first period 7 years.		
8.3.3	Does the project's operational lifetime exceed the crediting period	PDD	DR	Yes.	Ok	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Verify operation licence from ANEEL (national energy agency).	DR	DR/ site visit	Verified ANEEL licenses: Number 164, 25 April 2005. Number 554, 9 May 2006. Number 434, 30 January 2006. License to act as an energy producer.	Ok	Ok
Verify PPA (Power purchase agreement)	DR	DR/ site visit	Verified the power purchase agreement signed between Espírito Santo Centrais Elétricas S.A., Escelsa and Energest S.A, 1 August 2005.	Ok	Ok
Verify project like described in the PDD.	DR	DR/ site visit	The Mascarenhas hydro plant was built in 1974 with 3 turbines and 3 generators. The CDM project encompasses the installation of the 4th turbine/generator. Turbine: Kaplan vertical, 51 MW. Generator: GE, 55000 kVA. Verified the meters installed: Meter Gross energy UN4-SMF1 Meter Liquid energy UN4-SMF2 and UN4-SMF3. The meters send the information directly to Escelsa (concessionary) in Vitória and the information is transferred electronically to the internal system. Verified that the reservoir area do not increased.	Ok	Ok

A.3 Annex 3 – Findings Overview

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

Description of table:

Type — Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.

Issue — Details the content of the finding

Ref — refers to the item number in the Validation Protocol

Response — Please insert response to finding, starting with the date of entry.

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

Date: 28/08/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
1	CAR	Step 0 of the Tool for the demonstration and assessment of additionality is not applicable, because the crediting period will not start prior registration. To include the information under sub-step 4a.	3.1
Date: Ok, step 0 was corrected, and sub-step 4a was included			
Date: 21/11/2006 – Fabian Gonçalves. [Acceptance and close out] The information was revised in the version 3 of the PDD. CAR 1 was closed out.			

Date: 28/08/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
2	CAR	In the discussion of additionality, the project uses a benchmark analysis. The decision to go on with the project activity in 2003 does not consider the carbon credit revenue. To revise the IRR using the data available and that was used by Energest in the decision to install the 4th generator at Mascarenhas.	3.2
Date: Documents to proof the additionality of the project activity was sent to SGS by mail. [Comments]			
Date: 21/11/2006 – Fabian Gonçalves. [Acceptance and close out] It was provided copy of the financial study. The project uses benchmark analysis as a tool to assess the potential generation project. The internal benchmark (Energest) for the year 2003 is 14.72% and the project used another value as reference, the National treasury notes (NTN-C), reference year 2003 = 18.42%. The NTN-C is an option for the project activity to invest in the Brazilian financial market which is the government bond rates. The NTN-C IRR is higher than the internal benchmark. The financial analysis demonstrates that the IRR without CDM revenue is 11.52% and with CDM revenue is 13.01% which is lower than internal benchmark or NTN-C. CAR 2 was closed out.			

Date: 28/08/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
3	NIR	Barrier analysis: It was verified during site visit that the project takes 30 years to install the 4th generator. To provide more information regarding this information and why Escelsa was focused exclusively on the distribution activities due to the increasing opportunities on the energy market.	3.2
Date: It was included more information.			

[Comments]
Date: 21/11/2006 – Fabian Gonçalves. [Acceptance and close out] A barrier analysis was made to prove additionality of the project activity. The barriers presented were investment, uncertainties on the energy, macro economic uncertainties and risk on the energy prices. The information was provided in the revised PDD. NIR 3 was closed out.

Date: 28/08/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
4	NIR	Step 5 described in the PDD mention that CER was seriously considered by the EDP holding group for all generation activities in Brazil. To provide the document that demonstrates this information to confirm that CER was considered.	3.2
Date: The documentation was sent by mail. [Comments]			
Date: 21/11/2006 – Fabian Gonçalves. [Acceptance and close out] Copy of the EDP document was provided. NIR 4 was closed out.			

Date: 28/08/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
5	CAR	To correct the lifetime of the project activity.	8.3.1
Date: The lifetime was corrected. [Comments]			
Date: 21/11/2006 – Fabian Gonçalves. [Acceptance and close out] The lifetime was revised. CAR 5 was closed out.			

Date: 28/08/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
6	CAR	To correct table presented in section D of the PDD according to project scenario and considering that Emission Factor was calculated ex-ante. Recording frequency for items 2, 3, 4 and 10: At the validation and will be recalculate at any renewal crediting period. Some items are not applicable for this project. To revise the QC/QA according section D.2.1.3 when revised.	4.2, 4.5
Date: The recording frequency was corrected as indicated. And QC/QA was revised. [Comments]			
Date: 21/11/2006 – Fabian Gonçalves. [Acceptance and close out] The PDD was revised; all item related to the EF was defined as ex-ante. CAR 6 was closed out.			

Date: 28/08/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
7	CAR	To provide copy of the letters and delivery receipt sent to local stakeholders and up dated the PDD with comments received.	7.3
Date: It will be provided and up dated. So far no comments were received.			
Date: 21/11/2006 – Fabian Gonçalves. [Acceptance and close out] Copy of the letters and delivery receipts was provided. CAR 7 was closed out.			

Date: 28/08/2006 Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
8	CAR	The methodology mentions that the baseline emission factor is calculated considering the generation for the most recent 3 years available at the time of PDD submission. Annex 3 of the PDD present data for the most recent 4 years. To revised the baseline emission factor (2003-2005).	2.3
Date: Data from 2002 was excluded. Annex 3 presented data for the most recent 4 years, but only the most recent 3 years data were used to calculate the baseline emission factor.			
Date: 21/11/2006 – Fabian Gonçalves.			

[Acceptance and close out] The baseline emission factor was recalculated using the most recent 3 years data available, copy of the EF worksheet was provided and the PDD was revised. CAR 8 was closed out.

Observations:
1- Specific procedure needs to be available before project operation and during verification assessment (procedures for monitoring data adjustments, review of reported data/ results, internal audit, review data before verification assessment, corrective action).

A.4 Annex 4 – Statement of Competence of Validation Team

Statement of Competence

Name: Fabian Goncalves SGS Affiliate: SGS 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: Marco van der Linden Date: 27/07/2006

Statement of Competence

Name: Aurea Nardelli SGS Affiliate: SGS 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: Marco van der Linden Date: 16-03-2007

Statement of Competence

Name: Geisa Principe SGS Affiliate: SGS 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: Marco van der Linden Date: 13/03/2007