VALIDATION REPORT

MD PAPÉIS

Fuel Switch Project in Caieiras, SP, Brazil

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Summary

This report summarizes the results of the validation of the project, performed on the basis of UNFCCC criteria. The validation has been performed as a desk review of the project documents presented by MD Papéis and a site visit to MD Papéis industrial unit, where staff from the company and its consultant was interviewed.

MD Papéis industrial unit is located in Caieiras, São Paulo, Brazil. The project activity consists of the conversion of fuel oil-fired boilers into natural gas-fired boilers. It is applied the approved baseline and monitoring methodology *ACM0009*.

The utilization of a less intensive carbon content fuel will reduce significantly GHG emissions due to MD Papéis' operations. The total amount of emission reductions estimated for the fixed crediting period (10 years) is 102,987.55 tCO2e.

SGS will request the registration of the Fuel Switch Project in Caieiras, SP, Brazil as a CDM project activity, once the written approval by the DNA of the participating Parties and the confirmation by the DNA of Brazil that the project assists in achieving sustainable development has been received.

Subject.:			
CDM validation			**Indexing terms**
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Abbreviations

AM	Approved Methodology
CAR	Corrective Action Request
CER	Certified Emission Reduction
DNA	Designated National Authority
EF	Emission Factor
MP	Monitoring Plan
NIR	New Information Request
ODA	Official Development Assistance
PDD	Project design Document
SGS	Société Générale de Surveillance
UNFCCC	United Nations Framework Convention on Climate Change

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1. Introduction

1.1 Objective

MD PAPÉIS has commissioned SGS to perform the validation of the project: "*Fuel Switch Project in Caieiras, SP, Brazil*" 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

MD Papéis is a company from the Formitex Group, one of the first paper manufactures of Brazil, producing high quality papers (special papers). Its industrial plant is located in Caieiras, São Paulo, Brazil.

The project activity consists of the conversion of two fuel oil-fired boilers into natural gas-fired boilers. The utilization of a less intensive carbon content fuel will reduce significantly GHG emissions due to MD Papéis' operations. In the baseline scenario, fuel oil would otherwise be used during the crediting period.

The technology employed consists of the replacement of fuel burners from oil fuel burners to natural gas injection system, the construction of the internal natural gas pipeline and revamping of field instruments.

Total amount of emission reductions for the 10 years fixed crediting period is therefore 102,987.55 tCO_2e.

The starting date of the crediting period will be 01 January 2008.

Baseline Scenario:

The company would continue using fuel oil in its boilers for steam production.

With-project scenario:

Fuel switching from fuel oil to natural gas.

Leakage:

The estimated leakage for the crediting period is 41,707 tCO_2e.

Environmental and social impacts:

The project is not expected to result in negative environmental and social impacts. The project brings some environmental benefits such as: it is safer to deal with natural gas than fuel oil, in terms of transportation and storage (natural gas uses pipelines instead of trucks and it is not needed to store natural gas in tanks; it also minimizes the risks of accidents and soil and/or water contamination. Regarding the social impacts, the project has created direct and indirect new jobs during conversion and operation of the equipments.

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

Name	***Role***
Aurea Nardelli	*Team leader*
Fabian Gonçalves	*Lead Assessor*
Geisa Principe	*Local assessor*
Rogério Carvalho	*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

MD Papéis is the project participant. 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 receive and analyse the validation report.

At time of validation process, there is no Annex I parties in this project.

3.2 Baseline selection and additionality

The project consists of switching fuel oil to natural gas in two steam boilers at MD Papéis industrial unit applying the methodology ACM0009 – Consolidated baseline methodology for fuel switching from coal or petroleum fuel to natural gas (version 3).

It was confirmed that the project is in compliance with the applicability criteria defined in ACM0009, as described bellow:

- Prior to the implementation of the project activity, only fuel oil (petroleum) had been used in the two steam boilers. It was verified on-site visiting the previous installation which operates with fuel oil and the oil suppliers invoices.
- The local regulations/programs do not constrain the facility from using fuel oil. Verified on-site the licenses issued by the environmental agency (before 2005) and no legal requirement for fuel switching was identified.
- Regulations do not require the use of natural gas or other fuel in boilers.
- The project activity did not increase the capacity of final outputs and lifetime of the existing facility during the crediting period. The existing boilers will have a lifetime of 18 years, so more than the 10 year crediting period.
- The proposed project activity did not result in integrated process change. It was verified during site visit that there is no thermal capacity expansion planned during crediting period.

ACM0009 version 3 defines specific requirements for identification and selection of the baseline scenario. During the desk study, it was verified that the project did not consider all alternatives required in the methodology. Only two scenarios were selected: continuation of using oil or the project activity do not undertake under the CDM. It is required to consider at least two other additional alternatives: switching from oil to other fuel (such as biomass) and switching from oil to natural gas at a

future point in time during the crediting period. These other scenarios were not discussed in the PDD. Complete information to support the analysis required by the methodology should be provided. CAR 4 was raised.

To close out CAR 4, the PDD was revised and the following alternatives scenarios were mentioned:

(1) Continuation of the current practice of using oil as the fuel;
(2) Switching from petroleum fuel to biomass;
(3) Switching from petroleum fuel to natural gas at a future point in time during the crediting period;
(4) The project activity not undertaken under the CDM (switching from fuel oil to natural gas)

The barriers faced by alternatives (2) and (3) were discussed in the revised PDD. It was confirmed that the alternative 2 faces technical barriers as biomass is not available on-site and also the burning of it in the boiler is not operational efficient or even possible. According to the equipment's manual (supplied by Aalborg Industries), the flame tube boiler only works with fuel oil or natural gas. The utilization of biomass in flame tube boilers would generate residues inside the equipment. Copy of the manual supporting this information was provided to the validation team.

It was mentioned on the PDD that the alternative 3 also faces prohibitive barriers as the determination of the future prices of natural gas and fuel oil is not accurate, mainly due to a lot of uncertainties involving the domestic and international markets that affect direct or indirectly the fuels price. References of the sector were provided in the PDD to support this discussion of barrier.

A comparison of the NPV (Net present value) of the alternatives 1 and 4 (scenarios that do not face any prohibitive barrier) was presented to select the most cost-effective scenario (with the highest NPV) as the baseline scenario. This analysis was supported by data and assumptions used for the calculations, presented in the spreadsheets provided by MD Papéis to the validation team.

In addition, a sensitivity analysis applying Sub-step 2d of the latest version of the "Tool for demonstration assessment and of additionality" was carried out. A spreadsheet with sensitivity analysis was provided. This analysis was carried out considering changes of the interest rate (10.3% - 14.3%). Under these plausible conditions, the sensitivity analysis supported the results of the economic analysis (NPV analysis comparing gas natural and fuel oil).
The most cost effective scenario is the alternative1- fuel oil boilers -, which presents the highest NPV. Then, it was the baseline scenario.

Considering the complete information included in the PDD version 3 about the baseline scenario discussion and selection, CAR 4 was closed out.

To determine the additionality the project follows the steps required in the methodology: investment & sensitivity analysis, common practice analysis and impact of CDM registration.

During the desk study, it was verified that the discussion on the additionality was not clear and had been not supported by objective evidences and a NIR (2) was raised. Considering only the information provided in the PDD, the following items could not be verified during the desk study:

- Prices and consumption of fuel oil and natural gas;

- NPV analysis (spreadsheet with formulas, data and assumptions used were not provided);

- Efficiency of fuels (oil and natural gas).

To close out NIR 2 the following documents were verified to confirm the information presented in the revised PDD:

- Invoices issued in January 2005 (fuel oil invoices from suppliers: Grigolleto, Shell and Petrobrás).
- Boiler efficiency (document sent from Aalborg – boiler manufacturer), confirming the value of 90%. For MD Papéis's project activity, the efficiency of the element process does not change due to the fuel switch, so it is assumed $\varepsilon_{project,i} = \varepsilon_{baseline,i}$ as a simplification." It was confirmed by manufacturer information provided during the validation.
- Portaria CSPE N°297 that mention the gas price according industrial segment, class and consumption.
- Spreadsheet with financial analysis and worksheet with data about the investment on the project activity.

The common practice analysis was carried out and presented in the PDD. Source of data mentioned in the PDD was checked and concluded that nevertheless natural gas market is growing in Brazil the common practice has been the use of fuel oil and firewood. Considering the documents presented and information provided it was concluded that the project is not a common practice and its region and sector.

The impact of CDM Registration was demonstrated from the investment analysis. It was demonstrated that the use of natural gas represents a negative NPV, with and without the CERs., but the CERs reduce the financial loss, which was fundamental for the implementation of the project activity.

Since the project satisfied the three steps, it was concluded that the project is additional.

3.3 Application of Baseline methodology and calculation of emission factors

The methodology applied to this fuel switch project is ACM0009 – Consolidated baseline methodology for fuel switching from coal or petroleum fuel to natural gas (version 3).

The quantity of oil that would be used in the absence of the project activity in each boiler is calculated based on the actual monitored quantity of natural gas combusted in the boiler and the relation of the energy efficiencies and the net calorific values between the project scenario and the baseline scenario.

During the visit on-site, it was identified that the plant industrial kitchen consumes natural gas from the same pipeline of the project activity and there is not meter installed to quantify its individual consumption. The kitchen is not included in the project activity boundary. CAR 8 was raised.

To close out CAR 8, the company prepared an internal corrective action report according to ISO standard aiming to: (a) verify the amount of gas consumed in the industrial kitchen; (b) define the meter to be installed; (c) identify costs; and (d) elaborate a plan to install the specific meter for the gas consumed at the industrial kitchen (RACO 01/06, 30/10/06). CAR 8 was closed out and an observation (2) was raised: according to RACO 01/06, MD will install a specific meter for the natural gas consumption by the industrial kitchen. This meter shall be installed before the starting date of the crediting period.

Formulas described in PDD are in compliance with ACM 0009 (version 3), but additional information were needed to verify if the baseline emissions, project emissions, leakage and emissions reductions were determined in accordance with the methodology. NIR 3 was raised: details about the calculation of data presented in the PDD were not provided during the desk study, as spreadsheet with formulas, and conversion factors. To close out NIR 3, it was provided the spreadsheet "*Cálculo CER e análise econômico financeira*". The spreadsheet contains the data and formulas necessary for CER calculation. Default emission factors were obtained from Volume 3 of the 1996 Revised IPCC

Guidelines. Details of baseline emissions, project emissions and leakage were adequately discussed. NIR 3 was closed out.

It is observed on-site by document review that the volume of natural gas mentioned in the PDD was bigger than the volume informed on the contract signed by the gas supplier and MD Papéis. In addition, the PDD was not clear to indicate into which class of gas consumer (CSPE legislation) the company is classified. NIR 9 and NIR 10 were raised. The company representative explained that, for the preliminary calculation of the PDD, the volume of natural gas considered was the volume necessary to meet the historic energy need of the plant (from 2005) – that used to be met by the diesel oil consumption in the baseline scenario – instead of the minimum volume indicated in the contract. The explanation provided by the company was accepted. The calculation and factors used to estimate the volume of natural gas were provided. The volume reported in the PDD was confirmed. NIR 9 was closed out. Copy of the "Portaria CSPE N°297" was provided. The class of consumption was confirmed as class 10. NIR 10 was closed out.

3.4 Application of Monitoring methodology and Monitoring Plan

The project applies the approved consolidated baseline methodology ACM0009 "Consolidated monitoring methodology for fuel switching from coal or petroleum fuel to natural gas" (version 3).

The project meets all the applicability criteria listed in the monitoring methodology.

The monitoring methodology involves monitoring of parameters with regard to the combustion of natural gas in the project activity. Monitoring of parameters for calculating baseline emissions or leakage is not needed. The quantity of oil that would be used in the absence of the project activity in the boiler is calculated from the actual monitored quantity of natural gas combusted in the boiler and the relation of the energy efficiencies and the net calorific values between the project scenario (use of natural gas) and the baseline scenario (use of oil).

The monitoring plan had not adequately addressed all necessary information for monitoring the emission reductions due to the project activity. CAR 5 was raised: The tables presented in the section B.7 are not completed. There are parameters mentioned in the ACM0009 that were not included in the PDD. It was not informed if the NCV and EF of natural gas will be measured or if would be applied default values. Information related to "Value of data applied for the purpose of calculating expected emission reductions" was not included in the tables.

To close out CAR 5, the PDD was revised and the tables presented in the section B.7 were completed. Value of all data applied for the purpose of calculating expected emission reductions were included. The fuel efficiency of natural gas was included and it was informed that the NCV of natural gas will be given by the natural gas supplier (Comgás). It was clarified that although the value for NCV informed in the Portaria CSPE n° 297 is 9400 kcal/m³, the value applied in the project was 9065kcal/m³. This second value was justified from documented evidence provided by the natural gas supplier. In addition, the results of an analysis of the natural gas supplied in January 2007 to MD Papéis (analysis carried out by Comgás laboratory, reported on 09/02/2007) mentioned that the average value of NCV for January 2007 was 8606kcal/m³. It was confirmed that the value applied for estimative of the baseline and for economic analysis was conservative. CAR 5 was closed out.

For determination of energy efficiency, the consumption of natural gas and corresponding steam generation will be monitored. Procedures for steam generation (see CAR 7 closing out details bellow)

and daily records of boilers operation were verified. The generation of steam and natural gas consumption are recorded on the worksheet “Boletim diário das caldeiras”. There are daily records that will be used for calculation of the monthly efficiency. These daily measurements cover the different load factors (if there is any variation in a day). For each day, data about consumption of natural gas and steam generation is consolidated. The monitoring of efficiency has been established also as an operational monitoring of the plant and is included in its quality management system.

During the desk study and site visit, CAR 7 was raised related to the management system of the project activity. It was verified that there were no procedures identified for:

- Calibration of monitoring equipment;
- Measurements and reporting;
- Day-to day records handling;
- Emergency preparedness.

To close out CAR 7, the following procedures were prepared or revised to cover the requirements related to the management system of a CDM project:

- PRG-MN-002, rev. 2 (Planejamento, Organização e Controle da Manutenção);

- FOQ-UY.002 R.02 (Boletim diário das caldeiras);

- PMIE (Planilha de Monitoramento de Indicadores de Eficácia);

- UT011 (Geração de vapor); DES-UT.001 rev03 (Controle de Documentos Externos – Utilidades); - DES-UT.003 rev04 (Tabela de registro da qualidade – Processo 5). It was also raised an internal corrective action to include the gas meter calibration as a responsibility of the quality management system of the MD plant and not only Comgás (gas supplier) responsibility. CAR 7 was closed out.

No specific QC and QA were required in the ACM0009, but independent on the methodology not require specific QC/QA, they should be provided to ensure good monitoring (Observation 1).

3.5 Project design

The project activity consists of the conversion of two fuel oil-fired boilers into natural gas-fired boilers.

With regard to the technology to be employed by the project activity, it is pretty conventional and basically it consists of the replacement of fuel burners (from oil fuel burners to natural gas injection system), the construction of the internal natural gas pipeline and revamping of field instrument. The technology applied is considered current good practice and is not expected to be replaced within the crediting period.

Starting date of the project was 1st January 2005. The operational lifetime of the project activity is estimated to be 18 years. A fixed crediting period of 10 years starting on 1st January 2008 is selected.

The project did not make use of a diversion of official development assistance (ODA) or public funding.

Regarding the completion of the PDD template, the project should correctly complete a Project Design Document, using the current version and exactly following the guidance, without modifying/adding headings or logo, format or font. The specific requirements should be addressed under each header. During the desk study, it was verified that the PDD presented changes in the first page of the template

(it is used version 3) and there were mistakes (repetitions) under section A.4 (name of the country and map). CAR 1 was raised.

To close out CAR 1, a new version of PDD was prepared, solving the non-conformities detected during the desk study. CAR 1 was closed out.

3.6 Environmental Impacts

Considering the nature of the project, no significant adverse environmental impacts are expected.

It was informed in the PDD: "According to a preliminary consultation to the Environmental Agency of São Paulo State (CETESB), CETESB won't oppose to the proposed fuel switching project. A formal licensing process according to Brazilian regulations will be carried out in due time."

Additional information is required regarding the analysis of the environmental impacts of the project activity. Information provided in the PDD was not clear about environmental studies/impacts of the project and about legal requirements. No installation license or the requirement for state environmental agency was mentioned. NIR 6 was raised.

It was confirmed on-site that the process of environmental licensing is on-going. The licenses: LP 29001355, LI 29002750 were requested on 26/10/2006, as verified by the local assessors. MD Papéis sent a letter to environmental agency (CETESB) on 12 January 2006 informing about the fuel switch from fuel oil to natural gas in the boilers. Environmental agency (CETESB) sent an answer on 13/02/2006 informing that agree with project implementation. The previous licenses related to MD Papéis industrial units were also verified on-site. NIR 6 was closed out.

3.7 Local stakeholder comments

A list of stakeholders contacted was presented in the PDD. Verified on-site the letters sent in local language to local stakeholders. The list of stakeholders complies with Resolução n°1.

Copy of the letters and delivery receipt was provided. Comments received are favourable to the project and did not require responses from the project developer.

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/WF57REQQ3B4EJOYNRN467LQB5IEUUJ/view.html and were open for comments from 29 Sep 2006 until 28 Oct 2006. Comments were invited through the UNFCCC CDM homepage.

4.2 Compilation of all comments received

No comments were received to the DOE 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 10 Findings and two observations.

SGS has performed a validation of project: Fuel Switch Project in Caieiras, SP, Brazil. The validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide consistent project operations, monitoring and reporting. Using a risk based approach, the validation 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 switching fuel oil to natural gas, the project results in reducing greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the barriers presented demonstrates that the proposed project activity was 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.

The DOE declares herewith that in undertaking the validation of this proposed CDM project activity it has no financial interest related to the proposed CDM project activity and that undertaking such a validation does not constitute a conflict of interest which is incompatible with the role of a DOE under the CDM.

6. List of persons interviewed

Date	***Name***	***Position***	***Short description of subject discussed***
10 Oct 2006	Alberto O. Lupetti	Safety and Environmental Manager	Technical issues, operational issues, findings, monitoring plan, baseline, licenses.
10 OCT 2006	Júlio Cesar Alves	Quality Manager	Quality procedures.
16 Nov 2006	Letícia Roxo	Project developer	Validation process and findings.

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, Fuel Switch in Caieiras, SP, Brazil. Version 1, 25/08/2006; Version 2, 08/11/2006; version 3 (27/02/2007) and version 4 (05/09/2007).

/2/ ACM0009 – Consolidated baseline and monitoring methodology for fuel switching from coal or petroleum fuel to natural gas. Version 03, 28 July 2006.

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):

/3/ Worksheet: CERs, financial analysis.

/4/ "Análise de Viabilidade do Gás Natural". Analysis to implement the fuel switch.

/5/ Installation license requirement: LP 29001355, LI 29002750 requested on 26/10/2006.

Letter to environmental agency (CETESB) on 12 January 2006 informing the fuel switch from fuel oil to natural gas in the boilers.

Environmental agency (CETESB) answer on 13/02/2006 informing that agrees with project implementation.

/6/ Comgás training and attendance list, 18/07/2006.

/7/ PRG-MN-002, rev. 2 (Planejamento, Organização e Controle da Manutenção); FOQ-UY.002 R.02 (Boletim diário das caldeiras); PMIE (Planilha de Monitoramento de Indicadores de Eficácia); UT011 (Geração de vapor); DES-UT.001 rev03 (Controle de Documentos Externos – Utilidades); DES-UT.003 rev04 (Tabela de registro da qualidade – Processo 5)

/8/ Internal corrective action (MD).

/9/ Investment for the fuel switch (invoices).

/10/ Boiler efficiency and lifetime.

/11/ Fuel oil invoices.

/12/ ISO certificate.

/13/ "Part 1 - General description" of the manual of the boiler

/14/ Communication from Comgás about natural gas NCV

/15/ Sensitivity analysis

Annex 1 - Local assessment checklist

Fuel Switch Project in Caieiras, SP, Brazil – CDM.Val0598

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

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Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Verify the contractual negotiation with Comgás - the gas natural supplier - and the development of the project's engineer (confirm starting date of the proejct and what are both parts obligations).	Only the pipeline was paid by natural gas supplier. The other investments were MD Paper investments. Verified the "MD Papeis – Investment data".	Site visit/DR	No
Verify the specifications of the two Aalborg fuel oil-fired boilers. Check if they comply with description on table 1, page 6 PDD. The boilers were able to use natural gas **BEFORE t**he project activity (check manufacturer information)? If so, what were the conversion needs?	Verified the boilers description. Changes were necessary to use natural gas: new control equipments, gas pipeline.	Site visit/DR	No
The PDD mentioned that the company "Also makes natural gas available in the region where the plant is located". Check what it means and what are the actions carried out by MD that support this statement.	The pipeline cross Caieiras city to achieve the end of pipe at MD plant.	Site visit/DR	No
Verify on site evidences that the plant used fuel oil	Heavy oil had been use during many years in 2 boilers. Verified the deactivated oil tanks, oil pipeline, oil	Site visit/DR	No

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
in the past (see the diagram of page 6 PDD; check the oil tanks, invoices of oil suppliers, interview people etc).	control panel in the operation room. Verified oil invoices.		
The PDD stated that "the decision of MD Papéis in choosing the natural gas is not forced nor restricted by any legal requirement and the proposed project activity is not the only alternative, as the company would continue to use the oil fuel." Verify: is there any legal requirement related to the fuel switching? Check environmental license (current and other licenses in the past; check if there is some condition required by Cetesb relate to emissions or use of fuel oil). Verify the L.O. 29002527) valid until 26/12/2006 and ask copy.	Verified that there is no legal requirement for the fuel switch. The current license is under process, but the environmental agency was notified about the fuel switch project in January 2006. Verified licenses in the past and all licenses did not require the fuel switch (verified licenses from 1996-2005).	Site visit/DR	No
Check source/reference and confirm prices of fuel oil: 0.59712 R$/Kg (61.88 R$/Gcal) and total consumption:	On PDD page 9, step 4 the gas volume indicated is bigger than indicated on supplier x MD Paper contract. NIR 9 was raised. PDD is not clear to indicate into which class on CSPE legislation MD Paper is classified. NIR 10 was raised.	Site visit/DR	No

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Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
16,840,000 Kg/ per year mentioned in PDD page 9 (invoices of suppliers?). Check source/reference and confirm price of Natural Gas Price: 0.56791 R$/$m^3$ (62.65R$/Gcal) (CSPE?) and estimated consumption of 17,287,869.2 m³/ per year (PDD, page 9).	Verified oil invoices (oil price, consumption), and verified the natural gas price (CSPE N°297). Corrections were presented in version 2 of the PDD. NIR 9 was closed out. Copy of the "Portaria CSPE N°297 was provided". NIR 10 was closed out.		
Verify how the efficiency of 90% mentioned in the page 9 was measured.	The efficiency of 90% was provided by the Boilers manufacturer.	Site visit/DR/I	No
Verify if the meters are installed (one meter for each boiler and one meter used for Congas?). Check: specification of the meters, range and accuracy, calibration plan and calibration certificates. Check units: the volume provided by readings is in m³ or other unit? Correction for normal conditions or conversion of units is needed?	Gas meter: SEVC-D Minicor 210, 2-10 bar, m³, serial number EP28315. It was raised an internal corrective action to include the gas meter calibration as a responsibility of the quality management system of the MD plant and not only Comgás (gas supplier) responsibility. MD prepared a corrective action report in order to solve problem regarding the gas consumed in the industrial kitchen, this consume could not be considered under CDM project and to attend methodology requirements MD plant will install a specific meter to the industrial kitchen. This meter needs to be installed before starting date of the crediting period (be available during verification process).	Site visit/DR	No

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Operational procedures: check if there are procedures defined and implemented; check training records for personnel involved with the project operation and monitoring. Interview people in charge.	Training was developed by COMGAS.	Site visit/DR	No
Verify scope and date of certificate NBR ISO 9001:2000.	Included production and the boilers are under utilities responsibility that is one of 6 process covered by NBR ISO9001:2000 MD Paper certification scope. The certification is issued by Loyd`s with INMETRO, RAB and UKAS seals.	Site visit/DR	No

Annex 2 - Validation Protocol

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

Requirement	Description	
Participation requirements	The participation requirements as set out in Decision 17/CP7 need to be satisfied	Covered in table 1
Baseline and monitoring methodology	The baseline and monitoring methodology complies with the requirements pertaining to a methodology previously approved by the Executive Board	Baseline methodology is covered in table 2 Monitoring methodology is covered in table 4
Additionality	The project activity is expected to result in a reduction in anthropogenic emissions by sources of greenhouse gases that are additional to any that would occur in the	Covered in table 3

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	absence of the proposed project activity	
Monitoring plan	Provisions for monitoring, verification and reporting are in accordance with relevant decisions of the COP/MOP	Covered in table 5
Environmental impacts	Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party;	Covered in table 6
Comments by local stakeholders	Comments by local stakeholders have been invited, a summary of the comments received has been provided, and a report to the designated operational entity on how due account was taken of any comments has been received;	Covered in Table 7
Other requirements	The project activity conforms to all other requirements for CDM project activities in relevant decisions by the COP/MOP and the Executive Board.	Covered in Table 8

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

Further remarks on the use of this document:

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

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

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

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 1 party in this project.	Ok	Ok

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
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	LoA will be sent after the validation process.	Send the validation report to DNA	
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	DR	PDD /UNFCCC web site	Yes, Brazil: ratified on 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	See table 4 of this checklist	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	UNFCCC web site	The PDD was posted on the UNFCCC website until 28 Oct 2006. http://cdm.unfccc.int/Projects/Validation/DB/WF57REQQ3B4EJOYNRN467LQB5IEUUJ/view.html No comments received until now.	Ok	Ok
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance	DR	PDD	No. See CAR 1 and section 8 of this checklist	CAR 1	OK
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA	DR	PDD	The project didn't make use of ODA. There is no Annex I country involved.	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		

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
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	PDD	Yes, the project use the current version and information presented in the PDD could be confirmed through references in the PDD and documents provided.	Ok	Ok
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?	DR	PDD	No. Considering only the information provided in the PDD, the following items could not be verified during the desk study: - prices and consumption of fuel oil and natural gas; - NPV analysis (spreadsheet with formulas, data and assumptions used were not provided); - efficiency of fuels (oil and natural gas) The following documents were verified to confirm the information presented in the PDD: - Invoices January 2005 (all fuel oil invoices from Grigolleto, Shell and Petrobrás suppliers). - Boiler efficiency (document sent from Aalborg – boiler manufacturer). - Portaria CSPE N°297 that mention the gas	NIR 2	Ok. Observation 2

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			price according industrial segment, class and consumption. - Spreadsheet with financial analysis and worksheet with investment made (copy of the invoices). The necessary documentation was provided. NIR 2 was closed out. It was identified a natural gas consumption at industrial kitchen without individual measurement, connected at the same source as the one affected by PDD. MD plant prepare a corrective action report according ISO to: verify the amount of gas consumed in the industrial kitchen; define the meter to be installed; costs; install the specific meter for the gas consumed at the industrial kitchen (RACO 01/06, 30/10/06). CAR 8 was closed out and an observation was raised. Observation 2: MD prepared a corrective action report in order to solve problem regarding the gas consumed in the industrial kitchen, this consume could not be considered under CDM project and to attend methodology requirements MD plant will install a specific	CAR 8	

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			meter to the industrial kitchen. This meter needs to be installed before starting date of the crediting period (be available during verification process).		

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology	PDD	DR	Verified on site: • only oil (and not natural gas) have been used in boilers before the project implementation; oil type used: 1A; • there are no regulations/programs that constrain MD from using oil 1A; •regulations do not require the use of natural gas or any other fuel in the element processes; • the project activity does not increase the capacity of thermal output or lifetime of the element processes during the crediting period; • The proposed project activity does not result in integrated process change.	Ok	Ok
2.2 Is the project boundary consistent with the approved methodology	PDD	DR	Yes. It covers CO2 emissions associated with fuel combustion in two boilers subjected to the fuel switching. Verified on site: two boilers, gas pipeline and gas meter. Gas meter: SEVC-D Minicor 210, 2-10 bar, m³,	Ok	Ok

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			serial number EP28315. Boilers: AR4N, serial number 5062 and 5063.		
2.3 Are the baseline emissions determined in accordance with the methodology described	PDD	DR	Formulas described in PDD comply with the methodology (CO2 from the combustion of oil that would be used in each boiler). The quantity of oil that would be used in the absence of the project activity in each boiler is calculated based on the actual monitored quantity of natural gas combusted in the boiler and the relation of the energy efficiencies and the net calorific values between the project scenario and the baseline scenario. Details about the calculation of BE were not provided, ask for spreadsheet and calculation memory (verified that the section B7, the tables are not completed in the lines "Value of data applied for the purpose of calculating expected emission reductions"). Check default values with the references. See NIR 2 about additional information regarding the efficiency (one of parameters that is used for BE calculations). Verified the spreadsheet "Cálculo CER e análise econômico financeira". The spreadsheet contains the CER calculation,	NIR 3	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			financial analysis, NPV. NIR 3 was closed out.		
2.4 Are the project emissions determined in accordance with the methodology described	PDD	DR	Formulas described in PDD comply with the methodology. It included CO2 emissions from the combustion of natural gas in each boiler. Verified how the data presented in the PDD were calculated (ask for the calculation memory or spreadsheet). See NIR 2 about efficiency. Check default values with the references. References were confirmed (Balanço Energético Nacional 2005, Comgás 2003). NIR 3 was closed out. See item 2.3	NIR 3	Ok
2.5 Is the leakage op the project activity determined in accordance with the methodology described	PDD	DR	Formulas described in PDD comply with the methodology. Verified how the data presented in the PDD were calculated (spreadsheet). Checked default values with the references. See item 2.3.	NIR 3	Ok
2.6 Are the emission reductions determined in accordance with the methodology described	PDD	DR	Formulas described in PDD comply with the methodology. Verified how the data presented in the PDD were calculated.	Ok	Ok

Table 3 Additionality (Ref: PDD Section B3 and AM)

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	DR	Yes.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	PDD	DR	No. - NPV analysis (spreadsheet with formulas, data and assumptions used were not provided). - Data presented in the cash flow (Annex 3, PDD) should be confirmed during the site visit. - common practice analysis: references mentioned should be confirmed during the site visit - Legal requirements: objective evidence should be collected during the site visit to confirm that there is no legal obligation involved with the fuel switching. See item 1.11 for closed out details. Verified all licenses of the MD plant and there is no legal obligation with the fuel switching.	See NIR 2	Ok
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	PDD	DR	See above. Only two scenarios were selected (continuation of using oil or the project activity do not undertake under the CDM); ACM0009 version 3 require that the project participants consider at least two other additional alternatives: switching from oil to other fuel (such	CAR 4	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			as biomass) and switching from oil to natural gas at a future point in time during the crediting period. These other scenarios were not discussed in the PDD. The provided information (version 2 of the PDD) included all required data complementing the analysis required. The action is accepted and closes out CAR 4.		
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario	PDD	DR	Yes, there is no legal fuel switching obligation, verified the negative NPV and barriers faced.	Ok	Ok

Table 4 Monitoring methodology (PDD Section D and AM)

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 /ACM0009	DR	Yes, see item 2.1.	Ok	Ok
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology	PDD /ACM0009	DR	It is not needed, as the BE are calculated from the combustion of natural gas in the project activity. The quantity of oil that would be used in the absence of the project activity in the boiler is calculated from the actual monitored quantity of natural gas combusted in the boiler and the relation of the energy efficiencies and the net calorific values between the project scenario (use of natural gas) and the baseline scenario (use of	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			oil).		
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology	PDD /ACM0009	DR	The tables presented in the section B.7 are not completed. There are parameters mentioned in the ACM0009 that were not included in the PDD (ex: energy efficiency: fuel efficiency of natural gas used at each process, to be measured monthly; only "The average fuel efficiency" is mentioned; - NCV natural gas (measured or use default values?); the tables presented both information! If they will use default values, there is no measurement or calculation. - EF natural gas: measured or use default value? The tables presented both information! If they will use default values, there is no measurement or calculation. - Important information related to "Value of data applied for the purpose of calculating expected emission reductions" was not included in the tables. The data provided on B.7 section reviewed complement the report as required. The action is accepted and closes out.	CAR 5	OK
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	PDD /ACM0009	DR	No additional parameters are required for leakage monitoring. Use of default values (verified	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			values in the PDD and mentioned references – 1996 IPCC)		
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology	PDD /ACM0009	DR	No QC/QA procedures were mentioned in the section B7. No specific QC and QA were required in the ACM0009, version 3. Observation 1: independent on the methodology not require specific QC/QA, they should be provided to ensure good monitoring. Version 2 of the PDD presents the QA/QC for the monitoring parameters.	Observation 1	Ok

Table 5 Monitoring plan (PDD Annex 4)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts					
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 any environmental or social monitoring plan.	Ok	Ok
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	It is expected that the project will contribute to sustainable development: mitigate greenhouse gas and this is the main objective of the project; make the gas available in the region, people were trained.	Ok	Ok
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	Not applicable.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	The project impact and local legislation is in line	Ok	Ok
5.2 Project Management Planning					
5.2.1 Is the authority and responsibility of project management clearly described?	DR/ site visit	DR/I	It is described in PDD, annex 4. It was checked by interview.	Ok	Ok
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	DR/ site visit	DR/I	It is described in PDD, annex 4. It was checked by interview.	Ok	Ok
5.2.3 Are procedures identified for training of monitoring personnel?	DR/ site visit	DR/I	Company have an internal procedure concerning monitoring that does not include the natural gas consumption. The following procedures were created or revised to attend the CDM project: PRG-MN-002, rev. 2 (Planejamento, Organização e Controle da Manutenção); FOQ-UY.002 R.02 (Boletim diário das caldeiras); PMIE (Planilha de Monitoramento de Indicadores de Eficácia); UT011 (Geração de vapor); DES-UT.001 rev03 (Controle de Documentos Externos – Utilidades); DES-UT.003 rev04 (Tabela de registro da qualidade – Processo 5). It was raised an internal corrective action to include the gas meter calibration as a responsibility of the	CAR 7	OK

CHECKLIST QUESTION		Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
				quality management system of the MD plant and not only Comgás (gas supplier) responsibility. Operators were trained in order to work with natural gas. CAR 7 was closed out.		
5.2.4	Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	DR/ site visit	DR/I	No procedure had been identified for emergency preparedness. See item 5.2.3. CAR 7 was closed out.	CAR 7	OK
5.2.5	Are procedures identified for calibration of monitoring equipment?	DR/ site visit	DR/I	The actual procedures do not include the Natural Gas equipments. See item 5.2.3. CAR 7 was closed out.	CAR 7	OK
5.2.6	Are procedures identified for maintenance of monitoring equipment and installations?	DR/ site visit	DR/I	The actual procedures do not include the Natural Gas equipments. See item 5.2.3. CAR 7 was closed out.	CAR 7	OK
5.2.7	Are procedures identified for monitoring, measurements and reporting?	DR/ site visit	DR/I	The actual procedures do not include the Natural Gas equipments. See item 5.2.3. CAR 7 was closed out.	CAR 7	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)	DR/ site visit	DR/I	The actual procedures do not include the Natural Gas equipments. See item 5.2.3. CAR 7 was closed out.	CAR 7	OK
5.2.9	Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	DR/ site visit	DR/I	MD paper quality system establishes this kind of actions.	Ok	Ok
5.2.10	Are procedures identified for review of	DR/ site	DR/I	MD paper quality system establishes this kind of	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
reported results/data?	visit		actions.		
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	DR/ site visit	DR/I	MD paper quality system establishes this kind of actions.	Ok	Ok
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	DR/ site visit	DR/I	Monthly an internal meeting discusses all data regarding utilities process and check the performance of them.	OK	Ok
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	DR/ site visit	DR/I	MD paper quality system establishes this kind of actions.	Ok	Ok

Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation)

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	No. It was merely informed in the PDD: "According to a preliminary consultation to the Environmental Agency of São Paulo State (CETESB), CETESB won't oppose to the proposed fuel switching project. A formal licensing process according to Brazilian regulations will be carried out in due time." Additional information should be verified on site about analysis of environmental impacts and about the legal requirements applied to the project. Company is acquiring a software system for law monitoring.	NIR 6	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			The installation license requirement is under elaboration and the number was provided: LP 29001355, LI 29002750 requested on 26/10/2006. MD sent a letter to environmental agency (CETESB) on 12 January 2006 informing the fuel switch from fuel oil to natural gas in the boilers. Environmental agency (CETESB) sent an answer on 13/02/2006 informing that agree with project implementation.		
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR	No requirements for EIA. See above. The information provided in the PDD is not conclusive. Additional information should be verified. To obtain the installation license EIA was not required. NIR 6 was closed out.	NIR 6	Ok
6.3 Will the project create any adverse environmental effects?	PDD	DR	No adverse environmental effects had been identified.	Ok	Ok
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	No transboundary environmental impacts had been identified.	Ok	Ok
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	No significative environment impacts had been identified.	Ok	Ok
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	According Environmental agency licenses of the project comply with local legislation (old licenses and new license	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			requested).		

Table 7 Comments by local stakeholders (Ref PDD Section G)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	Yes, list of stakeholders was presented in the PDD.	Ok	Ok
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	Yes, verified the letters sent in local language to local stakeholders.	Ok	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	List of stakeholders was presented in the PDD and comply with Resolução n°1. Copy of the letters and delivery receipt was provided.	Ok	Ok
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	Yes. Comments received are favourable to the project.	Ok	Ok
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	Received comments supporting the project.	Ok	Ok

Table 8 Other requirements

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	The project should correctly complete a Project Design Document, using the current version and exactly following the guidance, without modifying/adding headings or logo, format or font. The specific requirements should be addressed under each header. The PDD presented changes in the first page of the	CAR 1	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			template (it is used version 3); there are mistakes (repetitions) under section A.4 (name of the country and map). The information provided in the version 2 of the PDD solves the no conformities detected as required. CAR 1 was closed out.		
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	See item 8.1.1	CAR 1	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	No.	Ok	Ok
8.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR	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	Operators were trained in order to work with natural gas (18/07/2006).	Ok	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	Aalborg (boiler manufacturer) sent an email informing that the lifetime of the boiler is 25 years. The boilers were installed in 1999 (lifetime until 2024) and the project	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			finishes in 2017. The project starts on 01/01/2005. This data was confirmed by the "Process indicators".		
8.3.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Fixed crediting period of 10 years.	Ok	Ok
8.3.3 Does the project's operational lifetime exceed the crediting period	PDD	DR	Yes	Ok	Ok

Table 9 Additional requirements for SSC projects – N/A

Table 10 Additional requirements for AR projects – N/A

Table 11 Additional requirements for SSC AR projects – N/A

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Verify the contractual negotiation with Comgás - the gas natural supplier - and the development of the project's engineer (confirm starting date of the proejct and what are both parts obligations).	Site visit	DR	Only the pipeline was paid by natural gas supplier. The other investments were MD Paper investments. Verified the "MD Papeis – Investment data".	Ok	Ok
Verify the specifications of the two Aalborg fuel oil-fired boilers. Check if they comply with description on table 1, page 6 PDD. The boilers were able to use natural gas **BEFORE t**he project activity (check manufacturer information)? If so, what were the conversion needs?	Site visit	DR	Verified the boilers description. Changes were necessary to use natural gas: new control equipments, gas pipeline. The boilers were projected to use fuel oil and natural gas, but no gas has been used before project implementation at MD boilers. The boilers were installed in 1998 and since this date only fuel oil 1A was used. To	Ok	ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			introduce the use of natural gas some changes were necessary: installation internal gas pipeline, adaptation in the internal operation system of the boilers and natural gas.		
The PDD mentioned that the company "Also makes natural gas available in the region where the plant is located". Check what it means and what are the actions carried out by MD that support this statement.	Site visit	DR	The pipeline cross Caieiras city to achieve the end of pipe at MD plant.	Ok	Ok
Verify on site evidences that the plant used fuel oil in the past (see the diagram of page 6 PDD; check the oil tanks, invoices of oil suppliers, interview people etc).	Site visit	DR	Heavy oil had been use during many years in 2 boilers. Verified the deactivated oil tanks, oil pipeline, oil control panel in the operation room. Verified oil invoices.	Ok	Ok
The PDD stated that "the decision of MD Papéis in choosing the natural gas is not forced nor restricted by any legal requirement and the proposed project activity is not the only alternative, as the company would continue to use the oil fuel." Verify: is there any legal requirement related to the fuel switching? Check environmental license (current and other licenses in the past; check if there is some condition required by Cetesb relate to emissions or use of fuel oil). Verify the L.O. 29002527) valid until 26/12/2006 and ask copy.	Site visit	DR	Verified that there is no legal requirement for the fuel switch. The current license is under process, but the environmental agency was notified about the fuel switch project in January 2006. Verified licenses in the past and all licenses did not require the fuel switch (verified licenses from 1996-2005).	Ok	Ok
Check source/reference and confirm prices of fuel oil: 0.59712 R$/Kg (61.88 R$/Gcal) and total consumption: 16,840,000 Kg/ per year mentioned in PDD page 9 (invoices of suppliers?). Check source/reference and confirm price of Natural Gas Price: 0.56791 R$/$m^3$ (62.65R$/Gcal) (CSPE?) and estimated consumption of 17,287,869.2 m^3/ per year (PDD, page 9).	Site visit	DR	On PDD page 9, step 4 the gas volume indicated is bigger than indicated on supplier x MD Paper contract. NIR 9 was raised. PDD is not clear to indicate into which class on CSPE legislation MD Paper is classified. NIR 10 was raised.	NIR 9 NIR 10	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Verified oil invoices (oil price, consumption), and verified the natural gas price (CSPE N°297). Corrections were presented in version 2 of the PDD. NIR 9 was closed out. Copy of the "Portaria CSPE N°297 was provided". NIR 10 was closed out.		
Verify how the efficiency of 90% mentioned in the page 9 was measured.	Site visit	DR/I	The efficiency of 90% was provided by the Boilers manufacturer.	Ok	Ok
Verify if the meters are installed (one meter for each boiler and one meter used for Congas?). Check: specification of the meters, range and accuracy, calibration plan and calibration certificates. Check units: the volume provided by readings is in m³ or other unit? Correction for normal conditions or conversion of units is needed?	Site visit	DR	Gas meter: SEVC-D Minicor 210, 2-10 bar, m³, serial number EP28315. It was raised an internal corrective action to include the gas meter calibration as a responsibility of the quality management system of the MD plant and not only Comgás (gas supplier) responsibility. MD prepared a corrective action report in order to solve problem regarding the gas consumed in the industrial kitchen, this consume could not be considered under CDM project and to attend methodology requirements MD plant will install a specific meter to the industrial kitchen. This meter needs to be installed before starting date of the crediting period (be available during verification process).	Ok	Ok

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Operational procedures: check if there are procedures defined and implemented; check training records for personnel involved with the project operation and monitoring. Interview people in charge.	Site visit	DR	Training was developed by COMGAS.	Ok	Ok
Verify scope and date of certificate NBR ISO 9001:2000.	Site visit	DR	Included production and the boilers are under utilities responsibility that is one of 6 process covered by NBR ISO9001:2000 MD Paper certification scope. The certification is issued by Loyd`s with INMETRO, RAB and UKAS seals.	Ok	Ok

Annex 3 - FINDINGS OVERVIEW

Findings from validation of Fuel Switch Project in Caieiras, SP, Brazil – CDM.VAL0598

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

Description of table:

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

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

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

Date:08/10/2006 Raised by: Aurea Nardelli

No.	Type	Issue	Ref
1	CAR	The project should correctly complete a Project Design Document, using the current version and exactly following the guidance, without modifying/adding headings or logo, format or font. The specific requirements should be addressed under each header. The PDD presented changes in the first page of the template (it is used version 3); there are mistakes (repetitions) under section A.4 (name of the country and map).	1.6/8.1.1/8.1.2
Date: 18/10/2006 [Comments] The PDD was changed to apply the latest template version 3.1 from 31 July 2006 The footer, the map and the repeated name of the country were excluded			
Date: 17/11/2006 - Aurea Nardelli [Acceptance and close out] The new version of the PDD (client's PDD version 2) presented the correct completion of the document using the current template (CDM template version 3). CAR 1 was closed out.			

Date: 08/10/2006 Raised by: Aurea Nardelli

No.	Type	Issue	Ref
2	NIR	The PDD did not use reliable information that could be verified in an objective manner. The discussion on the additionality was not clear and had been not supported by objective evidences. The step 1 was not discussed, as required by the methodology. The sensibility analysis was not carried out comparing the baseline scenario and the project activity without CERs. Considering only the information provided in the PDD, the following items could not be verified during the desk study: - prices and consumption of fuel oil and natural gas; - NPV analysis (spreadsheet with formulas, data and assumptions used were not provided); - efficiency of fuels (oil and natural gas).	1.11/3.1/3.2
Date: 01/11/2007 [Comments]: The documents regarding the prices of fuel oil and the efficiency of the fuels will be sent to SGS by post. The spreadsheet with formulas, data and assumptions used in the financial analysis will be sent to SGS by e-mail. Furthermore, there was a mistake on the natural gas price. The price of natural gas considered on the last version of the PDD (version 01) was based on Portaria CSPE - 297, from 28-5-2004, industrial segment class 11. The correct price is referred to industrial segment class 10, because the consumption is below 2,000,000.00 m^3. It was changed in the version 3. According to the equipment supplier (Aalborg Industries), the boiler efficiency using fuel oil as well as using natural gas is 89% (more 1% or less 1%).			

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Date: 27/02/2007 – Aurea Nardelli [Acceptance and close out] : The following documents were verified to confirm the information presented in the PDD: - Invoices issued in January 2005 (fuel oil invoices from suppliers: Grigolleto, Shell and Petrobrás). - Boiler efficiency (document sent from Aalborg – boiler manufacturer), confirming the value of 90% . - Portaria CSPE N°297 that mention the gas price according industrial segment, class and consumption. - Spreadsheet with financial analysis and worksheet with data about the investment on the project activity. NIR 2 was closed out. See also CAR 4 regarding discussion and identification of baseline scenario.

Date: 08/10/2006 Raised by: Aurea Nardelli

No.	Type	Issue	Ref
3	NIR	Formulas described in PDD are in compliance with ACM 0009 (version 3), but additional information are needed to verify if the baseline emissions, project emissions, leakage and emissions reductions have been determined in accordance with the methodology. Details about the calculation of data presented in the PDD were not provided during the desk study (spreadsheet with formulas, conversion factors)	2.3/2.4/2.5/2.6
Date: 18/10/2006 [Comments] The spreadsheet with formulas and conversion factors was included on the PDD and a separate Excel file will be forward to SGS			
Date: 17/11/2006 - Aurea Nardelli [Acceptance and close out]: Verified the spreadsheet “Cálculo CER e análise econômico financeira”. The spreadsheet contains the CER calculation, financial analysis, NPV. The references of information mentioned on the documents were confirmed (Balanço Energético Nacional 2005, Comgás 2003). NIR 3 was closed out.			

Date: 08/10/2006 Raised by: Aurea Nardelli

No.	Type	Issue	Ref
4	CAR	It is required that the selected baseline represents the most likely scenario among other possible and/or discussed scenarios. Only two scenarios were selected and discussed in the PDD: continuation of using oil or the project activity do not undertake under the CDM. ACM0009 version 3 require that the project participants consider at least two other additional alternatives: switching from oil to other fuel (such as biomass) and switching from oil to natural gas at a future point in time during the crediting period. These other scenarios were not discussed in the PDD.	3.3/3.4
Date: 18/10/2006			

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[Comments] The other two scenarios were included. Clear explanations of why these alternatives are not feasible were also provided in the PDD. Date: 07/02/2007 [Comments]: The manual will be sent to SGS by e-mail. The documentation required related to the barrier analysis was provided in the PDD.
Date: 02/02/2007 – Aurea Nardelli [Acceptance and close out]: The four scenarios were mentioned in the revised PDD, but CAR 4 remains open, as there are issues not completely addressed: - ACM0009, Step 4 of the "Identification of the baseline scenario" requires comparing the NPV of the different scenarios and to select the most cost-effective scenario (with the highest NPV) as the baseline scenario. In addition, requires including a sensitivity analysis applying Sub-step 2d of the latest version of the "Tool for demonstration assessment and of additionality". This analysis was not presented. - It was mentioned on the PDD that "the alternatives 1 and 4 don't face any prohibitive barrier. However, the alternative 2 faces technical barriers as biomass is not available and also the burning of it in the boiler is not operational efficient or even possible. According to the equipment's manual (supplied by Aalborg Industries), the flame tube boiler only works with fuel oil or natural gas. The utilization of biomass in flame tube boilers would generate residues inside the equipment. Generally, the biomass boiler is a water tube type". Please provide copy of the manual which support this information. - It was mentioned on the PDD that "the alternative 3 also faces prohibitive barriers as the determination of the future prices of natural gas and fuel oil is not accurate, mainly due to a lot of uncertainties involving the domestic and international markets that affect direct or indirectly the fuels price." No documented evidence, references or details were provided under this section of the PDD to support this discussion of barriers.
Date: 27/02/2007 – Aurea Nardelli [Acceptance and close out]: - A spreadsheet with sensitivity analysis was provided. This analysis was carried out considering changes of the interest rate (10.3% - 14.3%). Under these plausible conditions, the sensitivity analysis supported the results of the economic analysis (NPV analysis comparing gas natural and fuel oil). - Copy of the page "Part 1 - General description" of the manual of the boiler was provided. It mentioned the following fuel that could be used: oil 1A/3A and natural gas. Considering the other evidences collected on-site, it was confirmed that biomass could not be used in the boilers. equipment could not be used . - the revised PDD was provided (section B.4, step 3), including details in the barriers discussion that affect the alternative scenarios. It was included the uncertainties involving the domestic and international markets that affect direct or indirectly the fuels price, supported by references and literature of the sector. CAR 4 was closed out.

Date: 08/10/2006 Raised by: Aurea Nardelli

No.	Type	Issue	Ref
5	CAR	The PDD should provide for the monitoring of the project emissions as	4.3

		required in the monitoring methodology. The tables presented in the section B.7 of the PDD are not completed. There are parameters mentioned in the ACM0009 that were not included in the PDD (ex: energy efficiency: fuel efficiency of natural gas used at each process, to be measured monthly; it was included only "The average fuel efficiency"). - NCV natural gas: it will be measured or use default values? The tables presented both information. If default values will be used, there is no measurement or calculation. The same for EF natural gas. - Important information related to "Value of data applied for the purpose of calculating expected emission reductions" was not included in the tables.	
Date: 18/10/2006 [Comments] : The tables presented in the section B.7 of the PDD were completed: - The fuel efficiency of natural gas was included - The NCV of natural gas will be given by the natural gas supplier (Comgás) - Value of all data applied for the purpose of calculating expected emission reductions were included Date: 27/02/2007 [Comments] : The NCV of natural gas will be given by the natural gas supplier (Comgás). Copy of the declaration signed by Comgás representative, informing that the value of 9065kcal/m³ was sent to SGS.			
Date: 02/02/2007: Aurea Nardelli [Acceptance and close out] : <u>CAR 5 remains open:</u> Clarify the source of the NCV of natural gas and of fuel oil used for CERs calculation and consequently, used to calculate the volume of natural gas to be considered in the economic analysis. The value informed by the natural gas supplier (see Portaria CSPE n° 297) is 9400 kcal/m³. The value applied in the project was 9065kcal/m³. The difference between these values has impact on the economic analysis, on the project additionality discussion and on the CERs calculation. Date: 27/02/2007: Aurea Nardelli [Acceptance and close out]: The following documents were provided by MD Papéis: a message sent on 06/02/2007 by Comgás (signed by Celso Horvath Jr.) to MD Papéis, informing that the NCV varies around 9065kcal/m³; and the results of an analysis of the natural gas supplied in January 2007 to MD Papéis (analysis carried out by Comgás laboratory, reported on 09/02/2007) where the average value of NCV for January 2007 was informed as 8606kcal/m³. It was confirmed that the value applied for estimative of the baseline and for economic analysis was conservative. <u>CAR 5 was closed out</u>.			

Date: 08/10/2006 Raised by: Aurea Nardelli

No.	Type	Issue	Ref
6	NIR	Additional information is required regarding the analysis of the environmental impacts of the project activity. Information provided in the PDD was not clear about environmental studies/impacts of the project and about legal requirements. No installation license or the requirement for state environmental agency	Section 6

		was identified yet.	
Date: 01/11/2006 [Comments] : The installation license has already been required and until 15 days it will be provided by the environmental agency of State of São Paulo – CETESB.			
Date: 17/11/2006 – Fabian Gonçalves/Aurea Nardelli [Acceptance and close out]: The process of licensing is on-going. The licenses: LP 29001355, LI 29002750 were requested on 26/10/2006, as verified on-site by the local assessor. MD sent a letter to environmental agency (CETESB) on 12 January 2006 informing about the fuel switch from fuel oil to natural gas in the boilers. Environmental agency (CETESB) sent an answer on 13/02/2006 informing that agree with project implementation. The project is in compliance with the environmental legal requirements. NIR 6 was closed out.			

Date: 10/10/2006 Raised by: Rogerio Carvalho/Fabian Gonçalves

No.	Type	Issue	Ref
7	CAR	No Procedure was identified for: - Calibration of monitoring equipment; The company calibration procedure does not include the Natural Gas meter on the calibrated equipments list; - Monitoring measurements and reporting; internal procedures do not include COMGAS natural gas monthly consumption report as a controlled document as the same of internal daily boiler operation report (PRG-SQ-005, rev.01). - Day-to day records handling; there is no reference of boilers or natural gas maintenance process on company quality management system (PRG-MN-002, rev. 1). There is no reference to guarantee that all records regarding PDD will be kept safety and in order along project required period (at least 12 years) – (IOP-UT-010). - No procedure had been identified to assure the emergency preparedness.	5.2.4/ 5.2.5/5.2.6/ 5.2.7/5.2.8/ Table 12
Date: 01/11/2006 [Comments] : The documents related to these procedures are sending by post			
Date: 17/11/2006 – Fabian Gonçalves /Aurea Nardelli. [Acceptance and close out]: The following procedures were provided: PRG-MN-002, rev. 2 (Planejamento, Organização e Controle da Manutenção); FOQ-UY.002 R.02 (Boletim diário das caldeiras); PMIE (Planilha de Monitoramento de Indicadores de Eficácia); UT011 (Geração de vapor); DES-UT.001 rev03 (Controle de Documentos Externos – Utilidades); DES-UT.003 rev04 (Tabela de registro da qualidade – Processo 5). The company raised an internal corrective action to include the gas meter calibration as a responsibility of the quality management system of the MD plant and not only Comgás (gas supplier) responsibility. CAR 7 was closed out.			

Date: 10/10/2006 Raised by: Rogerio Carvalho/Fabian Gonçalves

No.	Type	Issue	Ref
8	CAR	It was identified that the plant industrial kitchen consumes natural gas from the same pipeline of the project activity and there is not meter installed to quantify its individual consumption. The kitchen is not included in the project activity boundary.	2.2

Date: 01/11/2006 [Comments] : The documents are sending by post.
Date: 17/11/2006 - Fabian Gonçalves / Aurea Nardelli. [Acceptance and close out]: The company prepared an internal corrective action report according to ISO standard aiming to verify the amount of gas consumed in the industrial kitchen; define the meter to be installed; costs; and a plan to install the specific meter for the gas consumed at the industrial kitchen (RACO 01/06, 30/10/06). CAR 8 was closed out and an observation (2) was raised.

Date: 10/10/2006 Raised by: Rogerio Carvalho/Fabian Gonçalves

No.	Type	Issue	Ref
9	NIR	On PDD page 9, step 4 the gas volume indicated is bigger than indicated on supplier x MD Paper contract.	Table 12
Date: 01/11/2006 [Comments] :For the preliminary calculation of the PDD the volume of natural gas considered is the volume necessary to meet the historic energy need of the plant (from 2005) – that used to be met by the diesel oil consumption in the baseline scenario – instead of the minimum volume indicated in the contract.			
Date: 17/11/2006 – Fabian Gonçalves / Aurea Nardelli. [Acceptance and close out] : The explanation provided by the company was accepted. The calculation and factors used to estimate the volume of natural gas were provided. The volume reported in the PDD was confirmed. NIR 9 was closed out.			

Date: 10/10/2006 Raised by: Rogerio Carvalho/Fabian Gonçalves

No.	Type	Issue	Ref
10	NIR	PDD is not clear to indicate into which class on CSPE legislation MD Paper is classified.	Table 12
Date: 18/10/2006 [Comments] : It was included in the PDD that MD Papéis is classified as Industrial segment, class10			
Date: 17/11/2006 – Fabian Gonçalves / Aurea Nardelli. [Acceptance and close out]: Copy of the “Portaria CSPE N°297” was provided. The class of consumption was confirmed as class 10. NIR 10 was closed out.			

Observations:

1. No specific QC and QA were required in the ACM0009, version 3. But independent on the methodology not require specific QC/QA, they should be provided to ensure good monitoring and reporting.

2. MD prepared an internal corrective action report in order to solve problem regarding the gas consumed in the industrial kitchen, as this consumption must not be considered under CDM project activity (it is out of the project boundary). Accordingly to this internal report, MD will install a specific meter for the natural gas consumption by the industrial kitchen. This meter shall be installed before the starting date of the crediting period.

Annex 4: Team Competency Statements

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Statement of Competence

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

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: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

Statement of Competence

Name:Rogerio Carvalho SGS Affiliate:Latin America

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: 05-07-2007