
VALIDATION REPORT

Cimento Mizu

Production of blended cement with blast furnace slag at Cimento Mizu

SGS Climate Change Programme

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

Date of issue:	Project No.:
05-10-2006	CDM.Val0384
Project title	Organisational unit:
Production of blended cement with blast furnace slag at Cimento Mizu	SGS Climate Change Programme
Revision number	Client:
01	Cimento Mizu

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 Cimento Mizu and a site visit to Cimento Mizu industrial unit located in Mogi das Cruzes, São Paulo, Brazil, where staff from the company and its consultant were interviewed.

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.

The estimated amount of emission reductions for the first crediting period (from year 2005 to 2011) is 422,593 t CO₂e.

The Letter of Approval from the government of Brazil was issued on 21 December 2006.

Subject.:		
CDM validation		Indexing terms
Work carried out by		
Aurea Nardelli, Fabian Gonçalves		
Technical review		
Irma Lubrecht.		<input checked="" type="checkbox"/> No distribution without permission from the Client or responsible organisational unit
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M. van der Linden		<input type="checkbox"/> Limited distribution
Date of final decision:	Number of	
10-01-2007	14	<input type="checkbox"/> Unrestricted distribution

Abbreviations

AM	Approved Methodology
ACM	Approved Consolidated Methodology
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	Clean Development Mechanism Executive Board
CER	Certified Emission Reduction
CETESB	State Environmental Agency
COP/MOP	Conference of the Parties serving as Meeting of the Parties
DNA	Designated National Authority
EF	Emission Factor
IETA	International Emission Trading Association
MP	Monitoring Plan
NIR	New Information Request
PDD	Project design Document
SGS	Société Générale de Surveillance
SNIC	Sindicato Nacional da Indústria do Cimento
UNFCCC	United Nations Framework Convention on Climate Change

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1. Introduction

1.1 Objective

Cimento Mizu has commissioned SGS to perform the validation of the project: Production of blended cement with blast furnace slag at Cimento Mizu 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

The project activity is the construction and operation of a new cement plant dedicated to the production of Portland Blast Furnace Slag Cement in Mogi das Cruzes, São Paulo.

The project activity is the use of blast furnace slag share in the production of cement, resulting in the reduction of the amount of clinker per tonne of blended cement and corresponding emissions.

The blast furnace slag is a residue of pig iron production similar to sand, that has properties similar to clinker and that can be used, under certain conditions, as clinker substitute. With the substitution of clinker, greenhouse gases emissions are reduced because of the decrease of emissions in the calcination of limestone and due to the reduction of fossil fuels consumption in the kiln.

The estimated amount of emission reductions for the first crediting period (from year 2005 to 2011) is 422,593 t CO₂e

Baseline Scenario:

In the baseline scenario, the cement would be produced with a higher share of clinker, instead of the use of blast furnace slag.

With-project scenario:

The project activity is the increase of blast furnace slag share in the production of cement, resulting in the reduction of the amount of clinker per tonne of blended cement and corresponding emissions reductions. Two major components reduce greenhouse gases emissions: reduction of energy consumption in the production of clinker and reduction of CO₂ emissions derived from the calcination of limestone.

Leakage:

Leakage is considered according to ACM0005 "Consolidated Baseline Methodology for Increasing the Blend in Cement Production" – Version 3.

Emissions due to fuel use for the transport of raw materials and fuels from offsite locations to the project plant are likely to decrease due to the implementation of the project. Following ACM0005, in order to keep emissions reductions conservative, this change is not included.

Emissions due to fuel use for the transport of additives from offsite locations to the project plant are likely to increase. These emissions are accounted as leakage, following the equations defined in the methodology.

Another potential leakage is due to the diversion of additives from existing uses. As the slag used is surplus, it is expected that this source of leakage will not affect calculations.

The estimated leakage for the first crediting period is 11,837 t CO₂e.

Environmental and social impacts:

It was verified during the validation desk study and on site that Cimento Mizu plant are in compliance with the environmental legal requirements and received the Installation license n° 26000922 issued by CETESB (State Environmental Agency – São Paulo) on 09/06/2003 and the Operation license n° 26000733, issued by CETESB on 14/03/2005.

The atmospheric emissions, wastewater generation and solid residues final disposal of the Mizu plant were approved by the environmental agency as of the issuance of the operation license.

The project is not expected to result in negative environmental and social impacts.

Positive (direct and indirect) impacts are identified as a project activity contribution:

- the reduction of energy consumption in the cement manufacture chain;
- the increase of blast furnace slag use reduces energy demand in cement manufacture and mining of limestone and also helps in the conservation of non-renewable reserves of limestone;
- the reduction of fossil fuel consumption can result in the reduction of local air pollution;
- the reduction of limestone mining activities, resulting in local environmental benefits, such as, mitigation of local air pollution, reduction of biodiversity loss, and soil and landscaping conservation at mining sites;
- helping to mitigate problems related to the final disposal of slag, an industrial residue.

1.4 The names and roles of the validation team members

Name	Role
Aurea Nardelli	Lead Assessor
Fabian Gonçalves	Local Assessor
Irma Lubrecht	Technical Reviewer

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
<i>The various requirements are linked to checklist questions the project should meet.</i>	<i>Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.</i>	<i>This is either acceptable based on evidence provided (Y), or a 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.</i>

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

2.3 Findings

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

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

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

is issued, where:

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

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

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

Corrective Action Requests and New Information Requests are raised in the draft validation protocol

and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to “close” outstanding CARs and respond to NIRs and Observations.

2.4 Internal quality control

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

3. Determination Findings

3.1 Participation requirements

The project participants are Cimento Mizu (Brazil) and Ecoinvest Carbon Brasil Ltda. (Brazil). Brazil is listed as the host Party. Brazil has ratified the Kyoto Protocol on 23rd August 2002 (http://unfccc.int/files/essential_background/kyoto_protocol/application/pdf/kpstats.pdf).

At time of the validation, no Letter of Approval from the host country had been provided.

The Letter of Approval will be signed when the DNA of Brazil has received and analysed the validation report. The Letter of Approval was issued on 21 December 2006.

Annex I Party participants are not identified yet.

3.2 Baseline selection and additionality

The baseline methodology applied to the project activity is ACM0005 “Consolidated Baseline Methodology for Increasing the Blend in Cement Production” (version 3).

ACM0005 is applicable to projects that increase the share of additives (i.e. reduce the share of clinker) in the production of cement types beyond current practices in the country. In the case of Cimento Mizu project, the increase in the share of additives and corresponding reduction in the share of clinker in the production of cement types occurs due to the use of blast furnace slag.

The methodology is applicable under the following conditions:

- There is no shortage of additives related to the lack of blending materials: Project participants demonstrated that there is no alternative allocation or use for the additional amount of additives used in the project activity. Blast furnace slag is produced by the steel and iron industry in the region of the project activity and if the slag was not used as additive in cement manufacture, it would likely be disposed in landfills. As verified during the validation process, Cimento Mizu has long term purchase agreements with slag suppliers. Shortage of slag is very unlikely and the alternative allocation for it would be landfilling.
- It is applicable to domestically sold output of the project activity plant and excludes export of blended cement: The production of the plant included in the project activity is sold domestically, as confirmed by interviews with project managers and by document review.
- Adequate data are available on cement types in the market: Two associations can provide reliable and publicly available information about the cement industry in Brazil: ABCP – Associação Brasileira de Cimento Portland (Brazilian Association of Portland Cement) and SNIC – Sindicato Nacional da Indústria do Cimento (National Association of the Cement Industry). Both organizations have information publicly available in their websites and periodical reports.

The project boundary complies with ACM0005 and includes the cement production plant, any onsite power generation, and the power generation in the grid. Three emission sources are considered:

- Direct emissions at the cement plant due to fuel combustion for firing the kiln and on-site generation of electricity.
- Direct emissions due to calcination of limestone.
- Indirect emissions from fossil fuel combustion in power plants in the grid due to electricity use at the cement plant for: crushing and grinding the raw materials used for clinker production; driving the kiln and kiln fans; finish grinding of cement; and processing of additives.

The transport related emissions for the delivery of additional additives are included in the emissions related to the project activity as leakage.

The additionality of the project activity is demonstrated and assessed using the “Tool for the demonstration and assessment of additionality”, from the CDM EB, Version 2. The project described Step 0 (Preliminary screening based on the starting date of the project activity) and Steps 1-5 of the toll (with exception of Step 2 - Investment analysis, which was not undertaken) . The Step 3 – “Barrier Analysis” was used to identify the most plausible scenario among all realistic and credible alternatives to the project activity.

The starting date of the project activity (28/11/2003) was confirmed by documented evidence. The chronogram of the project installation informed the period from 28/11/2003 to 23/11/2004. Additional documents about the starting date of the project operation (01/01/2005) were verified, as evidences of equipment and raw material purchasing in 2004 and in January 2005 (invoices related to purchasing of scale and blast furnace slag).

The company also provided evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity. It was confirmed that Cimentos Mizu is part of Votorantim Cimentos group which is signatory of the Cement Industry Initiative. The information was verified in the company website http://www.votorantim-cimentos.com/responsabilidade/principais_acoes.shtml.

Votorantim is member (since 1999) of the World Business Council for Sustainable Development and of Cement Sustainability Initiative. The company is signatory of an environmental protocol of cement industries and has a commitment to control CO2 emissions and to contribute to mitigate the climate change. Additional evidences that Votorantim has participate in the meetings of cements companies regarding this protocol were verified during the site visit.

During the desk study, additional information was requested about the identified barriers that would prevent the implementation of the project activity (NIR3), as information presented in the PDD was not clear (Barriers in section B.3, sub-step 3a): doubt about applicability of Barrier 1, as no adaptation was needed because the project start together with the plant operation (it was a greenfield project); and doubt regarding Barrier 3 (the same condition described in Barrier 1). With regard to Barrier 4, it was not clear, considering that Cimento Mizu would not need to introduce a new product in the market.

Evidences to support the barrier analyses was presented during the site visit. Barrier 1 (development of logistics for additives supplying, requiring development and control of a new supply chain) and Barrier 2 (Increasing of the production and maintenance costs and productivity decreasing) described in the PDD were confirmed during site visit. It was verified by interviews and document review that the process using slag is more laborious, it is necessary to reduce the productivity, the slag is more abrasive and corrosive, consequently generating wear and tear of the equipments. The slag needs to

be dried before the use in the production, this represent a new step and control in the process that is not necessary when using clinker. (verified the implemented procedures: P70051 rev00, 07/12/2005; IT001 rev00, 03/10/2005)

The barriers analysis demonstrated that the proposed project activity (scenario 1) faced barriers that prevent the implementation of this type of project activity; and do not prevent the implementation of other alternatives (scenarios 2 and 3). It was concluded from the barriers analysis that the scenario 3 is the most likely baseline scenario among the 5 alternatives presented. In this scenario, the mill increases the use of blast furnace slag in a pre-defined rate, lower than the project activity rate.

Sub-Step 3a of Section B.3 of the PDD was revised and included in the last version of PDD). NIR 3 was closed out.

Regarding Step 4 (Common practice analysis), it was only known that there are similar projects to the proposed project activity that belong to the same group - Votorantim Cimentos which owns Cimento Mizu. There is no publicly available information if other companies are using the same practice.

Under the Step 5, it was concluded that the registration of the project activity in the CDM will add positive value to the company and may also result in financial benefits from the revenue obtained by selling CERs, what can help to reduce project costs.

3.3 Application of Baseline methodology and calculation of emission factors

The baseline methodology is used in conjunction with the approved consolidated monitoring methodology "Consolidated Monitoring Methodology for Increasing the Blend in Cement Production" (ACM0005).

It was verified that the project fulfils the conditions under which the methodology is applicable. The formulas required by the methodology for calculation of baseline and project emissions, for leakage and for determining the emissions reductions were detailed in the PDD and correctly applied.

3.4 Application of Monitoring methodology and Monitoring Plan

The PDD provided for the monitoring of the baseline emissions, project emissions and leakage as required in the monitoring methodology. Details about the data to be collected were presented under Section D of PDD.

During the desk study, no information about training requirements was identified in the documentation provided by the project developer. CAR 02 was raised. It was verified during the site visit and by interviews with project managers and operators that the personnel of Cimento Mizu has received adequate training for regular operation of the plant. The CDM project is part of the Mizu activities. It was verified that specific instructions were defined for the site Process Engineer. CAR 2 was closed out.

During the draft validation (document review), it was verified that no procedure for the project management (monitoring, calibration, reporting etc) was described. CAR 4 was raised.

To close out CAR 4, the following information about monitoring was provided:

- The site Process Engineer will be responsible for acquiring the set of monitoring data and feed them into the Excel spreadsheet "Cimento Mizu – CERs Calculation.xls". The set of data is obtained from the following sources:

1 – Electronic supervisory system used in plant operations: production of clinker, production of blended cement, consumption of additives, electricity consumption, self generated electricity, fuel consumed for self generated electricity.

2 – Sales receipts: fuel purchased, slag purchased, cement sold.

3 – Laboratory: CaO and MgO contents of clinker and raw material.

4 – Transportation supplier: quantity of slag transported, fuel consumption in transportation and distance covered in transportation.

- Cimento Mizu will submit the data to Ecoinvest so that a revision is made in order to verify inconsistencies in the calculations, before periodic verification. Note that part of the data required in the monitoring is obtained from Votorantim-Santa Helena site that supplies clinker to Cimento Mizu -Mogi das Cruzes.

Section D of the PDD was revised to include the above mentioned information (refer to Section D.4 PDD, version 3). CAR 4 was closed out.

Regarding the monitoring of sustainable development indicators, refer to the section “Environmental impacts” of this report.

3.5 Project design

The project applies the correct PDD format and no modifications have been made to the format. Some corrections regarding translation and format were done in the PDD final version. The information used in the PDD could be verified from the documents and spreadsheets provided during the site visit (see references) and from information available in the internet.

3.6 Environmental Impacts

During the desk study it was verified that the PDD did not present any indicator for monitoring of environmental and/or social impacts. CAR 01 was raised.

For closing-out CAR 1, information was provided about environmental impacts and their monitoring. It was verified that the monitoring of environmental impacts is made according to the requirements of the State Environmental Agency (CETESB). The current environmental licenses were checked by the local assessor and copies were provided to SGS (see Annex 4 of this report, list of references consulted during ground truthing).

In addition, it was verified that:

- The verification of project atmospheric emissions, wastewater generation and solid residues final disposal was approved by the environmental agency as of the issuance of the license.
- Emergency plans and safety programs were developed and implemented, in accordance with Cimento Mizu current practices and environmental regulation.

Regarding sustainable development, Section A.2 of the PDD presents the project activity contribution. CAR 01 was closed out.

3.7 Local stakeholder comments

Local stakeholders have been invited by letters to comment on the Cimento Mizu CDM project.

The invitation was sent on 14/03/2006 and 27/03/2006 to specific stakeholders, considered representative of the general public, as defined by Resolution 1 of the DNA:

- The municipality mayor house of Mogi das Cruzes;
- The municipality chamber;
- The local attorneys' office;
- The Brazilian NGO Forum;
- The state environmental agency (CETESB);
- The municipality's environmental authority;
- Local NGO.

No comments were received from local stakeholders.

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/6FB31JRWI02Z6QDFWURQ4ZCFA4ZQGC/view.html> and were open for comments from 31 Dec 05 until 30 Jan 06. Comments were invited through the UNFCCC CDM homepage.

4.2 Compilation of all comments received

Comment number	Date received	Submitter	Comment
1			

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

4.3 Explanation of how comments have been taken into account

No comments received.

5. Validation opinion

Actions have been taken to close out 4 findings.

SGS HAS PERFORMED A VALIDATION OF PROJECT: Production of blended cement with blast furnace slag at Cimento Mizu.

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 review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria..

By the use of blast furnace slag share in the production of cement, resulting in the reduction of the amount of clinker per tonne of blended cement and corresponding emissions, 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.

6. List of persons interviewed

Date	Name	Position	Short description of subject discussed
13/03/2006	Frankli Fadini Xavier	INDUSTRIAL MANAGER	Project responsibility, technical issues.
13/03/2006	Melissa Hirschheimer	CONSULTANT	PDD development, monitoring plan, baseline.
13/03/2006	Brasilio Padovani	PRODUCTION MANAGER	Operational issues.
13/03/2006	Claudemir Ofrante	Maintenance manager	Operational issues.

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, Production of blended cement with blast furnace slag at Cimento Mizu, version 1 (28/12/2005), version 2 (21/03/2006), version 3 (24/04/2006),

version 4 (29/09/2006).

- /2/ Approved consolidated baseline and monitoring methodology ACM0005 – Consolidated Baseline and Monitoring Methodology for increasing the Blend in Cement Production, 19 May 2006, version 03.

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/ Parecer number 323 COGPI/SEAE/MF, 03/12/2001 issued by Ministério da Fazenda. This document informs that Votorantim Cimentos is the owner of the Cimento Mizu.
- /4/ Invoice 695814, 13/01/2005. Blast furnace slag purchasing document.
- /5/ Controle Operacional Moagem de Cimento, March 2006. Operational control of the cement production.
- /6/ Invoice 997759, 31/08/2004. Scale for slag weighing – purchasing document.
- /7/ Chronogram of the project installation, 28/11/2003 – 23/11/2004.
- /8/ Calibration certificate, 30/01/2006. Certificate for the meter.
- /9/ Procedure IT 003 rev00, 13/03/2006. Calibration procedure.
- /10/ Procedure P9001 rev00, 10/11/2005. Procedure to control equipments, inspection, measurement.
- /11/ Procedure P70051 rev 00, 07/12/2005 and 07/04/2005. Operation procedure for dryer and for the cement mill.
- /12/ Previous license number 26000048, 09/06/2003 issued by CETESB. Environmental license.
- /13/ Installation license number 26000922, 09/06/2003 issued by CETESB. Environmental license.
- /14/ Operation license number 26000733, 14/03/2005 issued by CETESB. Environmental license.
- /15/ Spreadsheet Mizu CERs (version March/2006 and revised versions). Excel file containing: detailed monitoring data (description and values), Emission factor calculation (for electricity) and data used for benchmark analysis.
- /16/ Contract between Votorantim and CSN (slag supplier), 30 April 1991. Blast furnace slag supplier.
- /17/ Contract between Votorantim and Cosipa (slag supplier), 1 May 2001. Blast furnace slag supplier.

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Annex 1 Local assessment checklist

Production of blended cement with blast furnace slag at Cimento Mizu – CDM.Val0384

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 SGS Brazil.

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Verify project installations like described in the PDD.	Mogi das Cruzes plant was visited and installation was verified.	Site visit	No

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Verify documents that prove the start date of the project.	Chronogram of the project installation, 28/11/2003 – 23/11/2004. Evidence of equipment/raw material purchasing: - weigh scale AF TAG M1/2-A, Invoice number 997759, 31/08/2004; - Blast furnace slag, CST Invoice number 695814, 13/01/2005.	Site visit/DR	No
Verify Sustainable Development and Climate Change commitment mentioned in the PDD.	The information was verified in the company website http://www.votorantim-cimentos.com/responsabilidade/principais_acoes.shtml . Votorantim is member (since 1999) of the World Business Council for Sustainable Development and of Cement Sustainability Initiative. The company is signatory of an environmental protocol of cement industries and has a commitment to control CO2 emissions and to contribute to mitigate the climate change. Additional evidences that Votorantim has participate in the meetings of cements companies regarding this protocol were verified during the site visit. Votorantim Cimentos is the owner of Silcar Empreendimentos that uses the commercial name Cimento Mizu.	DR/I	No
Verify documents about transport information, distances, loads and fuel consumption.	Distances are fixed and consequently fuel consumption is fixed to.	Site visit/DR	No
Verify worksheets	The worksheets were verified during the site visit. The tables detailing the information are also included in the	Site visit/DR	No



Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
benchmark analysis, monitored data, emissions factor and project emissions, baseline emissions, leakage and emission reductions, and data were obtained.	PDD and copy (electronic file) was provided to SGS.		

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

Small scale projects and AR projects have specific requirements which are covered in Table 9-11. Small scale SSC projects have special requirements which might deviate from the requirements of

other CDM projects. These requirements are tested in table 9. Please note that some questions in table 9 overlap with questions in the other tables. Where the questions in table 9 contradict or overlap questions elsewhere in the checklist, the questions in table 9 shall prevail. For the validation of small scale projects, assessor is required to address the questions in table 9 first before starting with the questions in the other tables.

Further remarks on the use of this document:

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

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

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

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	DR	PDD	No annex 1 in this project.	Ok	Ok
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily	DR	PDD	No Letter of Approval by host country (Brazil) has been submitted to the validator. The Letter of Approval was issued on 21 December 2006.	Send the validation report to DNA	Ok
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	DR	PDD	Yes, Brazil – date of ratification 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	Yes	Ok	Ok
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited	DR	UNFCCC	PDD publicly available: 31 Dec 05 until 30 Jan	Ok	Ok

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
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		site	06. http://cdm.unfccc.int/Projects/Validation/DB/6FB31JRWI02Z6QDFWURQ4ZCFA4ZQGC/view.html No comments were received.		
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance	DR	PDD	Yes. This project used the current version.	Ok	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 did not make use of ODA.	Ok	Ok
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?			N/a		
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects			N/a		
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment.	DR	PDD	To be confirmed by local assessor. Some changes in the PDD were necessary and the new version reflects all the information presented.	Verify	Ok
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?	DR	PDD	To be confirmed by local assessor. Yes, the information used could be verified from the documents and spreadsheets provided during the site visit (see references) and from information available in the internet www.snica.com.br ; www.abcp.org.br).	Verify	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology	PDD	DR	Verify if the blended cement is commercialized for exportation. See PDD, section B1.1. According to "cement companies annual report" (verified on the website), in 2005 they produced 36 millions tones and export approximately 1 million tone.	Verify	Ok
2.2 Is the project boundary consistent with the approved methodology	PDD	DR	Yes. Only CO2 is considered. The boundary includes the cement production, onsite power generation, and the power generation in the grid.	Ok	Ok
2.3 Are the baseline emissions determined in accordance with the methodology described	PDD	DR	Yes. Formulas required by the methodology were applied. The project uses the alternative baseline scenario that results in the lowest baseline emissions.	Ok	Ok
2.4 Are the project emissions determined in accordance with the methodology described	PDD	DR	Yes, Formulas required by the methodology were applied (see equation 5, PDD). According to ACM0005, version 3, if additional additives used in the project activity needs drying, the fuel combustion used in the drying process shall be accounted. Drying process is being accounted as project emission (as verified in the spreadsheet (Mizu CER 2006, MZMO	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Agosto 2006 and described in the PDD)		
2.5 Is the leakage of the project activity determined in accordance with the methodology described	PDD	DR	<p>Yes. The methodology described three potential leakages:</p> <p>Leakage 1: Emissions due to fuel use for the transport of raw materials and fuels from offsite locations to the project plant; these emissions are likely to decrease due to the implementation of the project. In order to be conservative, it was not included in the calculations.</p> <p>Leakage 2: Emissions due to fuel use for the transport of additives from offsite locations to the project plant; these emissions are likely to increase. They are accounted as leakage and the formulas presented in the PDD are in accordance with the methodology.</p> <p>Leakage 3: This is not applicable to the project.. The methodology defines that another possible leakage is due to the diversion of additives from existing uses. As the slag used is surplus, it is expected that this source of leakage will not affect calculations.</p>	Ok	Ok
2.6 Are the emission reductions determined in accordance with the methodology described	PDD	DR	Yes, equation 4 in the PDD	Ok	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.1 Does the PDD follow all the steps required in the methodology to determine the additionality	PDD	DR	Yes, they used the “Tool for the demonstration and assessment of additionality” (Version 2). Step 3 of the Tool was used to identify the most plausible scenario.	Ok	Ok
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	PDD	DR	<p>No. The barriers presented were not clearly discussed and should be revised.</p> <p>To close out NIR 3, the barriers were revised. Barriers 1 and 2 (Barrier 1: development of logistics for additives supplying, requiring development and control of a new supply chain; Barrier 2: Increasing of the production and maintenance costs and productivity decreasing) described in the PDD were confirmed during site visit. It was verified by interviews and document review that the process using slag is more laborious, it is necessary to reduce the productivity, the slag is more abrasive and corrosive, consequently generating wear and tear of the equipments. The slag needs to be dried before the use in the production, this represent a new step and control in the process that is not necessary when using clinker. (verified the implemented procedures: P70051 rev00, 07/12/2005; IT001 rev00, 03/10/2005)</p> <p>NIR 3 was closed out.</p>	NIR 3	Ok
3.3 Does the selected baseline represent the most likely scenario	PDD	DR	Yes. It was concluded from the barriers analysis	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
among other possible and/or discussed scenarios?			that the scenario 3 is the most likely scenario among the 5 alternatives presented. In this scenario, the mill increases the use of blast furnace slag and/or other additives in a pre-defined rate, lower than the project activity rate. .		
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario	PDD	DR	<p>Yes.</p> <p>The barriers analysis demonstrated that the proposed project activity (scenario 1) faced barriers that prevent the implementation of this type of project activity; and do not prevent the implementation of other alternatives (scenarios 2 and 3).</p> <p>The PDD demonstrated that the benefits and incentives derived from the project activity will alleviate the barriers discussed and will add positive value to the company.</p>	Ok	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	PDD	DR	Yes. It was verified that the project increases the share of additives in the production of cement (using blast slag furnace with clinker) and follow all applicability conditions.	Ok	Ok
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology	PDD	DR	Yes, see PDD section D.2.1	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology	PDD	DR	Yes, see PDD section D.2.1	Ok	Ok
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	PDD	DR	Yes. Monitoring of the emissions due to fuel use for the transport of additives from offsite locations to the project plant (PDD, table D.2.3)	Ok	Ok
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA) Procedures as required in the monitoring methodology	PDD	DR	Yes. All items required in the methodology were described in PDD..	Ok	OK

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts	PDD	DR	There is no information about monitoring of social and environmental indicators. During the site visit, it was verified that the state environmental agency did not require monitoring regarding environmental impacts from the project activity. The sustainable development contribution of the project, listed in section A.2 of the PDD, will be monitored. CAR 1 was closed out.	CAR 1	Ok
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	PDD	DR	See 5.1	See 5.1 and CAR1	Ok
5.1.2 Is the choice of indicators for sustainability	PDD	DR	See 5.1	See 5.1 and	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
development (social, environmental, economic) reasonable?				CAR1	
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	See 5.1	See 5.1 and CAR1	Ok
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	See 5.1	See 5.1 and CAR1	Ok
5.2 Project Management Planning	PDD	DR			
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	DR	Yes. Section D of PDD presented the monitoring plan.	Ok	Ok
5.2.2 Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	PDD	DR	To be confirmed by local assessor. Yes, described in section D.4 of the PDD and confirmed on site.	Verify	Ok
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	DR/I	There is no procedure for training of monitoring personnel. To close out CAR 2, it was explained and evidenced during the site visit that employees receive adequate training of regular operation of the plant, and the CDM project is part of the Mizu activities. It is sufficient for ensure that monitoring personnel carry out their activities. CAR 2 was closed out.	CAR2	Ok
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR	No information was provided about emergency preparedness in case of unintended emissions. To close out CAR 04, it was verified that Cimento	CAR 4	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>Mizu has maintenance and operations procedures, which include the monitoring of process variables and quality control, according to engineering best practices. These procedures can prevent emergencies situations and provide guidance in case of corrective action.</p> <p>This information (about operational and maintenance procedures) was included in the revised PDD, section D.4</p> <p>CAR 4 was closed out.</p>		
5.2.5 Are procedures identified for calibration of monitoring equipment?	PDD	DR/I	<p>No information was provided in the PDD. See CAR 4</p> <p>Procedure for calibration was verified onsite (procedure “Calibração das balanças dosadoras”, IT003 rev00, 13/03/2006).</p> <p>CAR 04 was closed out.</p>	CAR4	Ok
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR	<p>To be confirmed by local assessor.</p> <p>Yes, procedure was verified on site “Controle de equipamentos de inspeção, medição e ensaios”, P 9001 rev00, 10/11/2005.</p>	Verify	Ok
5.2.7 Are procedures identified for monitoring, measurements and reporting?	PDD	DR	<p>To be confirmed by local assessor. No information was provided during the draft validation.</p> <p>Procedures were verified on site and a general description was included in the revised PDD (section D.4). CAR 04 was closed out.</p>	CAR 04	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.2.8 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR	No information was provided during the draft validation. The general procedures were provided in the revised PDD; specific procedure for project operation was verified during the site visit ("Partida, desligamento e ajustes operacionais da moagem de clínquer", P7 0051 rev00, 07/04/2005 and 07/12/2005). CAR 04 was closed out.	CAR 04	Ok
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	DR	No information was provided during the draft validation. Information was provided in the revised PDD (section D.4). Ecoinvest is the responsible for dealing with monitoring data adjustments and uncertainties. See CAR 04 closing out details below.	CAR 04	Ok
5.2.10 Are procedures identified for review of reported results/data?	PDD	DR	No information was provided during the draft validation. See CAR 04 closing out details below. Information was included in the revised PDD (section D.4). It was defined that Ecoinvest is responsible for reviewing the reported data.	CAR 04	Ok
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	DR	.No procedure was presented during the desk study. See CAR 04 closing out details on item 5.2.13	CAR 04	Ok
5.2.12 Are procedures identified for project	PDD	DR	No procedure was presented during the desk	CAR 04	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
performance reviews before data is submitted for verification, internally or externally?			study. See CAR 04 closing out details on item 5.2.13		
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	DR	No procedure was presented during the draft validation. To close out CAR 4, it was informed that Ecoinvest have the responsibility to review all data before each verification. A general procedure was prepared and is being implemented. CAR 4 was closed out.	CAR 04	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	Verify licensing process and the documents issued by CETESB (State environmental agency). Previous license n° 26000048, issued by CETESB on 09/06/2003. Installation license n° 26000922, issued by CETESB on 09/06/2003. Operation license number 26000733, 14/03/2005 issued by CETESB.	Verify	Ok
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR	Verify license. The environmental agency does not require an EIA for the project activity. The environmental licenses were verified and are valid.	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.3 Will the project create any adverse environmental effects?	PDD	DR	It is expected not. The project received the legally required environmental licenses and is in compliance with the State environmental agency requirements related to atmospheric emissions, wastewater generation and solid residues final disposal.	Verify	Ok
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	Specific environmental impacts analysis was not required by the State environmental agency; no significant adverse impact was identified.	Verify	Ok
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	No significant environmental impacts are expected.	Verify	Ok
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	Yes. The required licences were verified and are valid (see Ref.12, 13 and 14).	Verify	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD	DR	Yes.	Ok	Ok
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD	DR	Verify letters. The letters were sent in local language.	Verify	Ok
7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	PDD	DR	Yes. Letters sent on 14/03/2006 and 27/03/2006 to: City Hall of Mogi das Cruzes; Câmara de Vereadores Mogi das Cruzes; State Environmental Agency - CETESB; Local Environmental Agency – Mogi das Cruzes; Local	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			ONG; State Public Attorney; FBOMS (Representative of Brazilian Environmental ONGs)		
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	No comments were received.	Verify	Ok
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	No comments were received.	Verify	Ok

Table 8 Other requirements. All CDM project activities

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	Yes.	Ok	Ok
8.1.2 Substantive issues: does the PDD address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified	PDD	DR	Yes.	Ok	Ok
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR	Yes.	Ok	Ok
8.2.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD	DR	Yes	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	PDD	DR	To be confirmed by local	Verify	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
extensive initial training and maintenance efforts in order to work as presumed during the project period?			assessor. No extensive training was required.		
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Section C.1.1 – starting date 28/11/2003 Section C.1.2 – lifetime 30 years	Ok	Ok
8.3.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Section C.2.1.2 - renewable crediting period.	Ok	Ok
8.3.3 Does the project's operational lifetime exceed the crediting period	PDD	DR	Yes.	Ok	Ok

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

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Verify project installations like described in the PDD.	Visit	Site visit	Mogi das Cruzes plant is visited and project installation was verified 'in loco'. The site visit confirmed the description presented in PDD.	Ok	Ok
Verify documents that prove the start date of the project.	DR	Site visit	Chronogram of the project installation, 28/11/2003 – 23/11/2004 (Ref.7). Evidence of equipment purchasing: - Balança dosadora (weigh meter for slag) AF TAG M1/2-A, Invoice number 997759, 31/08/2004. - Blast furnace slag, CST Invoice number 695814, 13/01/2005.	Ok	OK
Verify Sustainable Development and	DR	Site	The information was	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Climate Change commitment mentioned in the PDD.		visit	<p>verified in the company website http://www.votorantim-cimentos.com/responsabilidade/principais_acoes.shtml.</p> <p>Votorantim is member (since 1999) of the World Business Council for Sustainable Development and of Cement Sustainability Initiative. The company is signatory of an environmental protocol of cement industries and has a commitment to control CO2 emissions and to contribute to mitigate the climate change. Additional evidences that Votorantim has participate in the meetings of cements companies regarding this protocol were verified during the site visit.</p> <p>It is also confirmed that Votorantim Cimentos is the owner of Silcar Empreendimentos that uses the commercial name "Cimento Mizu".</p>		
Verify documents about transport information, distances, loads and fuel consumption.	DR	Site visit	Data were verified onsite. Distances are fixed and consequently fuel consumption is fixed to.	Ok	Ok
Verify spreadsheets covering benchmark analysis, monitored data, emissions factor and emission reductions calculation; check how the data were obtained.	DR	Site visit/ I	The spreadsheet (ref.15) was verified. The tables with data are also included in the PDD and copy of the Excel file (electronic file) was provided to SGS.	Ok	Ok

Annex 3 - FINDINGS OVERVIEW

FINDINGS FROM VALIDATION OF PRODUCTION OF BLENDED CEMENT WITH BLAST FURNACE SLAG AT CIMENTO MIZU – VAL0384

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: 02/02/2006

Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
1	CAR	There is no information about monitoring of social and environmental indicators..	5.1
<p>Date: 21/March/2006</p> <p>Regarding environmental impacts: the monitoring of environmental impacts of the project activity is made according to the requirements of the environmental agency in São Paulo (Cetesb). When requested by the State environmental agency, monitoring is provided. As clarified in the Section F.2 of the PDD, the State environmental agencies issued the environmental licenses without special requirements regarding environmental impacts mitigation and monitoring.</p> <p>In addition:</p> <ul style="list-style-type: none"> - The verification of project atmospheric emissions, wastewater generation and solid residues final disposal was approved by the environmental agency as of the issuance of the license. - Emergency plans and safety programs were developed and implemented, in accordance with Votorantim Cimentos current practices and environmental legislation. <p>Regarding sustainable development indicators:</p> <p>As explained in Section A.2 of the PDD, the project activity contributes to Sustainable Development for several reasons:</p> <ul style="list-style-type: none"> - Project activity contributes to the reduction of energy consumption in the cement 			

manufacture chain and consequently to the conservation of energy resources. The increase in the use of blast furnace slag in the place of clinker reduces energy demand in cement manufacture and mining of limestone.

- The reduction of fossil fuel consumption also results in the reduction of local air pollution.
- The reduced use of clinker helps in the conservation of non-renewable reserves of limestone.
- Because less limestone is used, limestone mining activities are reduced. It results in important local environmental benefits, such as, mitigation of local air pollution, reduction of biodiversity loss, and soil and landscaping conservation at mining sites.
- Blast furnace slag is an important industrial residue that requires adequate final disposal. The use of this residue as raw material helps mitigating this problem, reducing the risks of soil and water contamination due to inadequate landfilling of slag.
- The project activity also helps mitigating Climate Change because of the significant reductions of direct and indirect greenhouse gases emissions.

The construction and operation of the new plant contributes to the economic development of the region, increasing job creation and promoting income distribution.

Date: 29/03/2006 – Aurea Nardelli.

[Acceptance and close out] The information provided above was verified during the site visit and by document review. The environmental license was checked and is valid. No specific impact is required to be monitored as result of the project activity.

CAR 1 was closed out.

Date: 02/03/2006

Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
2	CAR	There is no information about training provided to monitoring personnel.	5.2.3

Date: 21/March/2006

The employees of Mizu cement plant receive adequate training for regular operation of the plant. The operation of the CDM project activity is included in these procedures.

The site Process Engineer will be responsible for acquiring the set of monitoring data and feed them into the Excel spreadsheet "Cimento Mizu – CERs Calculation.xls". The set of data is obtained from the following sources:

1 – Electronic supervisory system used in plant operations: production of clinker, production of blended cement, consumption of additives, electricity consumption, self generated electricity, fuel consumed for self generated electricity.

2 – Sales receipts: fuel purchased, slag purchased, cement sold.

3 – Laboratory: CaO and MgO contents of clinker and raw material.

4 – Transportation supplier: quantity of slag transported, fuel consumption in transportation and distance covered in transportation.

Cimento Mizu will submit the data to Ecoinvest so that a revision is made in order to verify inconsistencies in the calculations before each verification. Note that part of the data required in the monitoring is obtained from Votorantim-Santa Helena site that supplies clinker to Cimento Mizu-Mogi das Cruzes.

The Section D of the PDD was revised. Please, refer to Section D.4.

Date: 29/03/2006 – Aurea Nardelli.

[Acceptance and close out]: It was verified during the site visit that the operators have received appropriate training for regular operation of the plant; the CDM project is part of the Mizu activities. It was verified that specific instructions were defined for the site Process Engineer and that the revised version of PDD presented the details about these instructions.

CAR 2 was closed out.

Date: 02/03/2006

Raised by: Fabian Goncalves

No.	Type	Issue	Ref
3	NIR	Some information presented in the PDD is not clear (Barriers in section B.3, sub-step 3a): doubt about applicability of Barrier 1, as no adaptation was needed because the project start together with the plant operation. Barrier 3, the same condition described in barrier 1. Barrier 4, Mizu does not need to introduce a new product in the market.	3.2

Date: 21/March/2006

The Sub-Step 3a of Section B.3 of the PDD was revised. Please, refer to the document.

Date: 29/03/2006 – Aurea Nardelli.

[Acceptance and close out] The barriers were revised and the new version of PDD presented clear information. Barriers 1 and 2 described in the PDD (section B.3), were confirmed during site visit by interviews with the project and plant managers and by document review.

NIR 3 was closed out.

Date: 02/03/2006

Raised by: Fabian Goncalves

No.	Type	Issue	Ref
4	CAR	There are no procedures for the project management (monitoring, calibration, reporting etc).	5.2.4 until 5.2.13

Date: 21/March/2006

The site Process Engineer will be responsible for acquiring the set of monitoring data and feed them into the Excel spreadsheet "Cimento Mizu – CERs Calculation.xls". The set of data is obtained from the following sources:

1 – Electronic supervisory system used in plant operations: production of clinker, production of blended cement, consumption of additives, electricity consumption, self generated electricity, fuel consumed for self generated electricity.

2 – Sales receipts: fuel purchased, slag purchased, cement sold.

3 – Laboratory: CaO and MgO contents of clinker and raw material.

4 – Transportation supplier: quantity of slag transported, fuel consumption in transportation and distance covered in transportation.

Cimento Mizu will submit the data to Ecoinvest so that a revision is made in order to verify inconsistencies in the calculations before periodic verification. Note that part of the data required in the monitoring is obtained from Votorantim-Santa Helena site that supplies clinker to Cimento Mizu-Mogi das Cruzes.

The Section D of the PDD was revised. Please, refer to Section D.4.

Date: 29/03/2006 – Aurea Nardelli.

[Acceptance and close out] Section D.4 of the PDD was updated to present this information. The general procedures were provided in the revised PDD. Specific procedures for project operation and management were verified during the site visit (Procedure for calibration “Calibração das balanças dosadoras”, IT003 rev00; Operation Procedure “Partida, desligamento e ajustes operacionais da moagem de clínquer”, P7 0051 rev00; Procedure for maintenance of monitoring equipment “Controle de equipamentos de inspeção, medição e ensaios”, P 9001 rev00).

It was also confirmed that Ecoinvest is responsible for dealing with monitoring data adjustments and uncertainties, internal review and reporting.

CAR 4 was closed out.