



Voluntary Carbon Standard Version 2007
Verification Report Template

19 November 2007

Verification Report: BRAZIL-VER/01216/2009 – VERSION 03

| | |
|---|---|
| Name of Verification company: | Date of the issue: |
| BUREAU VERITAS CERTIFICATION HOLDING - SAS | January 14 th , 2011 |
| Report Title: | Approved by: |
| Verification Report Bom Jesus Ceramic Fuel Switching Project | Marcelo Antoniazzi Porto – Internal Technical Reviewer |
| Client: | Project Title: |
| Sustainable Carbon – Projetos Ambientais LTDA. | Bom Jesus Ceramic Fuel Switching Project |
| Summary: | |

BUREAU VERITAS CERTIFICATION has made the second periodic verification of the Bom Jesus Ceramic Fuel Switching Project. This project activity was developed by Carbono Social Serviços Ambientais LTDA. (Social Carbon Company), which has recently changed its company name to Sustainable Carbon – Projetos Ambientais LTDA.

The project activity is the project of Bom Jesus Ceramic, which is a red ceramic industry localized in Paudalho municipality, in the state of Pernambuco, northeast of Brazil. The ceramic industry produces bricks and flagstones, destined mainly for the regional market in Pernambuco.

The fuel utilized in the baseline scenario to fire the ceramic units was native wood from the Caatinga biome, which is an old practice in the region. This type of wood is considered a non-renewable biomass, once it is not originated in areas with reforestation activities or sustainable management activities.

The purpose of this project activity is to promote a fuel switch in Bom Jesus Ceramic by utilizing renewable biomasses (such as native wood with sustainable forest management plan, Algaroba wood, sugar cane briquette, Eucalyptus wood, sawdust, wood residues from industries and constructions, and glycerin) instead of native wood without sustainable management plan, which is an old practice in the region of Paudalho, in order to supply the kilns and fire the ceramic units.

By utilizing renewable biomasses for effective generation of thermal energy for captive consumption, this project activity will directly help in reducing the Brazilian deforestation rates, the main source of greenhouse gas emissions in Brazil.

The verification scope is defined as a periodic independent and objective review and an ex-post determination of the monitored reductions in GHG emissions during defined verification period and consisted of the following three phases: i) desk review of the project design, baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to verification Report & Opinion, was conducted using BUREAU VERITAS CERTIFICATION internal procedures.

The first output of the verification process is a list of Clarification and Corrective Action Requests (CL and CAR), presented in the Verification Report. Taking into account this output, the project proponent revised its Monitoring Report Document (Version 05). In summary, it is BUREAU VERITAS CERTIFICATION'S opinion that the project correctly applies the baseline and monitoring AMS.I-E (Switch from Non – Renewable Biomass for Thermal Application by the User) Version 01 valid from February 01st, 2008 to April 08th, 2010 meets the relevant VCS requirements and local legislation.

As the result of the 2nd periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner. BUREAU VERITAS CERTIFICATION herewith confirms that the project has achieved emission reductions in the above mentioned reporting period as follows:

Reporting period: April 01st, 2009 to April 30th, 2010

| ER_y (April 01st, 2009 to April 30th, 2010) | | | |
|--|---------------------------------------|-------------------------------|--|
| Period | PR_y (Ceramic units) | B_y (tonnes) | ER_y (tCO₂e) |
| Total 2009 | 21,475,789 | 7,471 | 9,132 |
| Total 2010 | 10,674,860 | 3,714 | 4,538 |
| Total period | 32,150,649 | 11,185 | 13,670 |

| Work carried out by: | Number of pages: |
|--|------------------|
| Rubens Ferreira – Leader GHG Verifier Daiany M. Favarato – Specialist Marcelo Antoniazzi Porto – Internal Technical Reviewer | 43 |

TABLE OF CONTENTS

| | | |
|----------|--|-----------|
| 1 | INTRODUCTION | 5 |
| 1.1 | OBJECTIVE | 5 |
| 1.2 | SCOPE AND CRITERIA | 5 |
| 1.3 | VCS PROJECT DESCRIPTION | 5 |
| 1.4 | LEVEL OF ASSURANCE | 7 |
| 2 | METHODOLOGY | 7 |
| 3 | VERIFICATION FINDINGS | 8 |
| 3.1 | REMAINING ISSUES, INCLUDING ANY MATERIAL DISCREPANCY, FROM PREVIOUS VERIFICATION | 8 |
| 3.2 | PROJECT IMPLEMENTATION | 8 |
| 3.3 | COMPLETENESS OF MONITORING | 11 |
| 3.4 | ACCURACY OF EMISSION REDUCTION CALCULATIONS | 20 |
| 3.5 | QUALITY OF EVIDENCE TO DETERMINE EMISSION REDUCTIONS | 22 |
| 3.6 | MANAGEMENT AND OPERATIONAL SYSTEM | 22 |
| 4 | VERIFICATION CONCLUSION | 22 |
| 5 | REFERENCES | 24 |
| 6 | VERIFIERS' CV'S | 25 |
| 7 | VCS VERIFICATION PROTOCOL | 26 |

1 INTRODUCTION

Sustainable Carbon – Projetos Ambientais LTDA has commissioned BUREAU VERITAS CERTIFICATION to verify the emission reductions of its VCS “Bom Jesus Ceramic Fuel Switching Project”.

This report summarizes the findings of the second periodic verification of the project, performed on the basis of VCS – Voluntary Carbon Standard version 2007.1 criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 OBJECTIVE

Verification is the periodic independent review and ex-post determination of the monitored reductions in GHG emissions during defined verification period.

The objective of the periodic verification is to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan; furthermore, the periodic verification evaluates the GHG emission reductions data and express a conclusion with a high, but not absolute, level of assurance about whether the reported GHG emission data is free of material misstatements; and verifies that the reported GHG emission reductions data is sufficiently supported by evidence, i.e. monitoring records.

The verification shall consider both quantitative and qualitative information on emission reductions.

Quantitative data comprises the monitoring reports submitted to the verifier by the project entity.

Qualitative data comprises information on internal management controls, calculation procedures and procedures for transfer, frequency of emissions reports, review and internal audit of calculations/data transfers.

The verification is based on criteria set by VCS – Voluntary Carbon Standard version 2007.1.

1.2 SCOPE AND CRITERIA

The verification scope 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 VCS – Voluntary Carbon Standard version 2007.1.

The verification is not meant to provide any consulting towards the Client. However, stated requests for forward actions and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 VCS PROJECT DESCRIPTION

This project activity was developed by Carbono Social Serviços Ambientais LTDA. (Social Carbon Company), which has recently changed its company name to Sustainable Carbon – Projetos Ambientais LTDA.

The project activity is the project of Bom Jesus Ceramic, which is a red ceramic industry localized in Paudalho municipality, in the state of Pernambuco, northeast of Brazil. The

ceramic industry produces bricks and flagstones, destined mainly for the regional market in Pernambuco.

The fuel utilized in the baseline scenario to fire the ceramic units was native wood from the Caatinga biome, which is an old practice in the region. This type of wood is considered a non-renewable biomass, once it is not originated in areas with reforestation activities or sustainable management activities.

The purpose of this project activity is to promote a fuel switch in Bom Jesus Ceramic by utilizing renewable biomasses (such as native wood with sustainable forest management plan, Algaroba wood, sugar cane briquette, Eucalyptus wood, sawdust, wood residues from industries and constructions, and glycerin) instead of native wood without sustainable management plan, which is an old practice in the region of Paudalho, in order to supply the kilns and fire the ceramic units.

By utilizing renewable biomasses for effective generation of thermal energy for captive consumption, this project activity will directly help in reducing the Brazilian deforestation rates, the main source of greenhouse gas emissions in Brazil.

The switching fuel project reduces the greenhouse gas emissions and aims to obtain carbon credits incomes, through the substitution of the thermal energy generation.

Due to the high investment necessary on the acquiring of new equipments, the use of new biomasses seems to present a high risk. This fuel exchange could only be feasible when considering the carbon credits incomes, since the adaptation of kilns to the new biomasses and the purchase of new equipments required considerable investments. With the approval of this project activity, the use of renewable biomasses can be feasible when comparing to the non-renewable fuel use.

The main difficulties for Bom Jesus Ceramic due to the fuel-switch were the non-availability of human knowledge to operate and maintain the new technology that was implemented, the internal logistic modification and the employee's resistance to the new technology.

The operators did not have knowledge of the ideal amount of renewable biomasses that was necessary to achieve the ideal temperature for the ceramic units firing, to acquire the final product with same quality and to maintain the optimal process as they did when using non-renewable native wood. Therefore, some training courses were required for the staffs in order to clarify new measures linked to the machinery with the aim of finding a burn cycle standard, and eventually, to sustain the quality of the final product.

Moreover, although there is currently a great amount of these types of biomasses available regionally, a demand and price increase has already been reported. Even if the price of the biomasses increase, the ceramic could not repass it through the sale of ceramic pieces, once they would not have competitive prices in relation to other ceramics which did not made the fuel switch. The project approval will make the continue use of renewable biomasses feasible.

1.4 LEVEL OF ASSURANCE

With basis in the assessment of this project, a verification statement expressing a reasonable level of assurance is expressed as follows:

- is materially correct and is a fair representation of the GHG data and,
- was prepared in accordance with the related International Standard on GHG quantification, monitoring and reporting, and to relevant national standards.

The verification report is based on VCS PD v04 and documents provided by the projectproponent, as well as information obtained from the on-site visit. The verification opinion is assured by the credibility of all the statements above.

2 METHODOLOGY

This second verification comprises the period from April 01st, 2009 to April 30th, 2010.

Preparations: July 08th, 2010 to July 09th, 2010

On-site visit: July 21st, 2010

Draft Reporting: September 20th, 2010

Verification Reporting Version 01: October 16th, 2010

Project Participants – Sustainable Carbon – Projetos Ambientais LTDA:

Marcelo Haddad – Technical Analyst

Filipe Luth – Technical Analyst

Gabriel Fernandes de Toledo Piza – Technical Analyst

Project Proponents – Bom Jesus Ceramic:

Mrs. Elisângela Maria Carneiro– Project Developer

The verification consisted of the following steps:

- A desk review of the VCS PD v04 and supporting documents with the use of the relevant sections of a customized protocol according to the VCS 2007.1;
- A desk review of the Monitoring Report (MR) and additional supporting documents which the client submitted. The relevant sections of the above-mentioned customized protocol according to the VCS 2007.1 were used;
- On-Site assessment,
- Background investigation and follow-up interviews with personnel of the project developer;
- Verification reporting (Draft Verification Report and Final Verification Report).

The criteria of this verification include the relevant rules and steps as set out in the VCS.

3 VERIFICATION FINDINGS

3.1 REMAINING ISSUES, INCLUDING ANY MATERIAL DISCREPANCY, FROM PREVIOUS VERIFICATION

There are not remaining issues from the previous verification, all the CARs and CLs were closed, and no FAR was opened.

There are no pending CARs, CLs or FARs issued in the course of the verification that still needs to be properly addressed to get closed. Before issuance of the final verification report, these CARs and CLs were adequately answered by the project proponent, and are closed.

3.2 PROJECT IMPLEMENTATION

The implementation status of the project is as follows:

The project has a 10 years crediting period, twice renewable.

The first 10 years crediting period is from January 1st, 2007 to December 31st, 2016. The total Emission Reductions forecasted for that period are 103,700 tCO₂e.

The following verification has already been made:

- First periodic verification: from January 01st, 2007 to March 31st, 2009. Emission Reductions of 28,266 tCO₂e.

The second periodic verification, from April 01st, 2009 to April 30th, 2010, is covered by this report.

Bom Jesus Project start date: November 01st, 2006

Crediting period start date: January 01st, 2007

The actual operation of the proposed project activity is the fuel switching in the ceramic facility, with the substitution of unsustainable native firewood to native wood with sustainable forest management plan, Algaroba wood, Eucalyptus wood, sugar cane briquette, Glycerin and wood residues from de industries and construction as renewable biomasses for energy supply.

As presented on the registered PD, the surplus of renewable biomass is enough to the VCS Project crediting period.

The following information about the monitored parameter PR_y provided in the Monitoring Report Version 05 shows the value from this monitoring period.

| Data / Parameter: | PR_y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|--------------|-------------------|-------------------|--------|--------------|-------------|------|-------|-----------|-----------|-----|-----------|-----------|------|-----------|-----------|------|-----------|-----------|--------|-----------|-----------|-----------|-----------|-----------|---------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|--|--------------|-------------------|-------------------|------|---------|-----------|-----------|----------|-----------|-----------|
| Data unit: | Unity of ceramic devices per month | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description: | Production of ceramic units in the monitored period from April 01 st , 2009 to April 30 th , 2010. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Source of data to be used: | Controlled by the ceramic owner | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Value of data | <table border="1"> <thead> <tr> <th></th> <th>Period</th> <th>Hoffman Kiln</th> <th>Tunnel Kiln</th> </tr> </thead> <tbody> <tr> <td rowspan="10">2009</td> <td>April</td> <td>1,016,361</td> <td>1,016,361</td> </tr> <tr> <td>May</td> <td>1,026,809</td> <td>1,026,809</td> </tr> <tr> <td>June</td> <td>1,010,720</td> <td>1,010,720</td> </tr> <tr> <td>July</td> <td>1,248,272</td> <td>1,248,272</td> </tr> <tr> <td>August</td> <td>1,281,028</td> <td>1,281,028</td> </tr> <tr> <td>September</td> <td>1,363,844</td> <td>1,363,844</td> </tr> <tr> <td>October</td> <td>1,222,150</td> <td>1,222,150</td> </tr> <tr> <td>November</td> <td>1,372,311</td> <td>1,372,311</td> </tr> <tr> <td>December</td> <td>1,196,400</td> <td>1,196,400</td> </tr> <tr> <td></td> <td>Total</td> <td>10,737,895</td> <td>10,737,895</td> </tr> <tr> <td rowspan="2">2010</td> <td>January</td> <td>1,281,380</td> <td>1,281,380</td> </tr> <tr> <td>February</td> <td>1,222,150</td> <td>1,222,150</td> </tr> </tbody> </table> | | | | Period | Hoffman Kiln | Tunnel Kiln | 2009 | April | 1,016,361 | 1,016,361 | May | 1,026,809 | 1,026,809 | June | 1,010,720 | 1,010,720 | July | 1,248,272 | 1,248,272 | August | 1,281,028 | 1,281,028 | September | 1,363,844 | 1,363,844 | October | 1,222,150 | 1,222,150 | November | 1,372,311 | 1,372,311 | December | 1,196,400 | 1,196,400 | | Total | 10,737,895 | 10,737,895 | 2010 | January | 1,281,380 | 1,281,380 | February | 1,222,150 | 1,222,150 |
| | Period | Hoffman Kiln | Tunnel Kiln | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2009 | April | 1,016,361 | 1,016,361 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | May | 1,026,809 | 1,026,809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | June | 1,010,720 | 1,010,720 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | July | 1,248,272 | 1,248,272 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | August | 1,281,028 | 1,281,028 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | September | 1,363,844 | 1,363,844 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | October | 1,222,150 | 1,222,150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | November | 1,372,311 | 1,372,311 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | December | 1,196,400 | 1,196,400 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Total | 10,737,895 | 10,737,895 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2010 | January | 1,281,380 | 1,281,380 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | February | 1,222,150 | 1,222,150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|--|---|--------------------------------------|-------------------|
| | March | 1,473,250 | 1,473,250 |
| | April | 1,360,650 | 1,360,650 |
| | Total | 5,337,430 | 5,337,430 |
| | | Total at the monitored period | 32,150,649 |
| Description of measurement methods and procedures to be applied: | <p>The production was calculated through the financial transactions of the ceramic.</p> <p>As stated in the VCS PD, 50% of the production of <i>Bom Jesus</i> ceramic is produced at the “Tunnel” kiln, and 50% is produced at the “Hoffman” kiln.</p> | | |
| QA/QC procedures to be applied: | <p>The ceramics have an internal control of the quantity of pieces produced. It was rechecked according to the biomass utilized and the kiln consumption of renewable biomass.</p> | | |
| Any comment: | <p>The production in this period increased in order to attend the market demand.</p> <p>Data will be kept for two years after the end of the crediting period or the last issuance of carbon credits for this project activity, whichever occurs later.</p> | | |

Although, the production was approximate to the estimate and this fact is considered normal to happened in the industry area. As this is a monitored parameter, different values are expected to appear.

The internal production control spreadsheet contains the number of ceramic devices produced, i. e. the number of ceramics devices that comes out of the kilns. During the site visit this fact was verified.

As presented on the PD (Version 04 dated on November 11th, 2009) the surplus of renewable biomass (Native wood with sustainable forest management, industries and construction residues, Algaroba wood, Eucalyptus wood, Sugar cane briquette and Glycerin) is enough to the VCS Project crediting period.

It is important to note that the production does not have a limit in the Environmental License. The project activity during this monitoring period (April 01st, 2009 to April 30th, 2010) is in accordance with the registered VCS PD version 04.

3.3 COMPLETENESS OF MONITORING

The monitoring plan is in accordance with the approved methodology applied by the proposed CDM project activity. It is important to mention that the amount of renewable biomasses employed is being measured by the biomass providers, as described below (under $Q_{renbiomass}$), instead of by the ceramic owner, as per the registered PD. The DOE verified the practice and confirms it is in place and in accordance with approved methodology. Therefore, this change in the monitoring plan is approved by the DOE.

The parameters required by the monitoring plan and the way the Verification Team has verified the values in the Monitoring Report Version 05 are described below:

Data Reported in Monitoring

| Data / Parameter: | $Q_{renbiomass}$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|---|---------------------------|-----------------------------|--------------------------------|-----------------------------------|--------------------|--|-----------------|------------------------------------|---------------------------|-----------------------------|--------------------------------|-----------------------------------|--------------------|-----------------------|-------|----|------|-------|---|---|---------------------|-------|----|---|------|---|---|----------------------|-------|-----|------|------|---|---|
| Data unit: | Tons per month | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description: | Amount of renewable biomasses utilized in the monitored period from April 1 st , 2009 to April 30 th , 2010. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Source of data to be used: | Measured by the biomass providers and controlled by the ceramic owner. The registered VCS PD v.4 establishes that the ceramic owner would measure this parameter; however, during the entire monitored period, this parameter was monitored through all the receipts and invoices of biomass received by the ceramic industry. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Value of data | <table border="1"> <thead> <tr> <th style="background-color: #cccccc;">Period\Bio mass</th> <th style="background-color: #cccccc;">Native wood¹ (tons)</th> <th style="background-color: #cccccc;"><i>Algaroba</i> (tons)</th> <th style="background-color: #cccccc;"><i>Eucalyptus</i> (tons)</th> <th style="background-color: #cccccc;">Residue² (tons)</th> <th style="background-color: #cccccc;">Sugar cane briquette (tons)</th> <th style="background-color: #cccccc;">Glycerin (tons)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">April 2009</td> <td style="text-align: center;">322.9</td> <td style="text-align: center;">30</td> <td style="text-align: center;">30.6</td> <td style="text-align: center;">130.0</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">May 2009</td> <td style="text-align: center;">157.4</td> <td style="text-align: center;">90</td> <td style="text-align: center;">-</td> <td style="text-align: center;">22.5</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> <tr> <td style="text-align: center;">June 2009</td> <td style="text-align: center;">246.2</td> <td style="text-align: center;">160</td> <td style="text-align: center;">20.4</td> <td style="text-align: center;">22.5</td> <td style="text-align: center;">-</td> <td style="text-align: center;">-</td> </tr> </tbody> </table> | | | | | | | Period\Bio mass | Native wood ¹ (tons) | <i>Algaroba</i> (tons) | <i>Eucalyptus</i> (tons) | Residue ² (tons) | Sugar cane briquette (tons) | Glycerin (tons) | April 2009 | 322.9 | 30 | 30.6 | 130.0 | - | - | May 2009 | 157.4 | 90 | - | 22.5 | - | - | June 2009 | 246.2 | 160 | 20.4 | 22.5 | - | - |
| Period\Bio mass | Native wood ¹ (tons) | <i>Algaroba</i> (tons) | <i>Eucalyptus</i> (tons) | Residue ² (tons) | Sugar cane briquette (tons) | Glycerin (tons) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| April 2009 | 322.9 | 30 | 30.6 | 130.0 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| May 2009 | 157.4 | 90 | - | 22.5 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| June 2009 | 246.2 | 160 | 20.4 | 22.5 | - | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | |
|--|----------------|----------------|--------------|--------------|-------------|--------------|
| July 2009 | 222.0 | 120 | 40.8 | 41.5 | - | - |
| August 2009 | 286.6 | 20 | - | - | - | - |
| September 2009 | 472.2 | 40 | 20.4 | 2.1 | - | 30.50 |
| October 2009 | 375.3 | 60 | 20.4 | 7.0 | - | 15.25 |
| November 2009 | 314.8 | 140 | - | 2.1 | - | 29.99 |
| December 2009 | 209.9 | 120 | - | - | - | 106.50 |
| Total 2009 | 2,607.3 | 780.0 | 132.6 | 227.7 | 0.0 | 182.2 |
| January 2010 | 286.6 | 200.0 | - | - | - | 77.76 |
| February 2010 | 149.3 | 200.0 | - | - | - | 92.47 |
| March 2010 | 181.6 | 80.0 | - | 6.0 | - | 136.16 |
| April 2010 | 149.3 | 80.0 | - | 20.0 | 15.0 | 37.83 |
| Total 2010 | 766.8 | 560.0 | 0.0 | 26.0 | 15.0 | 344.2 |
| Total in monitoring period (tons) | 3,374.1 | 1,340.0 | 132.6 | 253.7 | 15.0 | 526.5 |
| ¹ Native wood with sustainable forest management plan | | | | | | |

| | <p>² Industries and construction residues</p> | | | | | | | | | | |
|---|--|----------------------|---|--|------------------------|--|---|--------|--------|--------|--------|
| <p>Description of measurement methods and procedures to be applied:</p> | <p>The amount of biomasses was monitored in accordance to the weight described in the receipts or invoices from the providers. The values of native wood with sustainable forest management, <i>Algaroba</i> wood, <i>Eucalyptus</i> wood, and wood residues from industries and construction described in the invoices and receipts are described in m³, therefore it was necessary the conversion to tons through the specific gravity of each biomass. The specific gravity values of the renewable biomasses utilized in this project are:</p> <table border="1" data-bbox="577 609 1345 1131"> <thead> <tr> <th data-bbox="577 609 719 952">Biomass</th> <th data-bbox="719 609 892 952">Native wood with sustainable forest management plan</th> <th data-bbox="892 609 1024 952"><i>Algaroba</i> wood</th> <th data-bbox="1024 609 1177 952"><i>Eucalyptus</i> wood</th> <th data-bbox="1177 609 1345 952">Wood residues from industries and construction</th> </tr> </thead> <tbody> <tr> <td data-bbox="577 952 719 1131">Specific Gravity (tons/m³)</td> <td data-bbox="719 952 892 1131">0.8072</td> <td data-bbox="892 952 1024 1131">0.7600</td> <td data-bbox="1024 952 1177 1131">0.5100</td> <td data-bbox="1177 952 1345 1131">0.3500</td> </tr> </tbody> </table> <p>The sources of these data are:</p> <ul style="list-style-type: none"> - Native wood with sustainable forest management plan <p>NASCIMENTO, W. S. A. Avaliação dos Impactos Ambientais Gerados Por Uma Indústria Cerâmica Típica da Região do Seridó/RN; Dissertação (Mestrado em Engenharia Mecânica), Universidade Federal do Rio Grande do Norte, Natal, 2007. Available at: <http://bdt.d.bczm.ufrn.br/tesdesimplificado//tde_busca/arquivo.php?codArquivo=1239>. Last visit on: July 04th, 2009.</p> <p>LORENZI, H. Árvores Brasileiras: Manual de Identificação e Cultivo de Plantas Arbóreas Nativas do Brasil, vol.1. 4.ed. Nova Odessa, SP: Instituto Plantarum, 2002.</p> <p>LORENZI, H. Árvores Brasileiras: Manual de Identificação e Cultivo de Plantas Arbóreas Nativas do Brasil, vol.2. 4.ed. Nova Odessa, SP: Instituto Plantarum, 2002.</p> <p>Associação de Plantas do Nordeste. Projeto Madeira. Available at: <http://www.plantasdonordeste.org/madeiras.pdf>.</p> <ul style="list-style-type: none"> - <i>Algaroba</i> wood | Biomass | Native wood with sustainable forest management plan | <i>Algaroba</i> wood | <i>Eucalyptus</i> wood | Wood residues from industries and construction | Specific Gravity (tons/m ³) | 0.8072 | 0.7600 | 0.5100 | 0.3500 |
| Biomass | Native wood with sustainable forest management plan | <i>Algaroba</i> wood | <i>Eucalyptus</i> wood | Wood residues from industries and construction | | | | | | | |
| Specific Gravity (tons/m ³) | 0.8072 | 0.7600 | 0.5100 | 0.3500 | | | | | | | |

| | |
|--|--|
| | <p>PEREIRA, J. C. D.; LIMA, P. C. F. Comparação da Qualidade da Madeira de seis Espécies de Algarobeira para a Produção de Energia. Colombo: Embrapa Florestas, 2002. p. 99-107. Available at: <http://www.cnpf.embrapa.br/publica/boletim/boletarqv/bolet45/pag-99_106.pdf>. Last visit on April 28th, 2009.</p> <p>It was considered the average value of the specific gravities of the species of <i>Algaroba</i>.</p> <p>- Sugar cane briquette and sawdust</p> <p>The quantity of these biomasses described at the invoices is in tons.</p> <p>- <i>Eucalyptus</i> wood</p> <p>IPCC: Intergovernmental Panel on Climate Change. Orientación del IPCC sobre las buenas prácticas para UTCUTS. Capítulo 3: Orientación sobre las buenas prácticas en el sector de CUTS. Cuadro 3A.1.9-2: Densidade de maderas básicas (D) de troncos (toneladas de materia seca/m³ de volumen recién talado) para especies arbóreas tropicales. Page: 184. It was utilized the specific gravity of <i>Eucalyptus robusta</i> at the <i>América Tropical</i> column.</p> <p>- Wood residues from constructions and industries</p> <p>SIMIONI, F. J. Análise diagnóstica e prospectiva da cadeia produtiva de energia de biomassa de origem florestal no planalto sul de Santa Catarina - Curitiba: UFPR, 2007. 132p.: il. -</p> <p>Available at: <http://dspace.c3sl.ufpr.br/dspace/handle/1884/10294>. Last visit on: October 25th, 2009.</p> <p>It was utilized the average value of the specific gravity for wood chips.</p> <p>- Glycerin</p> <p>The quantity of this biomass described at the invoices is in tons.</p> |
| <p>QA/QC procedures to be applied:</p> | <p>It was monitored through receipts of purchase from the biomass providers. The ceramic industry controls the quantity of biomass through an internal spreadsheet, which is fed with the measured values of all the biomass that arrive from the providers. This internal spreadsheet was double checked with all the receipts and invoices of</p> |

| | |
|--------------|---|
| | biomass employed. |
| Any comment: | Data will be kept for two years after the end of the crediting period or the last issuance of carbon credits for this project activity, whichever occurs later. |

| Data / Parameter: | PR_y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------|--|--------------|-------------|--|--------|--------------|-------------|------|-------|-----------|-----------|-----|-----------|-----------|------|-----------|-----------|------|-----------|-----------|--------|-----------|-----------|-----------|-----------|-----------|---------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|
| Data unit: | Unity of ceramic devices per month | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Description: | Production of ceramic units in the monitored period from April 01 st , 2009 to April 30 th , 2010. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Source of data to be used: | Controlled by the ceramic owner | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Value of data | <table border="1"> <thead> <tr> <th></th> <th>Period</th> <th>Hoffman Kiln</th> <th>Tunnel Kiln</th> </tr> </thead> <tbody> <tr> <td rowspan="9">2009</td> <td>April</td> <td>1,016,361</td> <td>1,016,361</td> </tr> <tr> <td>May</td> <td>1,026,809</td> <td>1,026,809</td> </tr> <tr> <td>June</td> <td>1,010,720</td> <td>1,010,720</td> </tr> <tr> <td>July</td> <td>1,248,272</td> <td>1,248,272</td> </tr> <tr> <td>August</td> <td>1,281,028</td> <td>1,281,028</td> </tr> <tr> <td>September</td> <td>1,363,844</td> <td>1,363,844</td> </tr> <tr> <td>October</td> <td>1,222,150</td> <td>1,222,150</td> </tr> <tr> <td>November</td> <td>1,372,311</td> <td>1,372,311</td> </tr> <tr> <td>December</td> <td>1,196,400</td> <td>1,196,400</td> </tr> </tbody> </table> | | | | Period | Hoffman Kiln | Tunnel Kiln | 2009 | April | 1,016,361 | 1,016,361 | May | 1,026,809 | 1,026,809 | June | 1,010,720 | 1,010,720 | July | 1,248,272 | 1,248,272 | August | 1,281,028 | 1,281,028 | September | 1,363,844 | 1,363,844 | October | 1,222,150 | 1,222,150 | November | 1,372,311 | 1,372,311 | December | 1,196,400 | 1,196,400 |
| | Period | Hoffman Kiln | Tunnel Kiln | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2009 | April | 1,016,361 | 1,016,361 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | May | 1,026,809 | 1,026,809 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | June | 1,010,720 | 1,010,720 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | July | 1,248,272 | 1,248,272 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | August | 1,281,028 | 1,281,028 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | September | 1,363,844 | 1,363,844 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | October | 1,222,150 | 1,222,150 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | November | 1,372,311 | 1,372,311 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | December | 1,196,400 | 1,196,400 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | |
|--|---|--------------------------------------|-------------------|-------------------|
| | | Total | 10,737,895 | 10,737,895 |
| | 2010 | January | 1,281,380 | 1,281,380 |
| | | February | 1,222,150 | 1,222,150 |
| | | March | 1,473,250 | 1,473,250 |
| | | April | 1,360,650 | 1,360,650 |
| | | Total | 5,337,430 | 5,337,430 |
| | | Total at the monitored period | 32,150,649 | |
| Description of measurement methods and procedures to be applied: | <p>The production was calculated through the financial transactions of the ceramic.</p> <p>As stated in the VCS PD, 50% of the production of <i>Bom Jesus</i> ceramic is produced at the "Tunnel" kiln, and 50% is produced at the "Hoffman" kiln.</p> | | | |
| QA/QC procedures to be applied: | <p>The ceramics have an internal control of the quantity of pieces produced. It was rechecked according to the biomass utilized and the kiln consumption of renewable biomass.</p> | | | |
| Any comment: | <p>The production in this period increased in order to attend the market demand.</p> <p>Data will be kept for two years after the end of the crediting period or the last issuance of carbon credits for this project activity, whichever occurs later.</p> | | | |

| | |
|--------------------------|---|
| Data / Parameter: | Leakage of non-renewable biomass |
| Data unit: | tCO ₂ e |
| Description: | Leakage resulted from non-renewable biomass |

| | |
|--|--|
| Source of data to be used: | Monitored |
| Value of data | 0 |
| Description of measurement methods and procedures to be applied: | The three sources of leakages predicted in methodology applied were monitored. Scientific articles, official statistical data, regional and national surveys were provided in order to ensure that there was no leakage from non-renewable biomass (or to estimate the leakage). |
| QA/QC procedures to be applied : | Data available regarding the ceramic industry fuel consumption were employed to monitor the leakage. More information, please see Section B.5 from the Monitoring Report – Leakage, Part B. |
| Any comment: | Data will be kept for two years after the end of the crediting period or the last issuance of carbon credits for this project activity, whichever occurs later. |

| | | | |
|----------------------------|---|----------------|-------------|
| Data / Parameter: | Renewable biomass surplus | | |
| Data unit: | ton or m ³ | | |
| Description: | Amount of renewable biomass available | | |
| Source of data to be used: | Monitored | | |
| Value of data | | | |
| | Biomass surplus | Surplus | Year |
| | Wood residues from construction and industries in tons | 749,839 | 2006 |
| | Sugar cane bagasse in tons | 2,209,479 | 2007 |
| | Native wood with sustainable forest management plan in m ³ | 519,558 | 2007 |
| | <i>Algaroba</i> wood in m ³ | 2,500,000 | 2007 |
| | <i>Eucalyptus</i> wood in m ³ | 13,259,341 | 2007 |
| | Glycerin (m ³) | 129,370 | 2008 |

| | |
|--|--|
| Description of measurement methods and procedures to be applied: | <p>It was used to calculate the leakage of renewable biomass.</p> <p>The sources of leakages predicted in “General guidance on leakage in biomass project activities” of Indicative Simplified Baseline and Monitoring Methodologies for Selected Small-Scale CDM Project Activity Categories, were monitored. The measurement of the leakage was based in national and international articles and database every monitoring period. The sources provided information about the biomass availability in the project activity’s region.</p> |
| QA/QC procedures to be applied : | Data available regarding the ceramic industry fuel consumption were utilized to monitor the leakage. More information, please see Section B.5 from the Monitoring Report – Leakage, Part A. |
| Any comment: | Data will be kept for two years after the end of the crediting period or the last issuance of carbon credits for this project activity, whichever occurs later. |

| | |
|--|---|
| Data / Parameter: | Origin of renewable biomass |
| Data unit: | Not applicable |
| Description: | Renewable origin of the biomass |
| Source of data to be used: | Controlled by the ceramic owner |
| Value of data | Renewable biomass |
| Description of measurement methods and procedures to be applied: | This information was given by the biomasses providers. |
| QA/QC procedures to be applied : | The biomasses were considered renewable as they are according to the definition given by the methodology applied. Furthermore, documents proving the origin of renewable biomass were provided, such as invoices and receipts from the biomass providers. |
| Any comment: | Data will be kept for two years after the end of the crediting period |

| | |
|--|---|
| | or the last issuance of carbon credits for this project activity, whichever occurs later. |
|--|---|

| | |
|--|--|
| Data / Parameter: | $f_{NRB,y}$ |
| Data unit: | Fraction of biomass or (percentage). |
| Description: | Fraction of biomass (wood) used in the absence of the project activity in year y established as non-renewable biomass using survey methods. It was also discounted the amount of wood saved by similar projects in the same biome. |
| Source of data used: | Survey methods |
| <i>Value of applied:</i> | 0.994 or 99.40% |
| <i>Justification of the choice of data or description of measurement methods and procedures actually applied :</i> | <p>Before the project activity, wood from areas without forest management was offered with low prices and high viability to the ceramics owner.</p> <p>Thus, the totality of fuel employed in the baseline scenario is from non-renewable origin.</p> <p>However, according to CNIP (2007)¹, <i>Caatinga</i> biome has only 0.3% of its total area with sustainable use. Furthermore, considering that 0.24% of this biome has been saved by other project activities, thus, 99.4% is considered as a fraction of non-renewable biomass.</p> <p>It was made two sheets to calculate the amount of wood consumed. The first one encompasses the amount of wood consumed by the ceramics located at the <i>Caatinga</i> biome. The other sheet calculates</p> |

¹ Centro Nordestino de Informações sobre Plantas. Associação de Plantas do Nordeste. 2007. Available at: <http://www.cnip.org.br/planos_manejo.html>. Visited on October 21st, 2010.

| | |
|--|---|
| | <p>de amount of wood consumed regarding only <i>Bom Jesus Ceramic</i>.</p> <p>Dividing these values by the total of wood available, it was achieved the amount of renewable biomass that has been saved by all the project activities or only by <i>Bom Jesus</i> project, respectively.²</p> <p>Afterwards, summing each value with the sustainable use areas defined by CNIP (2007), it was acquired two fraction of renewable biomass.</p> <p>Finally, each value was subtracted from 100% to achieve the $f_{NRB,y}$.</p> <p>Therefore, it was taken the smaller value in order to be more conservative. These sheets are available at the VCU Estimates spreadsheet.</p> |
| <p><i>QA/QC procedures to be applied :</i></p> | <p>The monitoring of this parameter was based in national and internal articles and database. The source provided information about the sustainable use of <i>Caatinga</i> biome.</p> <p>Wood saved from projects with same biome and applied methodology developed by <i>Sustainable Carbon - Projetos Ambientais LTDA</i> was considered in this fraction. The value considered was 0.243161%.</p> |
| <p><i>Any comment:</i></p> | <p>It was employed in order to estimate the amount of non-renewable biomass. Data will be kept for two years after the end of the crediting period or the last issuance of carbon credits for this project activity, whichever occurs later.</p> |

The DOE crosschecked all the information above, available on the Monitoring Report, with the internal records data related to biomass consumption and ceramic production. The Monitoring of the project activity is implemented in conformity with the Monitoring Plan described in the VCS PD. Therefore, the monitoring plan was followed properly.

3.4 ACCURACY OF EMISSION REDUCTION CALCULATIONS

The approved CDM baseline and monitoring AMS-I.E (Switch from Non – Renewable Biomass for Thermal Application by the User) Version 01 valid from February 01st of 2008 to 8th April, 2010, is applied to the project activity.

The Category AMS-I.E: Switch from Non – Renewable Biomass for Thermal Application by the User (Version 01 valid from February 01st, 2008 to April 8th, 2010) comprises small

² According to data from project activities elaborated by *Sustainable Carbon – Projetos Ambientais LTDA*.

thermal appliances that displace the use of non-renewable biomass by introducing new renewable energy end-user technologies. The project's emissions from the combustion of native wood are accounted in the same way as fossil fuel combustion, once it is not renewable and emits CO₂.

The project activity generates less than the limits of 45 MW_{thermal} for Type I Small scale project activities.

Baseline

| |
|--|
| $ER_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossilfuel}$ (Equation 01) |
|--|

Where:

- ER_y: Emission reductions during the year y in tCO₂e
- B_y: Quantity of biomass that is substituted or displaced in tonnes
- f_{NRB,y}: Fraction of non-renewable biomass (wood) used in the absence of the project activity in year y
- NCV_{biomass}: Net calorific value of non-renewable biomass in TJ/tonne
- EF_{projected fossil fuel}: Emission factor for the projected fossil fuel consumption in the baseline in tCO₂/TJ.

B_y is determined using the option “a”:

Calculated through the product of the number of appliances multiplied by the estimate of average annual consumption of biomass per appliance.:

| |
|--|
| $B_y = PR_y \times BF_y$ (Equation 02) |
|--|

Where:

- PR_y = Number of ceramic pieces produced per month;
 - BF_y = Tons of wood per thousands of pieces produced.
- The exactly production (PR_y) will be monitored by the financial transactions of the ceramic.

The value of BF_y was determined through historical consumption of non-renewable biomass by the ceramic. It was calculated by dividing the monthly consumption of each kiln at the baseline from the monthly production of each kiln at the baseline, in thousands.

It was verified in the course of this verification that the above-mentioned methodology has been correctly and accurately applied in calculating the total emission reductions and the emission reduction calculation is accurate and conservative.

3.5 QUALITY OF EVIDENCE TO DETERMINE EMISSION REDUCTIONS

The project proponent as evidence to determine emission reductions submitted several documents, as following:

The evidences were assessed as of sufficient quantity and appropriate quality by DOE. The other documents and web-sites used to the verification team are available in the item 5 of this report.

Reference Documents:

- Final VCS Project design document Version 04; dated on November 11th, 2009;
- Monitoring Report Version 05 completed on January 14th, 2011;
- Operation License, Mário Henrique de Mattos Silva ME– #03211/2008, on September 12th, 2008 for ceramic material manufacture. Validity September 12th, 2010.
- Operation License, Mário Henrique de Mattos Silva ME – #03.09.08.008005-7, on August 31st, 2009 for clay extraction. Validity: August 28th, 2010.
- Calculation spreadsheet of baseline study and emission reduction in “VCS MR Calculations Bom Jesus_period_ 01 04 09_30 04 10_v5”, Version 05 completed on January 14th, 2011;
- And other references indicated in the item 5.0.

3.6 MANAGEMENT AND OPERATIONAL SYSTEM

The management and operational system were checked by Verification team as following:

- The management and operational system of the project is suitable. In accordance with methodologies and procedures indicated.
- An operational structure was established with responsibilities identified. The documents referenced as in the site visit, we confirm the applicability of the structure indicated in the VCS PD v04.
- Staff training plan was clear; training records were available.
- The quality management was clearly defined in the VCS PD v04.

4 VERIFICATION CONCLUSION

Sustainable Carbon – Projetos Ambientais LTDA has commissioned the BUREAU VERITAS CERTIFICATION to carry out the 2nd periodic verification of the project “Bom Jesus Ceramic Fuel Switching Project” with regard to the relevant requirements for CDM project activities. The project reduces GHG emissions due to switching non-renewable to renewable biomass fuel for end-user thermal energy generation. This verification covers the period from April 01st, 2009 to April 30th, 2010.

In the course of the verification Corrective Action Requests (CAR) and Clarification Requests (CL) were raised and successfully closed. There were 9 CARs and 2 CLs raised. There were no FARs raised. The verification is based on the monitoring report (Version 05, on January 14th, 2011), the VCS PD (Version 04, on November 11th, 2009), emission reduction calculation spreadsheet (Version 05, on January 14th, 2011) and supporting documents made available to the BUREAU VERITAS CERTIFICATION by the project participant.

As a result of this verification, the DOE confirms that:

- BUREAU VERITAS CERTIFICATION confirms that the project is implemented as planned and described in the Project Design Document. The monitoring plan is in place and the project is generating GHG emission reductions. The DOE conclude, all operations of the project are implemented and installed as planned and described as in the validated project design document;
- The monitoring plan is in accordance with the applied approved CDM methodology, i.e., AMS-I.E: Switch from non-renewable biomass for thermal applications by the user - Version 01 valid from February 01st, 2008 to 8th April, 2010;
- The monitoring system is in place and functional. The project has generated GHG emission reductions;

BUREAU VERITAS CERTIFICATION can confirm that the GHG emission reductions are calculated without material misstatements. The DOE conclude that in relation to the project's GHG emissions, resulting GHG emission reductions are consistent with the monitoring plan contained in the VCS PD version 04 on November 11th, 2009 and emission reduction calculation spreadsheet (Version 05, on January 14th, 2011), so we consider correct.

All the data and information used to elaborate this Verification Report are treated confidentially by BUREAU VERITAS CERTIFICATION.

Based on the information we have seen and evaluated, we confirm the following statement:

Total Emission Reductions for the Bom Jesus Ceramic Fuel Switching Project

| ER_y (April 01st, 2009 to April 30th, 2010) | | | |
|--|---------------------------------------|-------------------------------|--|
| Period | PR_y (Ceramic units) | B_y (tonnes) | ER_y (tCO₂e) |
| Total 2009 | 21,475,789 | 7,471 | 9,132 |
| Total 2010 | 10,674,860 | 3,714 | 4,538 |
| Total period | 32,150,649 | 11,185 | 13,670 |

Reporting period: From April 01st, 2009 to April 30th, 2010

Verified emissions in the above reporting period:

Project emissions: 0.00 t CO₂ equivalent

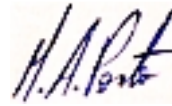
Baseline emissions: 13,670.00 t CO₂ equivalent

Emission reductions: 13,670.00 t CO₂ equivalent

Rio de Janeiro, January 14th, 2011



Rubens da Silva Ferreira
Verification Team Leader



Marcelo Antoniazzi Porto
Internal Technical Reviewer

5 REFERENCES

Documents provided by the company that relate directly to the GHG components of the project.

- Final VCS Project design document Version 04; dated on November 11th, 2009;
- Monitoring Report Version 01 completed on July 7th, 2010;
- Monitoring Report Version 02 completed on September 15th, 2010;
- Monitoring Report Version 03 completed on September 28th, 2010;
- Monitoring Report Version 04 completed on October 25th, 2010;
- Monitoring Report Version 05 completed on January 14th, 2011;
- Calculation spreadsheet of baseline study and emission reduction in “VCS MR Calculations Bom Jesus_period_ 01 04 09_30 04 10_v1”, Version 01 completed on July 7th, 2010;
- Calculation spreadsheet of baseline study and emission reduction in “VCS MR Calculations Bom Jesus_period_ 01 04 09_30 04 10_v2”, Version 02 completed on, September 15th, 2010;
- Calculation spreadsheet of baseline study and emission reduction in “VCS MR Calculations Bom Jesus_period_ 01 04 09_30 04 10_v3”, Version 03 completed on September 28th, 2010;
- Calculation spreadsheet of baseline study and emission reduction in “VCS MR Calculations Bom Jesus_period_ 01 04 09_30 04 10_v4”, Version 04 completed on October 25th, 2010;
- Calculation spreadsheet of baseline study and emission reduction in “VCS MR Calculations Bom Jesus_period_ 01 04 09_30 04 10_v5”, Version 05 completed on January 14th, 2011;
- Operation License, Mário Henrique de Mattos Silva ME– #03211/2008, on September 12th, 2008 for ceramic material manufacture. Validity September 12th, 2010.
- Operation License, Mário Henrique de Mattos Silva ME – #03.09.08.008005-7, on August 31st, 2009 for clay extraction. Validity: August 28th, 2010.
- CTF – Cadastro Técnico Federal (federal technical registration); over the monitoring period;
- Biomass purchase invoices; over the monitoring period;
- Operation Charter – Number: 01021184. Semiannual validity: December 30th, 2010

6 VERIFIERS' CV'S

Bureau Veritas Certification Leader GHG Verifier

Rubens da Silva Ferreira – Is graduated in Chemical Engineering with experience in Quality and Environmental management in glass industries. He is ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007 Lead Auditor and has also experience in the implementation of Environmental Management Systems. Rubens is qualified as Lead Verifier GHG – Green House Gases.

Bureau Veritas Certification Internal Technical Reviewer

Marcelo A. Porto – is graduated in Electrical Engineering, with a graduate specialization in Quality Engineering and a Master's degree in Industrial Engineering. Quality management expert and auditor – he worked in the electro-electronic, mechanical, medical devices, leather and shoes industries –, trained as a lead auditor in the fields of quality (ISO 9001), environment (ISO 14001), social responsibility (SA 8000), and organizational health and safety (OHSAS 18001).

Bureau Veritas Certification Specialist

Daiany Mandato Favarato – Is graduated in Environmental Engineering with experience in renewable energy sector. She is becoming qualified as Lead Verifier GHG – Green House Gases and ISO 14001:2004 Lead Auditor.

7 VCS VERIFICATION PROTOCOL

VERIFICATION PROTOCOL

Table 1 Verification requirements based on the Validation and Verification Manual (EB55 Annex 1)

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|--|------------|------------|--|--------------------|----------------|
| 1 Project implementation in accordance with the registered project design document | | | | | |
| It is assessed if there are any concerns related to the conformity of the actual project activity and its operation with the registered project design document | VVM | 195 | | | |
| a Are all physical features of the proposed CDM project activity proposed in the registered PDD in place? | VVM | 196 | Yes, they are all in place. | OK | OK |
| b Have the project participants operated the proposed CDM project activity as per the registered PDD? | VVM | 196 | Yes, it was operated in accordance with the registered VCS PD. | OK | OK |
| c Was an on-site visit conducted? | VVM | 196 | Yes. An on-site visit was conducted on July 21 th , 2010. | OK | OK |
| d If not, justify the rationale of the decision. | VVM | 196 | Not Applicable. | OK | OK |
| e Does the implementation or operation of CDM project activity conform with the description contained in the registered PDD? | VVM | 197 | CAR01: The VCS PD version 4 states: “The project activity focuses on the use of sugar cane briquette, Algaroba wood, Eucalyptus wood, native wood with sustainable management plan, wood from constructions residues, and sawdust as renewable biomasses for energy supply.” | CAR01 CAR02 | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|--------------------|------|---|---|----------------|----------------|
| | | | <p>During this monitoring period, glycerin was used. The Monitoring Report should state this change in the project. Please, include this information in the Monitoring Report.</p> <p>CAR02: The MR version 01 indicates the sawdust as a renewable biomass used in the Bom Jesus Ceramic Fuel Switching Project, but the VCS MR Calculations Bom Jesus_period_ 01 04 09_30 04 10_v1 does not indicate the use of sawdust.</p> | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|--|------|-----|--|----------------|----------------|
| f If not, which are the potential impacts due to these changes, according to the relevant guidelines established by the Executive Board (EB48-§73)? | VVM | 197 | There are no potential impact due to this change. The sensitivity analysis was properly done during the validation period. | OK | OK |
| g Was a notification or a request for approval of changes from the project activity as described in the registered PDD submitted prior to the conclusion of the verification/certification for the corresponding? | VVM | 197 | There is no need to notify or request for approval. | OK | OK |
| 2 Compliance of the monitoring plan with the monitoring methodology | | | | | |
| It Is assessed if the monitoring plan of the proposed CDM project activity complies with the applied methodology | | | | | |
| a Is the validated monitoring plan in accordance with the approved methodology applied by the proposed CDM project activity? | VVM | 200 | CAR03: Correct the validity of the Methodology every time it is mentioned along the Monitoring Report. | CAR03 | OK |
| b If no, was a request for revision of the monitoring plan was done? (The DOE may request for revision of the monitoring plan covering the monitoring period under verification, for approval by the CDM Executive Board) | VVM | 201 | Not Applicable | OK | OK |
| c Are there any monitoring aspects of the project activity that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency)? | VVM | 202 | No, all the monitoring aspects are specified in the methodology. | OK | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|------------|------------|---|-------------------------|----------------|
| 3 Compliance of monitoring with the monitoring plan | | | | | |
| It is assessed if monitoring of reductions in GHG emissions to result from the proposed CDM project activity is implemented in accordance with the monitoring plan contained in the registered PDD or the accepted revised monitoring planErro! Indicador não definido.. | VVM | 204 | | | |
| a Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants? | VVM | 205 | The methodology and the monitoring plan are properly implemented. | OK | OK |
| b Have all parameters stated in the monitoring plan, the applied methodology and relevant CDM Executive Board decisions been sufficiently monitored and updated as applicable, including: | VVM | 205 | | OK | OK |
| i Project emission parameters? | VVM | 205 | Yes. The applied methodology does not predict project emissions. | OK | OK |
| ii Baseline emission parameters? | VVM | 205 | The units of the parameters must be equal to the units of the VCS PD version 4. CAR04: The unit of the parameter PRy is wrong in the Monitoring Report. Please correct it. CAR05: The unit of the parameter Q renbiomass is wrong in the Monitoring Report. Please correct it. CAR06: The unit of the parameter BFy is wrong in the Monitoring Report. Please correct it. | CAR04 CAR05 CAR06 | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|------|-----|---|----------------|----------------|
| iii Leakage parameters? | VVM | 205 | The leakage parameters were sufficiently monitored. | OK | OK |
| iv Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan? | VVM | 205 | <p>The responsible for project monitoring Mrs. Elisângela Maria Carneiro, from Bom Jesus Ceramic.</p> <p>The monitoring report was completed on July 7th, 2010 by Filipe Luth Violim and Rafael Kupper from Sustainable Carbon - Projetos Ambientais LTDA.</p> | OK | OK |
| c Is the accuracy of equipment used for monitoring in accordance with the relevant guidance provided by the CDM Executive Board and are equipment controlled and calibrated in accordance with the monitoring plan? | VVM | 205 | Yes, it was in accordance and the equipment are controlled. | OK | OK |
| i Are monitoring results consistently recorded as per approved frequency? | VVM | 205 | Yes, it was recorded as per approved frequency. | OK | OK |
| ii Have quality assurance and quality control procedures been applied in accordance with the monitoring plan monitoring plan? | VVM | 205 | <p>CL01: The VCS PD states: "With the carbon credits income, in order to complement the monitoring of the production of ceramic devices, equipments from Alutal will monitor each burning cycle of the 2 kilns through graphics of the temperature reached in each kiln versus time."</p> <p>Although this is the second Verification, this equipment was not acquired. Please explain why</p> | CL01 | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|--------------------|------|---|--|----------------|----------------|
| | | | this improvement wasn't done in the project. | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|------|-----|---|----------------|----------------|
| 4 Assessment of data and calculation of greenhouse gas emission reductions | | | | | |
| It is assessed if GHG emission reductions achieved by / resulting from the proposed CDM project activity are calculated applying the selected methodology | VVM | 207 | | | |
| a Is a complete set of data for the specified monitoring period is available? (If no, i.e., only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the DOE shall opt to either make the most conservative assumption theoretically possible in finalizing the verification report, or raise a request for deviation prior to submitting request for issuance, if appropriate). | VVM | 208 | The legal documents were available and within the actual legislation. | OK | OK |
| b Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis? | VVM | 208 | The following references sources was cross-checked: (all checked on August 11 th 2010). 1. OK. 2. OK. 3. OK. 4. OK. 5. OK. 6. OK. 7. OK. 8. OK. 9. OK. 10. OK. 11. OK. 12. OK. | OK | OK |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|--------------------|------|---|---|----------------|----------------|
| | | | 13. OK. 14. OK. 15. OK. 16. OK. 17. OK. 18. OK. 19. OK. 20. OK. 21. OK. 22. OK. 23. OK. 24. OK. 25. OK. 26. OK. 27. OK. 28. OK. 29. OK. 30. OK. 31. OK. 32. OK. 33. OK. 34. OK. 35. OK. | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl | | | | | | | | | | | | |
|---|--|-----|---|----------------|--|---------------|-------|-------|-------------------------------|------------|------|-----------|------|----------------|------|-------------------------|----|
| c Have calculations of baseline emissions, proposed CDM project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document? | VVM | 208 | <p>CAR07: There were some different values for the amount of biomass. During the site visit the values in the receipts that are different from the Monitoring Report are in the table below:</p> <table border="1" data-bbox="1323 467 1637 850"> <thead> <tr> <th data-bbox="1323 467 1503 759">Month</th> <th data-bbox="1503 467 1637 759">Native wood with sustainable forest management plan (tons)</th> </tr> </thead> <tbody> <tr> <td data-bbox="1323 759 1503 850">February 2010</td> <td data-bbox="1503 759 1637 850">149,3</td> </tr> </tbody> </table> <table border="1" data-bbox="1323 898 1637 1323"> <thead> <tr> <th data-bbox="1323 898 1503 1058">Month</th> <th data-bbox="1503 898 1637 1058"><i>Eucalyptus</i> wood (tons)</th> </tr> </thead> <tbody> <tr> <td data-bbox="1323 1058 1503 1145">April 2009</td> <td data-bbox="1503 1058 1637 1145">30,6</td> </tr> <tr> <td data-bbox="1323 1145 1503 1233">June 2009</td> <td data-bbox="1503 1145 1637 1233">20,4</td> </tr> <tr> <td data-bbox="1323 1233 1503 1323">September 2009</td> <td data-bbox="1503 1233 1637 1323">20,4</td> </tr> </tbody> </table> | Month | Native wood with sustainable forest management plan (tons) | February 2010 | 149,3 | Month | <i>Eucalyptus</i> wood (tons) | April 2009 | 30,6 | June 2009 | 20,4 | September 2009 | 20,4 | CAR07 CAR08 CAR09 | OK |
| Month | Native wood with sustainable forest management plan (tons) | | | | | | | | | | | | | | | | |
| February 2010 | 149,3 | | | | | | | | | | | | | | | | |
| Month | <i>Eucalyptus</i> wood (tons) | | | | | | | | | | | | | | | | |
| April 2009 | 30,6 | | | | | | | | | | | | | | | | |
| June 2009 | 20,4 | | | | | | | | | | | | | | | | |
| September 2009 | 20,4 | | | | | | | | | | | | | | | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl | | | | | | | | | | |
|--------------------|-----------------------------------|---|---|----------------|-----------------------------------|------------|-----|------------|------|-------|--------------------|------------|--------|--|--|
| | | | <table border="1" data-bbox="1323 320 1637 655"> <thead> <tr> <th data-bbox="1323 320 1509 480">Month</th> <th data-bbox="1509 320 1637 480">Sugar cane briquette (tons)</th> </tr> </thead> <tbody> <tr> <td data-bbox="1323 480 1509 568">April 2009</td> <td data-bbox="1509 480 1637 568">0,0</td> </tr> <tr> <td data-bbox="1323 568 1509 655">April 2010</td> <td data-bbox="1509 568 1637 655">15,0</td> </tr> </tbody> </table> <table border="1" data-bbox="1323 703 1637 919"> <thead> <tr> <th data-bbox="1323 703 1509 831">Month</th> <th data-bbox="1509 703 1637 831">Glycerin (tons)</th> </tr> </thead> <tbody> <tr> <td data-bbox="1323 831 1509 919">March 2010</td> <td data-bbox="1509 831 1637 919">136,16</td> </tr> </tbody> </table> <p data-bbox="1144 1007 1368 1038">Please correct it.</p> <p data-bbox="1144 1110 1816 1294">CAR08: Please provide an evidence of the volume that a truck is supposed to carry (some receipts of “Algaroba wood” have a full truck as their unit measured.) The amount of this biomass will be checked right after.</p> | Month | Sugar cane briquette (tons) | April 2009 | 0,0 | April 2010 | 15,0 | Month | Glycerin (tons) | March 2010 | 136,16 | | |
| Month | Sugar cane briquette (tons) | | | | | | | | | | | | | | |
| April 2009 | 0,0 | | | | | | | | | | | | | | |
| April 2010 | 15,0 | | | | | | | | | | | | | | |
| Month | Glycerin (tons) | | | | | | | | | | | | | | |
| March 2010 | 136,16 | | | | | | | | | | | | | | |

| CHECKLIST QUESTION | Ref. | § | COMMENTS | Draft Concl | Final Concl |
|---|------|-----|--|----------------|----------------|
| | | | CAR09: The invoices of Industries and constructions residues are unreadable. It is impossible to identify the numbers. Therefore, provide a better resolution copy of this invoices. They will be verified right after. | | |
| d Have any assumptions used in emission calculations been justified? | VVM | 208 | There were no assumptions. | OK | OK |
| e Have appropriate emission factors, IPCC default values and other reference values been correctly applied? | VVM | 208 | CL02: Please explain why the value of biomass surplus for the sugarcane bagasse was modified on the MR version 01 when compared with the value from the VCS PD version 04. | CL02 | OK |

Table 2 Resolution of Corrective Action / Forward Action / Clarification Requests.

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|--|--|---|---|
| <p>CL01: The VCS PD states: “With the carbon credits income, in order to complement the monitoring of the production of ceramic devices, equipments from Alutal will monitor each burning cycle of the 2 kilns through graphics of the temperature reached in each kiln versus time.”</p> <p>Although this is the second Verification, this equipment was not acquired. Please explain why this improvement wasn't done in the project.</p> | VVM205 | These equipments were just bought, and will be installed as soon as possible. The invoice will be sent to the verification team in order to confirm this information. | Ok, the invoice was sent to the verification team. CL01 is closed out. |
| <p>CL02: Please explain why the value of biomass surplus for the sugarcane bagasse was modified on the MR version 01 when compared with the value from the VCS PD version 04.</p> | VVM208 | An <i>ex ante</i> data value of biomass surplus for the sugar cane was taken according to the VCS PD, in the revised monitoring report. | Ok, CL02 is closed out. |
| <p>CAR01: The VCS PD version 4 states:</p> | VVM197 | According to the sensitivity analysis showed on figure 7 and table 9 of the VCS PD Version 4, | In the VCS PD Version 04, it is stated that glycerin is a biomass approved to used by the project proponent. But, the |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|--|--|--|--|
| <p>“The project activity focuses on the use of sugar cane briquette, Algaroba wood, Eucalyptus wood, native wood with sustainable management plan, wood from constructions residues, and sawdust as renewable biomasses for energy supply.”</p> <p>During this monitoring period, glycerin was used. The Monitoring Report should state this change in the project. Please, include this information in the Monitoring Report.</p> | | <p>glycerin is a biomass approved to be used by the project proponent.</p> <p>Second PP response:</p> <p>The biomass “glycerin” was stated on the parameter “Origin of Renewable biomass” as requested.</p> | <p>Monitoring Report must contain this information to state the biomasses used during the monitoring period.</p> <p>In the table of the parameter “Origin of Renewable biomass”, the biomass “sawdust” is stated and “glycerin” is not. Please correct it.</p> <p>Second Response: Ok, it was corrected. CAR01 is closed out.</p> |
| <p>CAR02: The MR version 01 indicates the sawdust as a renewable biomass used in the Bom Jesus Ceramic Fuel Switching Project, but the VCS MR Calculations Bom Jesus_period_01 04 09_30 04 10_v1 does not indicate the use of sawdust.</p> | <p>VVM197</p> | <p>The MR version 1 really indicates sawdust as biomass used during the monitored period, but, in fact, it was not. Therefore, the section A.3 was corrected, informing just the biomass used during the period.</p> | <p>Ok, it was corrected. CAR02 is closed out.</p> |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|--|--|--|--|
| CAR03: Correct the validity of the Methodology every time it is mentioned along the Monitoring Report. | VVM200 | It was corrected. Second PP response: The validity of the methodology was corrected in both pages as requested. | On the pages 14 and 15 of the monitoring report still has the old validity. Please correct it. Second Response: Ok, it was corrected. CAR03 is closed out. |
| CAR04: The unit of the parameter PRy is wrong in the Monitoring Report. Please correct it. | VVM205 | The unit of the parameter PRy was corrected according to the VCS PD section 3.3. | Ok, it was corrected. CAR04 is closed out. |
| CAR05: The unit of the parameter Q renbiomass is wrong in the Monitoring Report. Please correct it. | VVM205 | The unit of the parameter Qrenbiomass was corrected according to the VCS PD section 3.3. | Ok, it was corrected. CAR05 is closed out. |
| CAR06: The unit of the parameter BFy is wrong in the Monitoring Report. Please correct it. | VVM205 | The unit of the parameter BFy was corrected according to the VCS PD section 3.3. | Ok, it was corrected. CAR06 is closed out. |
| CAR07: There were some different values for the amount of biomass. During the site visit the values in the receipts that are different from the Monitoring Report are in the table below: | VVM208 | The amount of biomass has been modified according to the right values verified during the site visit by the verification team. | Ok, the values were corrected. CAR07 is closed out. |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion | | | | | | | | | | | | |
|---|--|--|------------------------------|-------|-------|-------------------------------|------------|------|-----------|------|----------------|------|--|--|--|
| <table border="1" data-bbox="340 392 654 775"> <thead> <tr> <th data-bbox="340 392 519 683">Month</th> <th data-bbox="519 392 654 683">Native wood with sustainable forest management plan (tons)</th> </tr> </thead> <tbody> <tr> <td data-bbox="340 683 519 775">February 2010</td> <td data-bbox="519 683 654 775">149,3</td> </tr> </tbody> </table> <table border="1" data-bbox="340 823 654 1249"> <thead> <tr> <th data-bbox="340 823 519 983">Month</th> <th data-bbox="519 823 654 983"><i>Eucalyptus</i> wood (tons)</th> </tr> </thead> <tbody> <tr> <td data-bbox="340 983 519 1070">April 2009</td> <td data-bbox="519 983 654 1070">30,6</td> </tr> <tr> <td data-bbox="340 1070 519 1158">June 2009</td> <td data-bbox="519 1070 654 1158">20,4</td> </tr> <tr> <td data-bbox="340 1158 519 1249">September 2009</td> <td data-bbox="519 1158 654 1249">20,4</td> </tr> </tbody> </table> | Month | Native wood with sustainable forest management plan (tons) | February 2010 | 149,3 | Month | <i>Eucalyptus</i> wood (tons) | April 2009 | 30,6 | June 2009 | 20,4 | September 2009 | 20,4 | | | |
| Month | Native wood with sustainable forest management plan (tons) | | | | | | | | | | | | | | |
| February 2010 | 149,3 | | | | | | | | | | | | | | |
| Month | <i>Eucalyptus</i> wood (tons) | | | | | | | | | | | | | | |
| April 2009 | 30,6 | | | | | | | | | | | | | | |
| June 2009 | 20,4 | | | | | | | | | | | | | | |
| September 2009 | 20,4 | | | | | | | | | | | | | | |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion | | | | | | | | | | |
|--|--|--|--|-----|------------|------|-------|-----------------|------------|--------|--|--|--|
| <table border="1" data-bbox="340 392 651 727"> <thead> <tr> <th>Month</th> <th>Sugar cane briquette (tons)</th> </tr> </thead> <tbody> <tr> <td>April 2009</td> <td>0,0</td> </tr> <tr> <td>April 2010</td> <td>15,0</td> </tr> </tbody> </table> <table border="1" data-bbox="340 775 651 991"> <thead> <tr> <th>Month</th> <th>Glycerin (tons)</th> </tr> </thead> <tbody> <tr> <td>March 2010</td> <td>136,16</td> </tr> </tbody> </table> <p data-bbox="190 1082 409 1110">Please correct it.</p> | Month | Sugar cane briquette (tons) | April 2009 | 0,0 | April 2010 | 15,0 | Month | Glycerin (tons) | March 2010 | 136,16 | | | |
| Month | Sugar cane briquette (tons) | | | | | | | | | | | | |
| April 2009 | 0,0 | | | | | | | | | | | | |
| April 2010 | 15,0 | | | | | | | | | | | | |
| Month | Glycerin (tons) | | | | | | | | | | | | |
| March 2010 | 136,16 | | | | | | | | | | | | |
| <p>CAR08: Please provide an evidence of the volume that a truck is supposed to carry (some receipts of “Algaroba wood” have a full truck as their unit measured.) The amount of this biomass will be checked right after.</p> | <p>VVM208</p> | <p>It was considered the amount of 40 m³ on each full truck, this is the value that every other full truck carries even when the receipt is measured in another unit.</p> | <p>Ok, it was considered the amount of 40m³ of a full truck. However, the amount of the biomass Algaroba was checked and the values were different from the Monitoring Report. Please</p> | | | | | | | | | | |

| Draft report clarifications and corrective action requests by verification team | Reference to checklist question in Periodic Verification Checklist | Summary of project owner response | Verification team conclusion |
|---|--|---|--|
| | | <p>Second PP response:</p> <p>The amount of Algaroba wood has been modified according to the right values provided by the verification team.</p> | <p>correct it.</p> <p>Second Response: Ok, it was corrected. CAR08 is closed out.</p> |
| <p>CAR09: The invoices of Industries and constructions residues are unreadable. It is impossible to identify the numbers. Therefore, provide a better resolution copy of this invoices. They will be verified right after.</p> | <p>VVM208</p> | <p>These invoices will be sent to the verification team.</p> | <p>Ok, the invoices were sent to the verification team. The values are correct. CAR09 is closed out.</p> |