

# GOMES DE MATTOS CERAMIC FUEL SWITCHING PROJECT VERIFICATION REPORT

Document Prepared By IBOPE Instituto Brasileiro de Opinião Pública e Estatística Ltda

|                      |                                                |
|----------------------|------------------------------------------------|
| <b>Project Title</b> | Gomes de Mattos Ceramic Fuel Switching Project |
| <b>Version</b>       | 01                                             |
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|                            |                                                                                                                                      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Report Title</b>        | Gomes de Mattos Ceramic Fuel Switching Project Verification Report                                                                   |
| <b>Client</b>              | Sustainable Carbon – Projetos Ambientais Ltda                                                                                        |
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| <b>Work Carried Out By</b> | Mr. Rafael Kupper, Team Leader and Mr. Fernando Nogueira, Verifier.                                                                  |

## Summary:

### A brief description of the verification and the project

The project activity is the project of *Gomes de Mattos* ceramic, which is a red ceramic factory located in *Crato* municipality, in the State of *Ceará*, northeast region of Brazil. The ceramic factory produces ceramic tiles and bricks, destined mainly for the regional market in *Ceará*.

The objective of the implementation of this project activity in the *Gomes de Mattos* ceramic is to stop using the native firewood (without sustainable management plan), which is a non-renewable fuel, and

completely substitute it with renewable biomasses to feed the ceramic kilns and fire their ceramic units, so that they can minimize environmental impacts related to the native wood deforestation and consumption.

This fuel switching project is reducing the greenhouse gas (GHG) emissions through the substitution of native wood for renewable biomasses to generate thermal energy.

The proposed project started the fuel switch in April of 2003 (which was defined as the project start date), and this was completely achieved by the end of April 2006. The project crediting period is 10 years, i.e., from 01-May-2006 to 30-April-2016.

### **The purpose and scope of verification**

IBOPE has performed the verification of the project: “Gomes de Mattos Ceramic Fuel Switching Project” according to the Verified Carbon Standard – VCS Version 3.4. This verification covers the period from 01 January 2013 to 28 February 2014.

The verification includes confirming the implementation of the monitoring plan of the VCS PD and the application of the CDM small scale methodology “AMS-I.E.: Switch from Non-Renewable Biomass for Thermal Applications by the User”, version 01.

### **The method and criteria used for verification**

The verification team has reviewed the Monitoring Report against the criteria established in the VCS Version 3.5 Program Guide and the VCS Validation and Verification Manual. In line with the criteria included in the VCS Version 3.5 Program Guide, the verification is meant to ensure that the reported emission reductions are real, measurable, permanent, additional, independently audited, unique, transparent and conservative.

The verification consisted of a desk review and an on-site visit (March 13<sup>th</sup> and 14<sup>th</sup>, 2013) where interviews with the key personnel from the project company *Gomes de Mattos Ceramic* and the PD developer Sustainable Carbon – Projetos Ambientais Ltda were conducted. The verification team also confirmed that the monitoring procedures were correctly applied and the emission reductions were correctly calculated.

### **The number of findings raised during verification**

This verification came out with 10 (ten) findings, which were all listed in Appendix A. They have all been attended and closed.

### **Any uncertainties associated with the verification**

There are no uncertainties associated with this verification.

### **Summary of the verification conclusion**

The Monitoring Report is considered to be in compliance with VCS Program Guide, the approved methodology AMS I.E (version 01) and the Monitoring Plan presented in the Project Description.

During the monitoring period from 01 January 2013 to 28 February 2014, the project generated the following GHG emission reductions: **67,409** tCO<sub>2</sub> equivalents.

IBOPE does not take any responsibility towards the issuance and utilization of the emission reductions hereby verified and certified. Request for issuance of VCUs shall be made by the project proponent to an approved VCS Program Registry based on the requirements set out under the most recent version of the VCS Program Guidelines clause on VCS Registration. The verification of reported emission reductions is based on the information made available to us and the engagement conditions detailed in this report. IBOPE cannot guarantee the accuracy or correctness of this information. Hence, IBOPE cannot be held liable by any party for decisions made or not made based on this report.

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## 1 INTRODUCTION

### 1.1 Objective

Sustainable Carbon – Projetos Ambientais LTDA has commissioned IBOPE to verify the emission reductions reported for the VCS “Gomes de Mattos Ceramic Fuel Switching Project” with regard to the relevant requirements for VCS program as per the Verified Carbon Standard Version 3.4.

The objective is to verify that the actual monitoring systems and procedures are in compliance with the monitoring system and procedures described in the Monitoring Plan that is presented in the PD as well as with the Monitoring Manual. In addition, the periodic verification evaluates the greenhouse gas (GHG) emissions data presented in the Monitoring Report and expresses a conclusion about whether the presented GHG emissions data is free off material misstatements and sufficiently supported by evidence.

### 1.2 Scope and Criteria

The verification comprises a review of the monitoring report over the monitoring period from 01 January 2013 to 28 February 2014, based on the registered Project Description (PD) in part of the project design, monitoring parameters, monitoring plan, emission reduction calculation, monitoring methodology and all related evidences provided by project participant. Those documents have been reviewed and verified against VCS Version 3.4 requirements, UNFCCC rules and associated interpretations.

The main scopes of this verification are:

- Verify whether the emission reductions generated by the project are in line with the VCS Verification Protocol and the information provided by the project participants contains all the necessary information to evidence the project's compliance with all criteria in the VCS.
- Verify that the project has been implemented as described in the Project Design (PD) during the verification period.
- Confirm that the monitoring plan was implemented and fully functional to generate voluntary emission reductions (VCU) without any double counting during the whole verification period.
- Give a conclusion whether reported data are accurate, complete, consistent, and transparent, with a high level of assurance and free of material error or misstatement.

In particular, the project baseline, monitoring plan and the project compliance with relevant applicable protocols and criteria (i.e. UNFCCC, VCS, host Party and others) are to be validated in order to confirm that the project design, as documented, is sound and reasonable and meets the applicable criteria.

The correct application of the CDM small scale methodology: “AMS-I.E.: Switch from Non-Renewable Biomass for Thermal Applications by the User” v.1 was already. An explicit review of the validation and its underlying assumptions made and its conclusion are not scope of this verification.

## 1.3 Level of Assurance

As the VCS Version 3.4 recognizes verified emission reductions, IBOPE has focused on providing a reasonable level of assurance that the emission reduction calculation methodology is appropriate and correctly applied, and that emission reductions have been accurately monitored. The implementation can be considered sustainable and no indications were observed leading to the assumption of high risks beyond common project specific challenges in relation to the likelihood of continual removal of GHG emission reduction through the project. This judgment is based on the document review, on site checks and consistency checks.

In the case it is required, IBOPE may discount verified emission reductions or requests a discount of these by using conservative assumptions for uncertainties in emission reduction calculations that cannot be fully quantified or that cannot give a desired level of assurance. For verifying/certifying VCUs, the desired level of assurance was based on the combined quantitative assessment of the accuracy of monitoring project performance and the identification of material risks.

## 1.4 Summary Description of the Project

*The Gomes de Mattos Ceramic company is located in the city of Crato, Ceará State, northeast of Brazil. Gomes de Mattos Ceramic is an enterprise that produces structural ceramic devices such as bricks and tiles.*

This fuel switching project is reducing the greenhouse gas (GHG) emissions through the substitution of native wood for renewable biomasses to generate thermal energy. It was concluded that this is feasible when considering the income derived from commercializing the resulting carbon credits. This move was originally unattractive due to the high investment costs of the adaptation of machineries to the new biomass and other barriers

The production process at Gomes de Mattos Ceramic encompasses two Hoffman kilns and one Câmara kiln in order to burn the fuel and fire the ceramic units, which are mainly used in the construction sector. Due to the fuel switch, the Ceramic had to acquire two mechanic burners to feed the Hoffman Kilns with the renewable biomasses.

The proposed project started the fuel switch in April of 2003 (which was defined as the project start date), and this was completely achieved by the end of April 2006. The project crediting period is 10 years, i.e., from 01-May-2006 to 30-April-2016.

## 2 VERIFICATION PROCESS

### 2.1 Method and Criteria

The verification is based on validated project description including baseline and monitoring report. These documents are reviewed against VCS Version 3.4 requirements. IBOPE has, based on the recommendations in the Validation and Verification Standard, and employed a risk-based approach in the verification, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

The verification includes the next steps: desk review of the project design documents and monitoring report; on-site visit and follow-up interviews and resolution of outstanding issues and the issuance of the final verification report and opinion.

### 2.2 Document Review

The following table outlines the documentation reviewed during the verification process.

|                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------|
| / 1/ UNFCCC, Clean Development Mechanism Validation and Verification Standard, Version 05.0                                              |
| / 2/ UNFCCC, CDM small scale methodology “AMS-I.E.: Switch from Non-Renewable Biomass for Thermal Applications by the User”, version 01. |
| / 3/ VCS PD registered, Version 5 – May 27 <sup>th</sup> , 2009                                                                          |
| / 4/ VCS Verification Report – 1 <sup>st</sup> Periodic Verification – May 27 <sup>th</sup> 2009                                         |
| / 5/ VCS Verification Report – 2 <sup>nd</sup> Periodic Verification - October 25 <sup>th</sup> 2010                                     |
| / 6/ VCS Verification Report – 3 <sup>rd</sup> Periodic Verification - October 20 <sup>th</sup> 2011                                     |
| / 7/ VCS Verification Report – 4 <sup>th</sup> Periodic Verification – April 1 <sup>st</sup> 2013                                        |
| /8/ VCS Monitoring Report - First Draft - Version 01 – March 28 <sup>th</sup> , 2014                                                     |
| / 9/ VCS Monitoring Report - Last version - Version 02 – April 08 <sup>th</sup> , 2014                                                   |
| / 10/ VCS MR Calculation CGM_period 05_01 01 13_28 02 14_v.1.1                                                                           |
| / 11/ VCS MR Calculation CGM_period 05_01 01 13_28 02 14_v.2.0                                                                           |
| /12/ VCS Validation Report - May 27 <sup>th</sup> 2009                                                                                   |

## 2.3 Interviews

IBOPE has performed an on-site visit on March 13<sup>th</sup> and 14<sup>th</sup> 2014 during which the operations of the ceramic were reviewed. During the visit the verification team conducted interviews with the following representatives of the project company Gomes de Mattos Ceramic and the Sustainable Carbon – Projetos Ambientais Ltda who prepared the VCS PD and the VCS Monitoring Report.

- Mr. Ronlado Sampaio Gomes de Mattos, Director and Owner
- Mr. Stephenson Ramalho de Lacerda, Manager and monitoring data responsible;
- Ms. Larissa Tega, Technical Analyst of Sustainable Carbon – Projetos Ambientais Ltda
- Marcelo Hector Sabbagh Haddad, Technical coordinator of Sustainable Carbon – Projetos Ambientais Ltda

The monitoring report was completed by Marcelo Hector Sabbagh Haddad, Denis Gonçalves dos Santos, Larissa Tega da Fonseca and Thiago de Avila Othero, from Sustainable Carbon – Projetos Ambientais LTDA.

## 2.4 Site Inspections

An on-site inspection was conducted on March 13<sup>th</sup> and 14<sup>th</sup>, 2013 with the purpose to clarify whether the project had been carried out as described in the VCS PD, assessment of documents and interview people in order to verify the project conditions. The main verification topics during the site visit include, but are not limited to:

- On-site assessment to confirm whether all relevant equipment are installed and works as described in the registered VCS PD;
- The operating staff was interviewed and observed in order to check the risks of inappropriate operation and data collection procedures;
- Information process for generating, aggregating and reporting the selected monitored parameters were reviewed;
- The monitoring processes, routines and documentations were audited to check their proper application;
- The monitoring data were checked completely.

The on-site visit at the ceramic confirmed that the monitoring and reporting is carried out consistently and in line with established procedures and as per the requirements of the monitoring plan mentioned in the registered VCS PD.

## 2.5 Resolution of Findings

This process is aimed at resolving any outstanding issues which need to be clarified prior to the IBOPE conclusion on the project design and monitoring results. In order to ensure transparency a verification protocol is customized for the project. The protocol shows in transparent manner criteria (requirements), means of verification and their results against the identified criteria.

Findings established during the verification can either be seen as a non-fulfillment of CDM criteria and VCS Version 3.4, or where a risk to the fulfillment of project objectives is identified. Corrective action requests (CAR) issued where mistakes have been made with a direct influence on project results. Moreover, clarifications (CL) were requested where additional information is needed to fully clarify an issue.

During the course of this Verification, it was checked that all of the data from the spreadsheet was backed up by solid proof via receipts in the case of purchases of burning material or process logs for the production of ceramic pieces. The calculations of emission reductions were revised and proofed. In any of the cases, there were no discrepancies or mistakes found.

This verification came out with 10 (ten) findings – 6 (six) corrective action request and 4 (four) clarification request, which were all listed in Appendix A. They have all been attended and closed.

### 2.5.1 Forward Action Requests

Not applicable

## 2.6 Eligibility for Validation Activities

Not applicable

## 3 VALIDATION FINDINGS

Not applicable

### 3.1 Participation under Other GHG Programs

Not applicable

### 3.2 Methodology Deviations

Not applicable

### 3.3 Project Description Deviations

The registered VCS PD version 05 establishes that the project proponent (meaning the ceramic owner) would measure the amount of renewable biomasses used (parameter Qrenbiomass). However, during the entire monitored period, this parameter was monitored through all the receipts and invoices of biomass received by the ceramic company. This means the amount of renewable biomass is measured by provider and controlled by the ceramic owner, by storing receipts and invoices.

This approach was chosen considering that it is the responsibility of the provider to measure the amount of biomass, since this information needs to be available in the sale invoice or receipt. As this information is used for commercial purposes (to calculate due financial compensations), it is considered that data from the suppliers are a reliable source for this parameter.

It was identified a mistake in the NCV value of native firewood validated in the in the VCS PD version 05 and in the spreadsheet VCU estimates CGM\_v.05, tab Native species considered. The equation applied in column "E" to calculate NCV value was corrected according to the Content of Hydrogen indicated on cell "F27". Therefore, the NCV value for native firewood with no forest management plan as well as the NCV of native wood from forest management plan were updated in this monitoring period.

IBOPE hereby confirmed that the deviations ar appropriately described and justified, and verified that this deviation has no impact in the applicability of the methodology, additionality, and the appropriateness of the baseline scenario. Moreover, the project remains in compliance with the VCS rules.

### 3.4 Grouped Project

Not applicable

## 4 VERIFICATION FINDINGS

### 4.1 Project Implementation Status

The project consists in fuel switching, substitution of native wood for renewable biomasses to generate thermal energy, feeding the kilns and fire the ceramic units from the Gomes de Mattos Ceramic, according to the VCS PD.

During the on-site visit, it was physically observed by the verification team that renewable biomasses such native firewood from sustainable management plan, Algaroba wood, sawdust, municipal wood residues, residues from cashew trees and Eucalyptus Wood from forest management plan have been employed on the kilns of the Gomes de Mattos Ceramic for energy supply.

The project implementation status has follows:

|                              |                                       |
|------------------------------|---------------------------------------|
| Start Date                   | 01-April-2006                         |
| VCS project crediting Period | 10 years, twice renewable             |
| First crediting Period       | 01-May-2006 and ends on 30-April-2016 |

*The VCS PD project was validated by the Designated Operational Entity TÜV Nord CERT GmbH and this present monitoring report is being verified by Instituto Brasileiro de Opinião Pública e Estatística Ltda. (IBOPE).*

There are no remaining issues from previous validation and verifications. The ten (10) CARs and CIs raised during this verification process were satisfactorily answered by the project proponent and are closed.

As described on the VCS PD version 05, the production process at Gomes de Mattos ceramic encompasses two Hoffman kilns and one Câmara kiln in order to burn the fuel and fire the ceramic units, which are mainly used in the construction sector. According to the VCS PD, the both Hoffman kilns and the Câmara kiln produce together approximately 1,500,000 of ceramic units per month or 2,949 tonnes of ceramic units monthly.

In the current monitoring period, as renewable biomasses, the ceramic factory is employing native firewood from sustainable management plan, Algaroba wood, sawdust, municipal wood residues, residues from cashew trees and Eucalyptus Wood from forest management plan

According to the VCS PD, in order to the project is in accordance with local laws, it must run with licenses under valid time. During the on-site visit, the verification team checked the environmental license and clay extraction license and they were valid during this monitored period, confirming the project compliance with the local laws.

IBOPE hereby verified that there are no material discrepancies between project implementation and the project description.

## 4.2 Accuracy of GHG Emission Reduction and Removal Calculations

The verification team has checked the emission reduction calculation and confirmed that the Baseline Emissions have been calculated according to the formulas in the PD and following the approved CDM baseline and monitoring methodology “AMS-I.E.: Switch from Non-Renewable Biomass for Thermal Applications by the User”, version 01.

The emission reduction is calculated as baseline emissions (BE<sub>y</sub>) minus project emissions (PE<sub>y</sub>) minus leakage emissions (LE<sub>y</sub>). Since no project and leakage emissions are identified according to the applied methodology, baseline emissions are equal to the amount of emission reduction.

$$ER_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossilfuel}$$

$$B_y = PR_y \times BF_y$$

Where:

ER<sub>y</sub> = Emission reductions during the year y in tCO<sub>2e</sub>

f<sub>NRB,y</sub> = Fraction of biomass used in the absence of the project activity in year y that can be established as non renewable biomass using survey methods

NCV<sub>biomass</sub> = Net calorific value of the non-renewable that is substituted (IPCC default for wood fuel, 0.015 TJ/tonne)

B<sub>y</sub> = Quantity of biomass that is substituted or displaced in tonnes

PR<sub>y</sub> = Number of ceramic pieces produced per month

BF<sub>y</sub> = Tonnes of wood per thousand of pieces produced

The calculations presented on the spreadsheet are right and therefore the emissions reductions are to be considered generated through the quantity of biomass that is substituted or displaced in tonnes of ceramic units multiplied by fraction of non-renewable biomass (wood) used in the absence of the project activity in year y multiplied by net calorific value of non-renewable biomass multiplied by the emission factor for the projected fossil fuel consumption in the baseline.

Mistakes were found on the calculation spreadsheet, and CARs were raised. This has been corrected and properly taken care of. It has to be pointed out that none of these errors had an effect on the quantity of VCUs issued

#### 4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

IBOPE was able to verify that Gomes de Mattos Ceramic has adequate monitoring mechanisms where the required parameters have been monitored on a monthly basis. This was verified during the on-site visit when the plant records were verified to assess the correctness of the reported data.

The amount of renewable biomass employed was checked by accessing all the receipts and invoices of biomass received by the ceramic

The production of ceramic units per month was checked by accessing the internal control sheets used by Gomes de Mattos Ceramic, which are organized per month and daily filled according to data based on ceramic units burned in the kilns.

The Emission Reductions have been correctly calculated. A complete set of data for the specified monitoring period was available and verified while undertaking site visit plant records maintained at site. As no further uncertainties or quality restriction affect the calculations the verification team has reviewed the above-mentioned evidences and considered that calculations are in line with VCS v.3.4 requirements. Mistakes were found on the calculation spreadsheet, and CARs were raised. This has been corrected and properly taken care of. It has to be pointed out that none of these errors had an effect on the quantity of VCUs issued.

#### 4.4 Non-Permanence Risk Analysis

IBOPE conducted a risk analysis during the Contract Review phase, before finish the Verification process and considers the risk rating acceptable.

## 5 VERIFICATION CONCLUSION

The verification team of IBOPE has performed the 5<sup>th</sup> Verification for the Gomes de Mattos Cermiac Fuel Switching Project in Brazil on the basis of VCS Version 3.4 and UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

IBOPE concludes that during the period of January 1<sup>st</sup> 2013 and February 28<sup>th</sup> 2014 the above described project has fulfilled all the requirements to produce emissions reductions on the total of **67,409 tCO<sub>2</sub> eq.**

The project is implemented as planned and described in the registered VCS Project Design. The monitoring plan is in place and the project is generating GHG emission reductions. IBOPE concludes that the project is implemented and operated as planned and described in the registered VCS Project Design;

The monitoring system is in place and functional. The project has generated GHG emission reductions.

It is the opinion of IBOPE that this verification job to be considered as closed.

Verification period: From 1<sup>st</sup> –January -2013 to 28<sup>th</sup> -February-2014

Verified GHG emission reductions and removals in the above verification period:

| Year         | Baseline emissions or removals (tCO <sub>2</sub> e) | Project emissions or removals (tCO <sub>2</sub> e) | Leakage emissions (tCO <sub>2</sub> e) | Net GHG emission reductions or removals (tCO <sub>2</sub> e) |
|--------------|-----------------------------------------------------|----------------------------------------------------|----------------------------------------|--------------------------------------------------------------|
| 2013         | 57,586                                              | 0                                                  | 0                                      | 57,586                                                       |
| 2014         | 9,823                                               | 0                                                  | 0                                      | 9,823                                                        |
| <b>Total</b> | 67,409                                              | 0                                                  | 0                                      | 67,409                                                       |

## APPENDIX X: <TITLE OF APPENDIX>

**Table 1: Check list**

| VERIFICATION REQUIREMENT                                                                                                                                         | REFERENCE | IBOPE ASSESSMENT                                                       | CONCLUSION |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------|------------|
| <b>1. Physical Data</b>                                                                                                                                          |           |                                                                        |            |
| 1.1 Is the project activity in an existing facilities or utilizing existing equipment? Has the physical site inspection been carried out by the assessment team? | VVS       | Yes. The physical site inspection took place on march 13 and 14, 2014. | Ok         |
| 1.2 Does the description of the VCS project activity as contained in the VCS-PD sufficiently cover all relevant elements accurately?                             | VVS       | CAR 01                                                                 | Ok         |
| 1.3 Is all information provided consistent and in compliance with the actual situation or planning?                                                              | VVS       | Ok.                                                                    | Ok         |
| 1.4 Does the VCU's obtained for the monitoring period within the limit of estimate in the registered VCS PD? Is the claimed VCU's justifiable?                   | VVS       | CL 04                                                                  | Ok         |
| <b>2. Monitoring and Methodology</b>                                                                                                                             |           |                                                                        |            |

|                                                                                                                                                                                                                                                                                                                                                                                                |     |                            |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------|----|
| 2.1 Do the project participants possess ownership or licenses which will allow the implementation of the project at that site / those sites?                                                                                                                                                                                                                                                   | VVS | CAR 02                     | Ok |
| 2.2 Does the MR correctly describe the project boundary, including the physical delineation of the project activity included within the project boundary for the purpose of calculating project and baseline emissions for the VCS project activity?                                                                                                                                           | VVS | CAR 03<br>CAR 04<br>CAR 05 | Ok |
| 2.3 Does the monitoring plan comply with the requirement of the applied methodology?                                                                                                                                                                                                                                                                                                           | VVS | CAR 06<br>CL 04            | Ok |
| 2.4 Is the authority and responsibility of project management clearly described?                                                                                                                                                                                                                                                                                                               | VVS | Ok.                        | Ok |
| 2.5 In case the implemented monitoring plan defers from the monitoring methodology, has any requests for revision to or deviation from the monitoring methodology been officially communicated to the VCS Accreditation Body?<br><br>Reference:<br>< <a href="http://cdm.unfccc.int/EB/033/eb33rep.pdf">http://cdm.unfccc.int/EB/033/eb33rep.pdf</a> >, §84, §58, §193 of CDM Project Standard | VVS | N.A.                       | Ok |

|                                                                                                                                                                               |     |                |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------|----|
| 2.6 Was the monitoring equipment for baseline emission parameters controlled and monitoring results recorded as per approved frequency?                                       | VVS | Ok             | Ok |
| <b>3. Calculations</b>                                                                                                                                                        |     |                |    |
| 3.1 Are the steps taken and equations applied to calculate emission reductions comply with the requirements of the selected baseline and monitoring methodology?              | VVS | Ok             | Ok |
| 3.2 Are the equations and parameters in the VCS PD have been correctly applied as per those provided in the selected approved methodology?                                    | VVS | CL 01<br>CL 02 | Ok |
| 3.4 Are the steps and equations applied to calculate project emissions in compliance with the requirements of selected baseline and monitoring methodology?                   | VVS | Ok             | Ok |
| 3.5 Have all the calculations related to the leakage emissions been carried according to the formulae and methods described in the registered VCS PD and applied methodology? | VVS | CL 03          | Ok |
| <b>4. Parameters</b>                                                                                                                                                          |     |                |    |

|                                                                                                                                                 |     |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|----|
| 4.1 Are all values used in the VCS MR correct in the context of the VCS project activity;                                                       | VVS | Ok | Ok |
| 4.2 Are all emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions? | VVS | Ok | Ok |

Table 2: Non-conformities

|                      |                                                       |
|----------------------|-------------------------------------------------------|
| <b>ISSUANCE DATE</b> | <b>08/04/2014</b>                                     |
| <b>PROJECT TITLE</b> | <b>GOMES DE MATTOS CERAMIC FUEL SWITCHING PROJECT</b> |
| <b>AUDITOR</b>       | <b>Rafael Kupper B. Oliva</b>                         |
| <b>ROUND</b>         | <b>1st</b>                                            |

| ITEM                   | CAR 1                                                                                                                                                                                                                                                                                                                 |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>REFERENCE</b>       | 1.1 Summary Description of the Implementation Status of the Project                                                                                                                                                                                                                                                   |
| <b>CAR/CL</b>          | According to VCS Monitoring Report Template:<br><ul style="list-style-type: none"> <li>• A brief information about the equipment</li> <li>• The relevant implementation dates (e.g., dates of construction, commissioning, and continued operation periods) were not included.</li> </ul> Please correct accordingly. |
| <b>ROUND</b>           | 1st                                                                                                                                                                                                                                                                                                                   |
| <b>CLIENT ANSWER</b>   | A brief information about the equipment and the relevant implementation dates were included in the section 1.1 of the MR.                                                                                                                                                                                             |
| <b>REVISED SECTION</b> | 1.1 Summary Description of the Implementation Status of the Project                                                                                                                                                                                                                                                   |
| <b>CONCLUSION</b>      | Ok. CAR closed.                                                                                                                                                                                                                                                                                                       |

| ITEM                   | CAR 2                                                                                                                                                    |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>REFERENCE</b>       | 1.3 Project Proponent and 1.4 Other Entities Involved in the Project                                                                                     |
| <b>CAR/CL</b>          | According to VCS Monitoring Report Template:<br>Sustainable Carbon – Projetos Ambientais Ltda is not a Project Proponent.<br>Please correct accordingly. |
| <b>ROUND</b>           | 1st                                                                                                                                                      |
| <b>CLIENT ANSWER</b>   | Sustainable Carbon was added as a Project Proponent in section 1.3 of the MR.                                                                            |
| <b>REVISED SECTION</b> | 1.3 Project Proponent                                                                                                                                    |
| <b>CONCLUSION</b>      | Ok. CAR closed.                                                                                                                                          |

| ITEM            | CAR 3                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REFERENCE       | 3.1 Data and Parameters Available at Validation                                                                                                                                                                                                                                                                                                                                                                    |
| CAR/CL          | <p>According to VCS Monitoring Report Template, the "Purpose of Data" of the whole parameters should indicate one of the following:</p> <ul style="list-style-type: none"> <li>• Determination of baseline scenario (AFOLU projects only)</li> <li>• Calculation of baseline emissions</li> <li>• Calculation of project emissions</li> <li>• Calculation of leakage</li> </ul> <p>Please correct accordingly.</p> |
| ROUND           | 1st                                                                                                                                                                                                                                                                                                                                                                                                                |
| CLIENT ANSWER   | The Purpose of Data was made clear in the section 3.1 of the MR.                                                                                                                                                                                                                                                                                                                                                   |
| REVISED SECTION | 3.1 Data and Parameters Available at Validation                                                                                                                                                                                                                                                                                                                                                                    |
| CONCLUSION      | Ok. CAR closed.                                                                                                                                                                                                                                                                                                                                                                                                    |

| ITEM            | CL 1                                                                                                                                                                                                                                                                                   |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REFERENCE       | VCS MR Section 3.2 Data and Parameters Monitored                                                                                                                                                                                                                                       |
| CAR/CL          | <p>"VCS MR Calculation CGM_period 05_01 01 13_28 02 14_v.1.1" Sheet "Biomass Consumption":</p> <p>The values of the biomass consumption are provided in its total, and cannot be tracked. It is not possible to check if the processing of data is accurate.</p> <p>Please clarify</p> |
| ROUND           | 1st                                                                                                                                                                                                                                                                                    |
| CLIENT ANSWER   | The biomass values were filled with more details in the "Biomass Consumption" sheet of the "VCS MR Calculation CGM_period 05_01 01 13_28 02 14_v.2".                                                                                                                                   |
| REVISED SECTION | Calculation Spreadsheet: "VCS MR Calculation CGM_period 05_01 01 13_28 02 14_v.2"                                                                                                                                                                                                      |
| CONCLUSION      | Ok. CL closed.                                                                                                                                                                                                                                                                         |

| ITEM      | CL 2                                             |
|-----------|--------------------------------------------------|
| REFERENCE | VCS MR Section 3.2 Data and Parameters Monitored |

|                        |                                                                                                                                                                                                                                                                     |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CAR/CL</b>          | "VCS MR Calculation CGM_period 05_01 01 13_28 02 14_v.1.1" Sheet "5th period - VCUs Calculations":<br>The values of the PRy are provided in its total, and cannot be tracked. It is not possible to check if the processing of data is accurate.<br>Please clarify. |
| <b>ROUND</b>           | 1st                                                                                                                                                                                                                                                                 |
| <b>CLIENT ANSWER</b>   | The production values were filled with more details in the "5 <sup>th</sup> period – VCUs Calculations" sheet of the "VCS MR Calculation CGM_period 05_01 01 13_28 02 14_v.2".                                                                                      |
| <b>REVISED SECTION</b> | Calculation Spreadsheet: "VCS MR Calculation CGM_period 05_01 01 13_28 02 14_v.2"                                                                                                                                                                                   |
| <b>CONCLUSION</b>      | Ok. CL closed.                                                                                                                                                                                                                                                      |

| ITEM                   | CAR 4                                                                                                                                                                                                                                                                                                                            |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>REFERENCE</b>       | 3.2 Data and Parameters Available at Validation                                                                                                                                                                                                                                                                                  |
| <b>CAR/CL</b>          | According to VCS Monitoring Report Template, the "Purpose of Data" of the whole parameters should indicate one of the following: <ul style="list-style-type: none"> <li>• Calculation of baseline emissions</li> <li>• Calculation of project emissions</li> <li>• Calculation of leakage</li> </ul> Please correct accordingly. |
| <b>ROUND</b>           | 1st                                                                                                                                                                                                                                                                                                                              |
| <b>CLIENT ANSWER</b>   | The Purpose of Data was made clear in the section 3.2 of the MR.                                                                                                                                                                                                                                                                 |
| <b>REVISED SECTION</b> | 3.2 Data and Parameters Monitored                                                                                                                                                                                                                                                                                                |
| <b>CONCLUSION</b>      | Ok. CAR closed.                                                                                                                                                                                                                                                                                                                  |

| ITEM             | CAR 5                                                                                                                                                                                                                                                                                                                  |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>REFERENCE</b> | 3.3 Monitoring Plan                                                                                                                                                                                                                                                                                                    |
| <b>CAR/CL</b>    | According to VCS Monitoring Report Template, Section 3.3 should include details of the following: <ul style="list-style-type: none"> <li>• The methods used for generating/measuring, recording, storing, aggregating, collating and reporting the data on monitored parameters.</li> </ul> Please correct accordingly |

|                        |                                                                                                   |
|------------------------|---------------------------------------------------------------------------------------------------|
| <b>ROUND</b>           | 1st                                                                                               |
| <b>CLIENT ANSWER</b>   | The methods used for the monitored parameters were better explained in the section 3.3 of the MR. |
| <b>REVISED SECTION</b> | 3.3 Monitoring Plan                                                                               |
| <b>CONCLUSION</b>      | Ok. CAR closed.                                                                                   |

| ITEM                   | CAR 6                                                                                                                                                                                                                                                           |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>REFERENCE</b>       | 4.1 Baseline Emissions                                                                                                                                                                                                                                          |
| <b>CAR/CL</b>          | According to the VCS MR v1.1, the parameter By is calculated through option (a) of the AMS-I.E.: Switch from Non-Renewable Biomass for Thermal Applications by the User – Version 01. However, option (a) is not utilized properly. Please correct accordingly. |
| <b>ROUND</b>           | 1st                                                                                                                                                                                                                                                             |
| <b>CLIENT ANSWER</b>   | The option (b) was utilized to calculate the parameter By, therefore the correct option (b) was filled in the Section 4.1 of the MR.                                                                                                                            |
| <b>REVISED SECTION</b> | 4.1 Baseline Emissions                                                                                                                                                                                                                                          |
| <b>CONCLUSION</b>      | Ok. CAR closed.                                                                                                                                                                                                                                                 |

| ITEM                   | CL 3                                                                                                                                                                                                                                                                                                                                       |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>REFERENCE</b>       | 4.3 Leakage and VCS MR Calculation CGM_period 05_01 01 13_28 02 14_v.1.1                                                                                                                                                                                                                                                                   |
| <b>CAR/CL</b>          | The thermal energy generated per tonne of ceramic units produced at CGM Ceramic in the monitored period is more than 15% different from the estimation in to the VCS PD. Please clarify it..                                                                                                                                               |
| <b>ROUND</b>           | 1st                                                                                                                                                                                                                                                                                                                                        |
| <b>CLIENT ANSWER</b>   | During this monitored period, there was verified an increase in the thermal efficiency per tonnes of pieces produced, mainly due to the higher consumption of sawdust. The ceramic factory invested in some improvements to use this type of biomass, which increased the burning efficiency. This was explained in section 4.3 of the MR. |
| <b>REVISED SECTION</b> | 4.3 Leakage                                                                                                                                                                                                                                                                                                                                |
| <b>CONCLUSION</b>      | Ok. CL closed.                                                                                                                                                                                                                                                                                                                             |

| ITEM | CL 4 |
|------|------|
|------|------|

|                        |                                                                                                                                                               |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>REFERENCE</b>       | VCS MR 5 <sup>th</sup> period and VCS PD                                                                                                                      |
| <b>CAR/CL</b>          | There is a difference around 100% between the ERy (tCO <sub>2</sub> e) from the VCS PD and the VCS MR. Please clarify it.                                     |
| <b>ROUND</b>           | 1st                                                                                                                                                           |
| <b>CLIENT ANSWER</b>   | This difference was similar to the last MR due to an increase in the production due to market conditions. This was better explained in section 4.3 of the MR. |
| <b>REVISED SECTION</b> | 4.3 Leakage                                                                                                                                                   |
| <b>CONCLUSION</b>      | Ok. CL closed.                                                                                                                                                |