

VERIFICATION REPORT

KITAMBAR SWITCHING FUEL PROJECT

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Summary:

Bureau Veritas Certification has made the 3rd monitoring period verification of Kitambar switching fuel project, located in the State of Pernambuco, in Brazil, in the municipality of Caruaru.

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 project activity is the project of Kitambar Ceramic, which is a red ceramic company localized in Caruaru municipality, in the state of Pernambuco, northeast region of Brazil. The ceramic company produces bricks and roof tiles, destined mainly for the regional market in Pernambuco. The objective of the implementation of this project activity in the ceramic is to stop using the native wood, which is a non-renewable fuel, and completely substitute it with renewable biomasses to feed their kilns and fire their ceramic units, so that they can minimize environmental impacts related to the native wood deforestation and consumption.

The first output of the verification process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in the Verification Report (Section 7). Taking into account this output, the project proponent revised its Monitoring Report Document, version 03.0.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the Small Scale CDM Methodology "Switch from Non-Renewable Biomass for Thermal Applications by the User" – AMS I.E, version 1, and meets the relevant VCS version 3 requirements and local legislation.

During this verification, 07 Corrective Action Requests (CAR) and 03 Clarification Requests (CL) and 01 Forward Action Request (FAR) were raised and successfully closed¹.

As the result of the 3rd 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: 01-December-2009 to 29-February-2012

PERIOD	EMISSION REDUCTION (tCO ₂ e)
2009 (December)	3,801
2010 (January to December)	47,039

¹Except the FAR, which will be addressed during the next verification.

2011 (January to December)	47,025	
2012 (January to February)	8,020	
Total	105,885	

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1 INTRODUCTION

1.1 Objective

Sustainable Carbon Projetos Ambientais has commissioned Bureau Veritas Certification (BVC) to verify the emission reductions of its VCS Project “Kitambar Switching Fuel Project”.

This report summarizes the findings of the third periodic verification of the project, performed on the basis of VCS – Verified Carbon Standard version 3.4 criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

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 and review of calculations/data transfers.

The verification is based on criteria set by VCS – Verified Carbon Standard version 3.4

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the project description, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against VCS – Verified Carbon Standard version 3.4.

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 Level of assurance

During the verification process, the GHG team assessed the monitoring report, the calculation spreadsheets and supporting documents.

Based on this assessment, the verification team can express a reasonable level of assurance, stating that the GHG emission reductions:

- Are materially correct and are a fair representation of the GHG data, and

- Are prepared in accordance with the relevant International Standard on GHG quantification, monitoring and reporting, and with relevant national standards.

The verification report is based on VCS Monitoring Report (MR) version 03.0, of 15/01/2013, and other documents provided by the project proponent (PP), as well as, on information obtained from the on-site visit (on 31/08/2012). The verification opinion is assured by the credibility of all the statements above.

1.4 Summary Description of the Project

The project of Kitambar Ceramic is a red ceramic company localized in Caruaru municipality, in the state of Pernambuco, northeast region of Brazil. The ceramic company produces bricks and roof tiles, destined mainly for the regional market in Pernambuco.

According to the MR (version 03.0), the objective of the implementation of this project activity is to stop the use of native wood, which is a non-renewable fuel, and completely substitute it with renewable biomasses to feed their 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 reduces greenhouse gas (GHG) emissions through the substitution of native wood for renewable biomasses to generate thermal energy. In opposition to the identified baseline, the project activity generates thermal energy without stimulating deforestation and uses an abundant renewable biomass.

BVC was able to validate the project descriptions as described above and in the MR (version 03.0), by observations and interviews carried out during site visit (on 31/08/2012) and by analyzing the project's PD and Validation Report (available on VCS Project database online (<http://www.vcsprojectdatabase.org/>)).

The emission reductions due to the substitution of native wood for renewable biomasses to generate thermal energy by Kitambar Ceramic resulted in 105,885 tCO₂e, during this 3rd monitoring period, from 01-December-2009 to 29 February-2012. Please see Sections 3 and 4 below for a description on how BVC was able to validate and confirm this amount of emission reductions.

2 VALIDATION PROCESS, FINDINGS AND CONCLUSION

2.1 Validation Process

The validation process is described in the VCS Validation Report, which can be accessed on the VCS Project database online (<http://www.vcsprojectdatabase.org/>). Please refer to the PD and Validation Report included in the VCS Project database. Please see below for some details regarding the validation process:

- Method and Criteria:

According to the Validation Report (please see VCS Project database online), the validation scope is given as an independent and objective review of the project design, the project's baseline study and monitoring plan (based on AMS-I.E: Switch from non-renewable biomass for thermal applications by the user - version 01), which are included in the VCS PD and other relevant supporting documents. The items

covered in the validation are: Project Description, Project Baseline, Monitoring Plan, Calculation of GHG Emissions, Environmental Impacts and Stakeholder Consultation. For additional information, please refer to the VCS Project database online (<http://www.vcsprojectdatabase.org/>).

- Document Review:

According to the Validation Report, the VCS PD and proof of title submitted by Kitambar Ceramic, as well as any supporting documents were reviewed. Furthermore, the validation team used additional documentation by third parties, such as host party legislation and technical data based on the project's design. The validation report shows the documents considered during the validation process, such as: documents provided by the project proponent, background documents and websites consulted. For additional information, please refer to the VCS Project database online (<http://www.vcsprojectdatabase.org/>).

- Interviews:

According to the validation report, before and during the on-site visit on 15/10/2008, interviews were performed with project participants to confirm selected information and to resolve issues identified in the document review. Kitambar Ceramic's owners and Social Carbon's (now Sustainable Carbon Projetos Ambientais) consultants were interviewed. For additional information, please refer to the VCS Project database online (<http://www.vcsprojectdatabase.org/>).

Site Inspections:

According to the validation report, a site inspection was carried out during the validation process on 15/10/2008. For additional information, please refer to the VCS Project database online (<http://www.vcsprojectdatabase.org/>).

Resolution of Any Material Discrepancy:

The validation report includes Corrective action and Clarification Requests (CARs and CRs) identified in the course of the validation. A Corrective Action Request is established if: (1) mistakes have been made in assumptions or the project documentation which directly will influence the project results, (2) the requirements deemed relevant for validation of the project with certain characteristics have not been met or (3) there is a risk that the project would not be registered by the VCS or that emission reductions cannot be verified and certified. A Clarification Request is issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met. According to the validation report, after resolution of these CARs and CRs by the project proponent, the validator issued the final validation report and opinion. For additional information, please refer to the VCS Project database online (<http://www.vcsprojectdatabase.org/>).

2.2 Validation Findings

2.2.1 Gap Validation

Not applicable, this project activity does not comprise a Gap Validation.

2.2.2 Methodology Deviations

Not applicable, there is no methodology deviation. Please refer to the PD and validation report included in the VCS Project database(<http://www.vcsprojectdatabase.org/>).

2.2.3 Project Description Deviations

There are no project description deviations applicable to this project.

2.2.4 New Project Activity Instances

Not applicable.

2.3 Validation Conclusion

The validation conclusion is described in the VCS Validation Report, which can be accessed on the VCS Project database online (<http://www.vcsprojectdatabase.org/>). Please refer to the PD and Validation Report included in the VCS Project database. Please see below for details regarding the validation conclusion:

According to the validation report: The project is in line with all relevant host country criteria (Brazil) and all relevant VCS 2007 Standard criteria. The project additionality is sufficiently justified in the PD. The monitoring plan is transparent and adequate. The calculation of the project emission reductions is carried out in a transparent and conservative manner. The conclusions of the report show that the projects in line with all criteria applicable for the validation.

3 VERIFICATION PROCESS

3.1 Method and Criteria

The third verification comprises the period from 01-December-2009 to 29-February-2012. This verification report was prepared between 21-August-2012 and 26-December-2012. This period encompass the site visit preparation, site visit, preliminary report and final report.

The criteria of this verification include the relevant rules and steps as set out in the VCS version 3.4. The verification process includes:

- A desk review of the VCS PD and supporting documents with the use of the relevant sections of a customized protocol;
- A desk review of the Monitoring Report (MR) and additional supporting documents which the client submitted;
- On-Site assessment on 31/08/2012;
- Background investigation and follow-up interviews with personnel of the project developer;
- Verification reporting (Draft Verification Report and Final Verification Report).

3.2 Document Review

The document review was conducted based on a desk review of the Monitoring Report (MR), calculation spreadsheets and additional supporting documents submitted by the client. The relevant sections of the above-mentioned customized protocol were used (See Section 7 below). Also, the desk review of the VCS PD, supporting documents and CDM methodology AMS I.E (version 1) was carried out using the relevant sections of a customized protocol.

All the relevant information and evidences regarding project description and monitoring process were assessed and validated by the verification team during the site visit and documentation review. The reference documents are listed below:

- Final VCS Project Description (Version 02), dated December 17th 2008
- Validation Report, dated January 13th, 2009
- Monitoring Report – first monitoring period (version 03), dated January 14th, 2008
- 1st periodic verification report, dated January 16th, 2009
- Monitoring Report – second monitoring period (version 05), dated January 14th, 2011
- 2nd periodic verification report, dated January 14th, 2011
- Monitoring Report – third monitoring period (version 03.0), dated January 15th, 2013
- VCS MR Calculation Kitambar_period_03_01 12 09_29 02 12_v03.0
- Ceramic's environmental production license 03.1.07.004365-2, dated July 20th2009, valid for one year
- Ceramic's environmental production license 03.10.07.028420-1, dated July 21st, 2010, valid for one year
- Ceramic's environmental production license 05.12.07.002933-6, dated July 20th, 2012, valid for one year
- Environmental clay extraction DNPM License (Fazenda Genipapo) 307/2002, dated July 23rd, 2002, valid for 20 years
- Environmental clay extraction DNPM License (Sítio Barro Forte) 675/2011, valid until October 21st, 2012
- Renewable biomasses receipts, covering the entire 3rd monitoring period
- Production documents (internal control sheet monitored by the project proponent), covering the entire 3rd monitoring period

The evidences have been assessed and considered as of sufficient quantity and appropriate quality by BVC, since original documents have been presented, they cover the entire monitored period and address all relevant issues pertaining to the registered monitoring plan.

3.3 Interviews

On 31/08/2012, a site visit was made, when Bureau Veritas Certification performed interviews with the project proponents to confirm selected information and to resolve issues identified in the document review. Representatives of Sustainable Carbon Projetos Ambientais Ltda. (Project Proponent) and of Kitambar Ceramic (Project Proponent) were interviewed.

The interviewees were:

Mr. Antônio Marcos Tavares Barbosa, Director and owner;
Mr. Severino Francisco Torres, Quality Controller, monitoring data responsible;
Mr. José Trajano Filho- Operator
Mr. José Nilton – Manager
Mr. José Everaldo da Silva Araújo - Supervisor
Ms. Camila Vaccari – Technical Analyst
Mr. Felipe Sanchez A. Silva – Technical Analyst

The main topics of the interviews were:

- Project Design and implementation;
- Technical Equipment and operation;
- Equipment calibration;
- Monitoring Plan;
- Monitored data;
- Data uncertainty and residual risks;
- GHG Calculation;
- Environmental Impacts;
- Compliance with National Laws and regulations;
- Environmental Licenses.

3.4 Site Inspections

On-site assessment was conducted on 31/08/2012, in order to crosscheck all the relevant information and data provided by the Project Proponents, against to the physical documentation and registers, as well as to assess the project description, as per the MR and PD, to that observed in the field.

3.5 Resolution of Any Material Discrepancy

During the verification process some corrective action requests (CAR) and clarification requests (CL) identified by the verifier were raised in the verification protocol and submitted to the PP to be addressed before the conclusion of the verification process.

The resolution of CARs and CLs were carried out by the PP through adjustments in the project documentation, especially in the MR and calculation spreadsheet. In some cases, these adjustments were supported by evidences, additional documentation or technical explanation. No FARs (Forward Action Requests) were raised during the last verification process.

The objective of this phase of the verification is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction calculation.

Findings established during the initial verification can either be seen as a non-fulfillment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CAR) is issued, where:

- (a) Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- (b) Mistakes have been made in applying assumptions, data or calculations of emission reductions, which would impair the estimate of emission reductions.

The Clarification Request (CL) is used if information is insufficient or not clear enough to determine

whether the applicable VCS version 3 requirements have been met.

During this verification, 07 Corrective Action Requests (CAR) and 03 Clarification Requests (CL) and 01 Forward Action Request (FAR) were raised and successfully closed².

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol found in the Section 7, below.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

There are no pending CARs or CLs 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 all closed.

The project has a 10-year crediting period, twice renewable. The first 10-year crediting period is from January 01st, 2007 to December 31st, 2016. The total Emission Reductions forecasted for that period are 417,800 tCO₂e, according to the VCS PD. Still according to the VCS PD, the Project's start date is December 01st, 2006 and the start date of the first crediting period is January 1st, 2007.

The following verifications have already been made:

- First periodic verification: from January 1st, 2007 to September 30th, 2008. Emission reductions of 73,749 tCO₂e;
- Second periodic verification: from October 1st 2008 to November 30th 2009. Emission reductions of 47,191 tCO₂e;

During the site visit, the VVB could confirm that the project activity is implemented as described in the registered VCS PD, however minor operational modification occurred as the installation of a new mixer and a new molding machine combined with a high-performance motor, which were responsible for an increase of 10-15% in the ceramic productivity. This gain in efficiency is due to the molding stage, and it does not influence the kilns' efficiency and its consumption of renewable biomass

None of the changes described above have significant effects on the project monitoring or on its capacity to mitigate emission reductions.

The parameters required by the monitoring plan and the way the Verification Team has verified the values in the Monitoring Report Version 03.0 are described below:

Data Reported in Monitoring:

²Except the FAR, which will be addressed during the next verification.

Data Unit / Parameter:	$Q_{renbiomass}$										
Data unit:	Tonnes										
Description:	Amount of renewable biomasses										
Source of data:	Measured by the biomass providers and controlled by the ceramic owner. The registered VCS PD v.02 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.										
Description of measurement methods and procedures to be applied:	The amount of biomass was monitored in accordance to the weight or volume described in the receipts from the providers. The values in the receipts may be described in m³, therefore it is necessary the conversion to tonnes through the specific gravity of each biomass. The specific gravity values of the renewable biomasses utilized in this project is: <table border="1"> <thead> <tr> <th>Biomass</th><th>Specific gravity (tonne/m³)</th></tr> </thead> <tbody> <tr> <td>Algaroba Wood</td><td>0.836</td></tr> <tr> <td>Cashew tree residues</td><td>0.42</td></tr> <tr> <td>Forest Residues</td><td>0.35</td></tr> <tr> <td>Coconut Husk</td><td>0.5</td></tr> </tbody> </table> Source of data: -Algaroba wood: 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 visiton: 01/05/2012. -Cashew tree residues: 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. - Forest residues :	Biomass	Specific gravity (tonne/m ³)	Algaroba Wood	0.836	Cashew tree residues	0.42	Forest Residues	0.35	Coconut Husk	0.5
Biomass	Specific gravity (tonne/m ³)										
Algaroba Wood	0.836										
Cashew tree residues	0.42										
Forest Residues	0.35										
Coconut Husk	0.5										

	PINHEIRO, G. F.; RENDEIRO, G.; PINHO J. T. Densidade Energética de Resíduos Vegetais. 2006. Available at: <www.ufpa.br/gedae/BIOMASSAEENERGIA2006.pdf>. Last visit on: 01/05/2012. - Coconut Husk: PINHEIRO, G. F.; RENDEIRO, G.; PINHO J. T. Densidade Energética de Resíduos Vegetais. 2006. Available at: <www.ufpa.br/gedae/BIOMASSAEENERGIA2006.pdf>. Last visit on: 30/11/2012.										
Frequency of monitoring/recording:	Monthly										
Value monitored:	Total amount of biomasses consumed during all months of the monitoring period (in tonnes): <table border="1"> <thead> <tr> <th>Biomass</th><th>Amount of biomass consumed</th></tr> </thead> <tbody> <tr> <td><i>Algaroba</i> Wood</td><td>26,076.56</td></tr> <tr> <td>Cashew Tree Residues</td><td>4,317.26</td></tr> <tr> <td>Forest Residues</td><td>2,018.06</td></tr> <tr> <td>Coconut Husk</td><td>1,328.50</td></tr> </tbody> </table> More detailed information is available in Section 5.	Biomass	Amount of biomass consumed	<i>Algaroba</i> Wood	26,076.56	Cashew Tree Residues	4,317.26	Forest Residues	2,018.06	Coconut Husk	1,328.50
Biomass	Amount of biomass consumed										
<i>Algaroba</i> Wood	26,076.56										
Cashew Tree Residues	4,317.26										
Forest Residues	2,018.06										
Coconut Husk	1,328.50										
Monitoring equipment:	No monitoring equipment is used to determine this parameter										
QA/QC procedures to be applied:	Amount of biomass was checked according to receipts of purchase. The energy balance was verified according to the amount of biomass applied. The thermal energy generated with the use of <i>Algaroba</i> wood, cashew tree residues, forest residues (sawdust and MDF) and coconut husk per thousands of ceramic devices produced during the current monitoring period was compared to the VCS PD. The thermal energy generated per thousand of ceramic units produced at <i>Kitambar</i> Ceramic on the monitored period was similar to the estimated in the VCS PD. Differences are likely caused by energy efficiency gains.										
Calculation method:	The energy generated by the amount of renewable biomass during the current monitoring period was calculated based on the Net Calorific Value of each biomass, as can be seen on the VCS MR Calculation spreadsheet.										
Any comment:	As stated in the VCS PD, the providers listed in the PDD are only a few of those that work for the ceramic; nevertheless, it does not exclude the										

	possibility of buying biomass from others. 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.
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Data Unit / Parameter:	PR _y											
Data unit:	Unity of ceramic pices											
Description:	Production of ceramic devices											
Source of data:	Controlled by the project developer											
Description of measurement methods and procedures to be applied:	This parameter is monitored by the project developer (the ceramic owner). The amount was acquired by counting the total production of the period considered. Values used for the calculations are taken from production control documents. Data is aggregated on a monthly and yearly basis. Measurements are done by an internal control sheet monitored by the project proponent.											
Frequency of monitoring/recording:	Monthly											
Value monitored:		<table><tr><th colspan="2">Period</th><th>Production of ceramic units (PR_y)</th></tr><tr><td rowspan="3">2009</td><td>December</td><td>1,140,750</td></tr><tr><td>Total 2009</td><td>1,140,750</td></tr></table>		Period		Production of ceramic units (PR _y)	2009	December	1,140,750	Total 2009	1,140,750	
Period		Production of ceramic units (PR _y)										
2009	December	1,140,750										
	Total 2009	1,140,750										
	2010	January	1,171,660									
February		1,013,120										
March		1,126,640										
April		1,173,560										
May		1,189,900										
June		1,196,000										
July		1,179,270										
August		1,350,670										
September		1,188,050										
October		1,157,204										
November		1,079,133										
December		1,290,490										
Total 2010		14,115,697										
2011	January	1,152,680										

			February	1,199,930	
			March	1,159,950	
			April	1,056,940	
			May	1,186,040	
			June	1,128,360	
			July	1,155,500	
			August	1,474,400	
			September	1,292,300	
			October	1,032,150	
			November	1,193,450	
			December	1,079,560	
			Total 2011	14,111,260	
		2012	January	1,162,920	
			February	1,243,770	
			Total 2012	2,406,690	
Monitoring equipment:	No monitoring equipment is used to determine this parameter. Production is counted by trained personnel on <i>Kitambar</i> ceramic.				
QA/QC procedures to be applied:	Data concerning PR_y measurement points are from an internal control documents used by <i>Kitambar</i> Ceramic. These documents are organized per month and daily filled according to data based on ceramic units burned in the kilns.				
Calculation method:	The ceramic industry has an internal control of the quantity of ceramic units produced. It was rechecked according to the biomass employed in the ceramic kilns.				
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 Unit / Parameter:	Origin of renewable biomass
Data unit:	Not applicable
Description:	Renewable origin of the biomass
Source of data:	Controlled by the project developer
Description of measurement methods and procedures to be	This information was given by the biomasses providers. The biomasses (<i>Algaroba</i> wood, coconut husk, forest residues and cashew tree residues) are considered renewable as fulfilling the

applied:	options described in the methodology applied.
Frequency of monitoring/recording:	Annually
Value monitored:	Not applicable.
Monitoring equipment:	No monitoring equipment was used to determine this parameter.
QA/QC procedures to be applied:	The biomasses were considered renewable as they were in accordance with the definition given by the Annex 18, EB 23 of UNFCCC definition ³ .
Calculation method:	Not applicable
Any comment:	All the renewable biomasses utilized in the monitoring period were already described in the VCS PD and are in accordance with definitions of renewable biomass set in the applied methodology. 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 Unit / Parameter:	Renewable biomass surplus
Data unit:	tonnes or m ³
Description:	Amount of renewable biomass available
Source of data:	Monitored
Description of measurement methods and procedures to be applied:	It was used to calculate the leakage of renewable biomass. 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. The bibliographic references are described on the section 4.3 “Leakage”.
Frequency of monitoring/recording:	Annually
Value monitored:	

³CDM – Executive Board. Annex 18 definition of renewable biomass. EB 23. Available at: <http://cdm.unfccc.int/EB/023/eb23_repan18.pdf>. Last visited on January 17th, 2012.

	<table><tr><th>Biomass surplus</th><th>Surplus</th><th>Year</th></tr><tr><td>Algaroba wood in m³</td><td>2,500,000</td><td>2007</td></tr><tr><td>Cashew tree residues in tonnes</td><td>196,625</td><td>2007</td></tr><tr><td>Coconut husk in tonnes</td><td>6,700,000</td><td>2007</td></tr><tr><td>Forest Residues</td><td>319,891.88</td><td>2007</td></tr></table>	Biomass surplus	Surplus	Year	Algaroba wood in m³	2,500,000	2007	Cashew tree residues in tonnes	196,625	2007	Coconut husk in tonnes	6,700,000	2007	Forest Residues	319,891.88	2007
Biomass surplus	Surplus	Year														
Algaroba wood in m³	2,500,000	2007														
Cashew tree residues in tonnes	196,625	2007														
Coconut husk in tonnes	6,700,000	2007														
Forest Residues	319,891.88	2007														
	Detailed information in Section 4.3.: “Leakage”.															
Monitoring equipment:	No monitoring equipment is used to determine this parameter.															
QA/QC procedures to be applied:	Data available regarding the ceramic industries fuel consumption was employed to monitor the leakage															
Calculation method:	The amount of biomass used by the project activity in each year of the crediting period is compared to total biomass available, as estimated on the VCS PD.															
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 Unit / Parameter:	Leakage of non-renewable biomass
Data unit:	tCO ₂ e
Description:	Leakage resulted from the non-renewable biomass
Source of data:	Monitored
Description of measurement methods and procedures to be applied:	The three sources of leakages predicted in the applied methodology 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). Please see Section 4.3: “Leakage”.
Frequency of monitoring/recording:	Annually
Value monitored:	0
Monitoring equipment:	No monitoring equipment is used to determine this parameter.
QA/QC procedures to be applied:	Data available regarding the ceramic industries fuel consumption were utilized to monitor the leakage.
Calculation method:	Not applicable.
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.
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Data Unit / Parameter:	$f_{NRB,y}$
Data unit:	Percentage
Description:	Fraction of biomass (wood) used in the absence of the project activity in year y that can be established as non-renewable biomass using survey methods
Source of data:	Survey methods
Description of measurement methods and procedures to be applied:	Before the project activity, wood from areas without forest management was offered with low prices and high viability to the ceramics owner. Thus, the totality of fuel employed in the baseline scenario is from non-renewable origin. According to International Tropical Timber Organization (ITTO, 2011), article "Brazil Profile". Available at: http://www.itto.int/sfm/. Last visited on 10/05/2012, the area of <i>Caatinga</i> with sustainable use corresponds to 295,000 ha. Besides that, according to IBGE, the approximate area of <i>Caatinga</i> biome is 844,453 km², which means 84,445,300 ha. Therefore, the % of wood with sustainable use in <i>Caatinga</i> Biome is 0,35%. 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 the amount of wood consumed regarding only <i>Kitambar</i> Ceramic. 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>Kitambar</i> project, respectively⁴. Afterwards, summing each value with the sustainable use areas defined by ITTO (2011), it was acquired two fraction of renewable biomass. Finally, each value was subtracted from 100% to achieve the $f_{NRB,y}$. Therefore, it was taken the smaller value in order to be more conservative. These sheets are available at the VCU Estimates spreadsheet.

⁴ According to data from projectactivitieselaborated by SustainableCarbon – ProjetosAmbientais LTDA.

Frequency of monitoring/recording:	Annually
Value monitored:	99.4%
Monitoring equipment:	No monitoring equipment is used to determine this parameter.
QA/QC procedures to be applied:	The monitoring of this parameter was based in national and international articles and database every monitoring period. The sources provided information about the sustainable use of <i>Caatinga</i> biome. Wood saved from projects developed by <i>Sustainable Carbon</i> in the same biome and that have applied the same methodology was considered in this fraction⁵. CDM or VCS registered projects were also included in this fraction if placed in the same region and using the same methodology. Moreover the amount of non-renewable biomass applied in the project activity were monitored monthly and were considered in the value of $f_{NRB,y}$ parameter.
Calculation method:	Not applicable.
Any comment:	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.

BVC crosschecked all the (online) references mentioned in the tables above and in the MR (version 02.0). All information was confirmed. BVC also crosschecked all the information above, available on the Monitoring Report version 02.0, with the following documents:

- Monitoring Report – third monitoring period (version 03.0), dated January 15th, 2013
- VCS MR Calculations – Kitambar_period_03_01 12 09_29 02 12_v03.0.xls
- Ceramic's environmental production license 03.1.07.004365-2, dated July 20th 2009, valid for one year
- Ceramic's environmental production license 03.10.07.028420-1, dated July 21st, 2010, valid for one year
- Ceramic's environmental production license 05.12.07.002933-6, dated July 20th, 2012, valid for one year
- Environmental clay extraction DNPM License (Fazenda Genipapo) 307/2002, dated July 23rd, 2002, valid for 20 years
- Environmental clay extraction DNPM License (Sítio Barro Forte) 675/2011, valid until October 21st, 2012
- Renewable biomasses receipts, covering the 3rd monitoring period
- Production documents, covering the 3rd monitoring period

⁵ Document available at: <<http://mc.markit.com/br-reg/public/index.jsp?s=cp>> Last visiton: 05/06/2012.

The monitoring of the project activity is implemented in conformity with the Monitoring Plan described in the VCS PD version 02. Therefore, BVC can confirm that the monitoring plan was followed properly.

No remaining issues from previous validation/verifications were identified.

4.2 Accuracy of GHG Emission Reduction or Removal Calculations

Baseline Emissions:

According to the Monitoring Report (MR) version 03.0, baseline emissions are estimated following procedures of the applied CDM methodology: AMS-I.E (version 01). The project activity in this monitoring period (27 months) generated 119.49 TJ per year. Converting this number to MWh, the project generated 33,191.73 MWh per year, which corresponds to the use of 3.79 MWthermal on average of the kilns capacity during the monitored period, which is less than the limits of 45 MWthermal for Type I Small scale project activities. According to the MR, baseline emissions are calculated as follows:

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

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/TJ⁶.

B_y is determined using the option:

$$\text{Calculated from the thermal energy generated in the project activity as: } B_y = PR_y \times BF_y \quad B_y = \frac{HG_{p,y}}{\eta_{old} \times NCV_{biomass}} \quad (\text{Equation 02})$$

Where:

$HG_{p,y}$: Quantity of thermal energy generated by the renewable energy in the project in year y in TJ.
 η_{old} : Efficiency of the system being replaced

$$HG_{p,y} = SGE \times PR_y \quad (\text{Equation 03})$$

Where:

SGE : Specific energy which has to be generated in the process to produce a certain amount of ceramic devices in TJ/thousand of ceramic device.
 PR_y : Amount of product produced in year y in thousand of ceramic devices

$$\eta_{old} = \frac{SGE}{SFE} \quad (\text{Equation 04})$$

⁶ The fossil fuel likely to be used by similar consumers is taken the IPCC default value of residual fossil fuel.

Where:

SFE: Specific fuel energy needed for the process to produce a certain amount of ceramic devices in TJ/ thousand of ceramic device

$$\text{SFE} = \text{BF}_y \times \text{NCV}_{\text{biomass}} \quad (\text{Equation 05})$$

Where:

BF_y: Amount of native firewood needed to produce a certain amount of product in tonnes/thousand of ceramic devices

Using the Equations 3, 4 and 5 in the Equation 1, it results to:

$$\text{B}_y = \text{PR}_y \times \text{BF}_y \quad (\text{Equation 06})$$

As shown in the calculations above, the η_{old} and the NCV biomass are not required to calculate the Emission Reductions, thus they were excluded.

The exact production (PR_y) was monitored by the project proponent based on data from ceramic units burned in the kilns. Data is aggregated on a monthly and yearly basis. Measurements are done by an internal control sheet monitored by the project proponent.

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 of pieces.

Baseline emissions during the monitored period are summarized in the following table:

Table 1. Baseline emissions for *Kitambar* ceramic.

Year	Month	Baseline emissions(tCO ₂ e)
2009	December	3,801
	Total 2009	3,801
2010	January	3,904
	February	3,376
	March	3,754
	April	3,911
	May	3,965
	June	3,986
	July	3,930
	August	4,501
	September	3,959
	October	3,856
	November	3,596
	December	4,301
	Total 2010	47,039
2011	January	3,841
	February	3,999

	March	3,865
	April	3,522
	May	3,952
	June	3,760
	July	3,851
	August	4,913
	September	4,307
	October	3,440
	November	3,977
	December	3,598
	Total 2011	47,025
2012	January	3,875
	February	4,145
	Total 2012	8,020
Total in the monitoring period		105,885

Project Emissions:

According to the MR (version 03.0), the applied methodology does not include any source of project emissions. This is in accordance with the applicable methodology (CDM-AMS I.E version 1), as well as with the registered PD.

Leakage:

According to the MR (version 03.0), leakage is estimated as 0 (zero) tCO₂e during the entire monitoring period.

The Category AMS-I.E predicts the following possible three sources of leakage:

A) If the project activity includes substitution of non-renewable biomass by renewable biomass, leakage in the production of renewable biomass must be considered.

The leakage from biomass projects, like this project activity, should also be estimated according to the “General guidance on leakage in biomass project activities” (attachment C of appendix B) of Indicative Simplified Baseline and Monitoring Methodologies for Selected Small-Scale CDM Project Activity Categories, which identifies different emission sources based on the type of biomass considered. Please refer to Table 2 in the Section 4.3 of the MR version 03.0 (Sources of leakage according to the type of the biomass).

Still according to the MR (version 03.0), the possible sources of leakage of the present project activity is the competing use of (1) Algaroba wood, (2) cashew tree residues, (3) forest residues (sawdust and MDF) and (4) coconut husk. According to the MR (version 03.0), all these biomasses have enough availability, confirming the non-existence of leakage for each biomass type. Please refer to Section 4.3 of the MR (version 03.0), where PP describes the abundance of these types of biomass in the project area, demonstrating that non-existence leakage in the production of renewable biomass.

(B) Leakage relating to the non-renewable biomass shall be assessed from ex-post surveys of users and areas from where biomass is sourced.

According to the MR (version 03.0), three types of leaked were identified, which relate to type (B) leakage. Please refer to item (B) of Section 4.3 of the MR (version 03.0). According to the PP, the project will contribute to reduce the use of non-renewable biomass, especially due to the incentive of carbon credits. Therefore, it can be concluded that this source of leakage (type B), until the date of this monitoring report, is not considered for this project activity. This leakage was monitored in order to guarantee the project conservativeness.

(C) If the equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered.

According to the MR (version 03.0), this type of leakage is not applicable for this project activity as there was no transference of equipment, since new equipments had to be acquired.

BVC was able to validate PP's explanation regarding the non-existence of leakage in this 3rd monitoring period by: observations during site visit (31/08/2012), interviews carried out during site visit, crosschecking (online) references provided by PP in the MR (version 03.0) and by analyzing documents of the first and second verification procedure and validation, online available at <http://www.vcsprojectdatabase.org/>.

4.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

The evidences used to determine GHG emission reductions were:

- Monitoring Report – third monitoring period (version 03.0), dated January 15th, 2013
- VCS MR Calculations – Kitambar_period_03_01 12 09_29 02 12_v03.0.xls
- Ceramic's environmental production license 03.1.07.004365-2, dated July 20th2009, valid for one year
- Ceramic's environmental production license 03.10.07.028420-1, dated July 21st, 2010, valid for one year
- Ceramic's environmental production license 05.12.07.002933-6, dated July 20th, 2012, valid for one year
- Environmental clay extraction DNPM License (Fazenda Genipapo) 307/2002, dated July 23rd, 2002, valid for 20 years
- Environmental clay extraction DNPM License (Sítio Barro Forte) 675/2011, valid until October 21st, 2012
- Renewable biomasses receipts, covering the entire 3rd monitoring period
- Production documents (internal control sheet monitored by the project proponent), covering the entire 3rd monitoring period.

All Renewable biomasses receipts (100%) were crosschecked by the verification team. No discrepancies were found between receipts and version 03.0 of the MR and calculation spreadsheet version 02.0. Seeing this, the verification team confirms that the evidences used to determine GHG Emission Reductions are reliable, sufficient and appropriate for the determination of GHG emission reductions.

4.4 Management and Operational System

According to Section 3.3 of the MR (version 03.0), the monitoring is done with the aim of determining the most approximate quantity of non-renewable wood that, in the absence of the project, would be used in the ceramics' kilns and consequently the amount of GHG that would be emitted in tonnes of CO₂e.

Ceramic personnel are responsible to monitor the operating conditions on the factory, including the amount of renewable biomass consumed and the monthly production of ceramic devices (parameters $Q_{\text{renbiomass}}$ and PR_y). Ceramic personnel are also responsible to store invoices, receipts of sales and other documents related to purchase or acquisition of biomass.

Based on this information, Sustainable Carbon is responsible to assess if the biomasses are from renewable origin, to evaluate if there is a surplus of renewable biomass and to calculate emission reductions, including an assessment of leakage emissions and the determination of parameter $f_{\text{NRB},y}$. Sustainable Carbon also assists the Ceramic personnel to double check the monitored data on biomass consumption and ceramic devices production. No internal auditing was performed on data related to this monitoring period. Non-conformities identified in the double check procedures are clarified between

Sustainable Carbon technical team and the monitoring responsible on the ceramic during site visits for data collection, by reassessing existing documents and sources of information.

The responsible for the monitoring plan are Mr. Severino Francisco Torres and Mr. Antonio Marcos Tavares Rocha from Kitambar Ceramic. Sustainable Carbon technical team (including those members described on Section 1.3 of the MR) was also involved in the project monitoring.

The responsibilities and authorities for monitoring and reporting have been found to be in accordance with the monitoring plan, included in the registered PD.

5 VERIFICATION CONCLUSION

Sustainable Carbon Projetos Ambientais has commissioned Bureau Veritas Certification to carry out the 3rd periodic verification of the Kitambar Switching Fuel Project with regard to the relevant requirements for VCS project activities. The objective of the implementation of this project activity in the ceramic is to stop the use of native wood, which is a non-renewable fuel, and completely substitute it with renewable biomasses to feed their kilns and fire their ceramic units, so that they can minimize environmental impacts related to the native wood deforestation and consumption.

In the course of the verification, Corrective Action Requests (CAR) and Clarification Requests (CL) were raised and successfully closed. The verification conclusion is based on the Monitoring Report (version 03.0, dated 15-01-2013), the VCS PD (version 2, dated 17/12/2008), Emission Reduction Calculation spreadsheet version 03.0 and supporting documents made available to Bureau Veritas Certification by the project participant.

As a result of this verification, BVC confirms that:

- The project is implemented as planned and described in the Project Description. The monitoring plan is in place and the project is generating GHG emission reductions. BVC concludes that all operations of the project are implemented and installed as planned and described as in the validated project description;
- The Project conforms with the verification criteria for projects and their GHG emission reductions or removals set out in the VCS rules
- The monitoring plan is in accordance with the applied approved CDM methodology, i.e., AMS I.E (version 1);
- The monitoring system is in place and functional. The project has generated GHG emission reductions.

Bureau Veritas Certification confirms that Monitoring Report version 03.0 and Emission Reduction Calculation spreadsheet, version 03.0 are in accordance with the registered monitoring plan and all the calculations were based in reliable monitored data. In the case of non-monitored and pre-defined parameters, PP has correctly followed the parameters stated in the validated VCS PD, version 2, dated 17/12/2008.

BVC also confirms that all the data and information used to elaborate this Verification Report are treated confidentially by Bureau Veritas Certification.

Reporting period from 01-December-2009 to 29-February-2012.

Verified GHG emission reductions or removals in the above reporting period:

GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions 2009	3,801
Baseline Emissions 2010	47,039
Baseline Emissions 2011	47,025
Baseline Emissions 2012	8,020
Baseline Emissions (total)	105,885
Project Emissions (total)	0
Leakage (total)	0
Net GHG emission reductions or removals (2009)	3,801
Net GHG emission reductions or removals (2010)	47,039
Net GHG emission reductions or removals (2011)	47,025
Net GHG emission reductions or removals (2012)	8,020
Net GHG emission reductions or removals (total)	105,885

6 VERIFIERS' CVS

Bureau Veritas Certification GHG Lead Verifier (team leader)

Mr. Marco Francisco Prauchner—He is graduated in Mechanical Engineering with experience in Quality and Environmental management in mechanical, plastic and chemical industries. He is ISO 9001:2000 and ISO 14001:2004 Lead Auditor and has also experience in the implementation of Environmental Management Systems. Marco is qualified as Lead Verifier and Internal technical reviewer to the GHG – Green House Gases.

Bureau Veritas Certification GHG Verifier (team member)

Ms. Maria Cláudia Martinelli Trabulsi- She is graduated in Forest Engineering and has graduated as master in Energy in Agriculture. She has experience in GHG Inventories and Clean development mechanism projects.

Bureau Veritas Certification GHG Verifier (team member)

Guilherme Borba Lefèvre – He is graduated in Law with experience in GHG Programs, both compulsory and voluntary. Guilherme has vast experience in the development and analysis of CDM, VCS, Social Carbon and CCBS projects. He has an MSc in Environmental Science - São Paulo University. Guilherme trained as a lead auditor in the fields of environment (ISO 14001) and GHG – Green House Gas.

Bureau Veritas Certification Internal Technical Reviewer (ITR)

Diego Machado Serrano - He is a forest engineer graduated by the ESALQ / USP Superior School of Agriculture "Luiz de Queiroz." University of São Paulo, Diego has master degree in Energetic System Planning with forest residues in the State University of Campinas (UNICAMP). His abilities include coordination and elaboration of PDD's in the scopes 1, 4, 13 and 14. Diego is trained as a lead auditor in the fields of environment (ISO 14001) and GHG – Green House Gas.

7 VCS Verification protocol

Table 1 Verification requirements based on the Voluntary Carbon Standard version 3

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
<i>Project implementation in accordance with the registered project document</i>			
Are all physical features of the proposed VCS project proposed in the registered PD in place?	Yes, they are in place.		OK
Have the project participants operated the proposed VCS project as per the registered PD?	Yes, the project operated the proposed VCS project as per the registered PDD. The biomasses consumed during this Monitoring Period was: - Algaroba Wood, - cashew tree residue, - Sawdust (wood residue)		OK
Was an on-site visit conducted?	Yes, an on-site visit is conducted on August 31 st , 2012.		OK
If not, justify the rationale of the decision.	N.A.		OK
Does the implementation or operation of VCS project conform with the description contained in the registered PD?	Yes.		OK
If not, which are the potential impacts due to these changes?	No.		OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
<i>Compliance of the monitoring plan with the monitoring methodology</i>			
Is the validated monitoring plan in accordance with the approved methodology applied by the proposed VCS project?	Yes.		OK
Are there any monitoring aspects of the project that are not specified in the methodology (e.g. additional monitoring parameters, monitoring frequency and calibration frequency)?	No.		OK
<i>Compliance of monitoring with the monitoring plan</i>			
Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	CAR 01: The spreadsheet calculations considered that one sawdust bag has 20kg. This is not representative of the bag weights, seen that the VVB weighted 5 random bags from the production, and the result is: 17.50 ; 21.73; 14.86; 23.64 and 31.66 kg. It is not in accordance with the PDD (0.35 CAR 02: The algarroba receipt, dated 24/12/2009, from “Leodório Pereira da Silva” wrongly informs as result from 5 deliveries (with 55.50; 55.60; 55.30; 55.40 and 55.50m3) the quantity of 76.60m3. CAR 03: In august 2010, it is double counted in the spreadsheet the receipt from “Leodório Pereira da Silva” (332.5 m3).	CAR 01 CAR 02 CAR 03 CAR 04 CAR 05 CAR 06 CAR 07	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
	CAR 04: The spreadsheet considered the biomass deliveries from “Marcio Luidson Pereira da Silva”, however, this is considered in the receipts from “Leodório Pereira da Silva”. (It occurred double counting). CAR 05: The cashew tree residues is double counted to providers “Erivonaldo Alves” and “João Aureliano Léo Filho” CAR 06: There is a cashew tree provider, “José Josafá Cabral” (11 receipts) not identified in the calculation spreadsheet. CAR 07: The MR, in the monitoring of the parameter Qrenbiomass, informed the density of “wood from sustainable management plan areas”. This biomass is not in the PD.		
Have all parameters stated in the monitoring plan, the applied methodology been sufficiently monitored and updated as applicable, including:	Yes.		OK
Project emission parameters?	The methodology don’t predict project emissions.		OK
Baseline emission parameters?	Please refer to CAR 01 to 07.		OK
Leakage parameters?	Yes.		OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
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?	Yes.		OK
Are equipment controlled and calibrated in accordance with the monitoring plan?	Please refer to CAR 01.		OK
Are monitoring results consistently recorded as per approved frequency?	Yes.		OK
Have quality assurance and quality control procedures been applied in accordance with the monitoring plan?	CL 01: Clarify why there are no been conducted internal audit as informed in the registered PD. CL 02: Provide a copy from the Environmental licenses, and clay extraction licenses covering all the monitored period. (Observe that the clay is extracted from 2 mines). CL 03: Clarify how the thermal energy consumed during this monitoring period could be 44 % higher as the PD estimative.	CL 01 CL 02 CL 03	OK

CHECKLIST QUESTION	COMMENTS	Draft Concl	Final Concl
<i>Assessment of data and calculation of greenhouse gas emission reductions</i>			
Is a complete set of data for the specified monitoring period 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 validator shall make the most conservative assumption theoretically possible in finalizing the verification report).	Yes.		OK
Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	Yes. It is crosschecked with: Production note book; Biomass receipts.		OK
Have calculations of baseline emissions, proposed project 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?	Yes, calculations are been carried out in accordance with the predicted formulae and methods.		OK
Have any assumptions used in emission calculations been justified?	There are no assumptions.		OK
Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	Yes.		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
CAR 01: The spreadsheet calculations considered that one sawdust bag has 20kg. This is not representative of the bag weights, seen that the VVB weighted 5 random bags from the production, and the result is: 17.50 ; 21.73; 14.86; 23.64 and 31.66 kg.	3a	The bag weights measured during the site visit has an average of 21.878 Kg. The value adopted in the current Monitoring Report was 20 Kg, which was based on the ceramic owner estimative, and it is more conservative data. <i>Kitambar</i> Ceramic intends to acquire a proper balance as soon as possible to monitor the weight of the sawdust bag for each supplier. This implementation is predicted to be realized in the next monitoring period.	The question is clarified. However, as it is verified, this weight difference is due the different suppliers, and it is intended to be necessary to monitor this weight separately by supplier, and is raised the FAR 01. CAR 01 is closed.
CAR 02: The algarroba receipt, dated 24/12/2009, from “Leodório Pereira da Silva” wrongly informs as result from 5 deliveries (with 55.50; 55.60; 55.30; 55.40 and 55.50m3) the quantity of 76.60m3.	3a	Ok. Data mentioned was revised. Corrections were made in the VCS MR Calculation Spreadsheet and in the VCS MR v.02.0. Evidences will be sent to the audit team by e-mail.	The data in the MR and in the spreadsheet is corrected. CAR 02 is closed.
CAR 03: In august 2010, it is double counted in the spreadsheet the receipt from “Leodório Pereira da Silva” (332.5 m3).	3a	Data mentioned was revised in order to avoid the double counting. Corrections were made in the VCS MR Calculation	The data in the MR and in the spreadsheet is corrected.

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
		Spreadsheet and in the VCS MR v.02.0.	CAR 03 is closed.
CAR 04: The spreadsheet considered the biomass deliveries from “Marcio Luidson Pereira da Silva”, however, this is considered in the receipts from “Leodório Pereira da Silva”. (It occurred double counting).	3a	Data mentioned was revised in order to avoid the double counting. Corrections were made in the VCS MR Calculation Spreadsheet and in the VCS MR v.02.0.	The data in the MR and in the spreadsheet is corrected. CAR 04 is closed.
CAR 05: The cashew tree residues is double counted to providers “Erivonaldo Alves” and “João Aureliano Léo Filho”	3a	Data mentioned was revised in order to avoid the double counting. Corrections were made in the VCS MR Calculation Spreadsheet and in the VCS MR v.02.0.	The data in the MR and in the spreadsheet is corrected. CAR 05 is closed.
CAR 06: There is a cashew tree provider, “José Josafá Cabral” (11 receipts) not identified in the calculation spreadsheet.	3a	Ok. The cashew tree provider mentioned (11 receipts) was included in the calculation spreadsheet.	The receipts and the provider are included in the spreadsheet. CAR 06 is closed.

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
CAR 07: The MR, in the monitoring of the parameter Qrenbiomass, informed the density of “wood from sustainable management plan areas”. This biomass is not in the PD.	3a	The information was wrongly mentioned in the MR. The information was excluded in the VCS MR v.02.0.	MR is corrected. CAR 07 is closed.
CL 01: Clarify why there are no been conducted internal audit as informed in the registered PD.	3e	Sustainable Carbon is responsible to assess if the biomasses are from renewable origin, to evaluate if there is a surplus of renewable biomass and to calculate emission reductions, including an assessment of leakage emissions and the determination of parameter $f_{NRB,y}$. Sustainable Carbon also assists the ceramic personnel to double check the monitored data on biomass consumption and ceramic devices production. Before the site visit, the technical team also made another visit to the ceramic factory in order to collect data and verify its coherence. During the next verification, the Internal Audit records will be carried out through the Dropbox program, which started been used by the ceramic in March 2012.	Question is clarified. CL 01 is closed.

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
CL 02: Provide a copy from the Environmental licenses, and clay extraction licenses covering all the monitored period. (Observe that the clay is extracted from 2 mines).	3e	Documents requested will be sent to the audit team by e-mail.	Documents are provided. CL 02 is closed.
CL 03: Clarify how the thermal energy consumed during this monitoring period could be 44 % higher as the PD estimative	3e	In the MR v.01.2, the thermal energy consumed during monitoring period was 44 % higher than the PD estimative justified by the double counting of some types of biomass as already mentioned in the current Protocol. Thus, after the revision and updating of Production and Biomass data in the VCS MR Calculation Spreadsheet and in the VCS MR v.02.0., the thermal energy consumed during this monitoring period decreased to 631.34 TJ, while the thermal energy estimated in the PD during this same period (27 months) was 607.05 TJ. Therefore, thermal energy consumed during this monitoring period was 4% higher comparing to the VCS PD. This raise was followed by the increase of ceramic devices produced. Besides that, the thermal energy needed to produce one thousand of ceramic devices in the current monitoring period is similar to the estimated in the VCS PD, which proves that the energy provided by biomass is in accordance to the baseline scenario.	The data is corrected. CL 03 is closed.

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
FAR 01: As verified during this monitored period (refer to CAR 01), the sawdust bag presented considerable weight variations, depending on the supplier and type of sawdust. The next monitoring period shall consider the amount of bags by provider, with reliable evidence of the weights.			