

VERIFICATION REPORT



Document Prepared By TÜV Rheinland do Brasil Ltda. (On behalf of TÜV Rheinland (China) Ltd.)

Project Title	Cenol and Telha Forte Ceramic Fuel Switching Project
Version	02
Report ID	9105076088

Report Title	Verification Report for Cenol and Telha Forte Ceramic Fuel Switching Project
Client	Sustainable Carbon – Projetos Ambientais Ltda
Pages	46
Date of Issue	06-August-2013
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Summary:

The purpose and scope of verification

TÜV Rheinland has performed the 5th periodic verification of the project: “Cenol and Telha Forte Ceramic Fuel Switching Project” according to the Verified Carbon Standard – VCS Version 3. This verification covers the period from March 01st, 2011 to April 30th, 2012.

The project was validated under VCS 2007.1 by Designated Operational Entity TÜV Nord Cert GmbH, which also verified the first and second period verification from November 1st, 2007 to September 30th, 2008, and October 1st, 2008 to June 30th, 2009, respectively. The third and fourth period verification from July 1st, 2009 to January 31st, 2010 and February 1st, 2010 to February 28th, 2011 were verified by Bureau Veritas Certification.

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.

A brief description of the verification and the project

The project activity is the project of *Cenol and Telha Forte Ceramics*, which is an enterprise that produces structural ceramic devices such as bricks. The Cenol and Telha Forte Ceramics are located in the cities of São Miguel do Guamá, Pará State, north of Brazil. Before the project activity implementation, the fuel employed to fire the ceramic devices was native wood from the *Amazonian* biome.

The project activity consists on utilizing sawdust and açai to feed the kilns instead of using native wood from the *Amazonian* biome, which is a common practice in the region.

By utilizing renewable biomasses for the generation of thermal energy for industrial use, this project activity directly helps in reducing the Brazilian deforestation rates, the main source of greenhouse gas emissions in Brazil.

The method and criteria used for verification

The verification team has reviewed the Monitoring Report against the criteria established in the VCS Version 3 Program Guide and the CDM Validation and Verification Standard. In line with the criteria included in the VCS Version 3 Program Guide, the verification is meant to ensure that the reported emission reductions are real, measurable, transparent and conservative.

The verification consisted of a desk review and an on-site visit (September 17th and 18th, 2012) where interviews with the key personnel from the project company Cenol and *Telha Forte Ceramics* 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.

Summary of the verification conclusion

The Monitoring Report is considered to be in compliance with VCS Program Guide, the approved methodology “AMS-I.E.: Switch from Non-Renewable Biomass for Thermal Applications by the User”,

version 01 and the Monitoring Plan presented in the Project Description.

During the monitoring period from March 01st, 2011 to April 30th, 2012 the project generated the following GHG emission reductions: **34,679** tCO₂ equivalents.

TÜV Rheinland 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. TÜV Rheinland cannot guarantee the accuracy or correctness of this information. Hence, TÜV Rheinland 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 TÜV Rheinland to verify the 5th periodic verification of the emission reductions reported for the VCS “Cenol and Telha Forte Ceramic Fuel Switching Project” with regard to the relevant requirements for VCS program as per the Verified Carbon Standard Version 3.

The objective of the the 5th periodic verification 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 March 01st, 2011 to April 30th, 2012, 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 requirements, UNFCCC rules and associated interpretations. The verification is based on validated project design document including baseline calculations.

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”, version 01 was already validated by TÜV Nord Cert GmbH, documented in its Validation Report of March 2nd, 2009.

An explicit review of the validation and its underlying assumptions made and conclusion of TÜV Nord Cert GmbH are not scope of this verification.

1.3 Level of assurance

As the VCS Version 3 recognizes verified emission reductions, TÜV Rheinland 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, TÜV Rheinland 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

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

The Cenol and *Telha Forte Ceramics* Company are located in the city of São Miguel do Guamá, Pará State, north of Brazil. Cenol (Figure 1) and Telha Forte Ceramics (Figure 2) are enterprises that produce structural ceramic devices such as bricks.



Figure 1: Cenol Ceramic overview.



Figure 2: Telha Forte Ceramic overview.

As described in the VCS PD / 5 /, Cenol Ceramic encompasses seven (07) Round kilns and three (03) Paulistinha kilns, and Telha Forte Ceramic comprises eight (08) Round kilns and five (05) Paulistinha kilns. During the last monitoring period one Round and 3 Paulistinha kilns were deactivated in Cenol Ceramic, and eight (08) Round kilns in Telha Forte Ceramic. During the current periodic verification, three (03) Paulistinha kilns were constructed in Telha Forte, resulting in eight (08) active kilns in this monitoring period. The modifications occurred and the current quantity of activated kilns in each ceramics is demonstrated in Table 1.

Table 1: Quantity of kilns in Cenol and Telha Forte Ceramics.

Ceramic	Quantity of kilns (units)			
	PD (v.05) / 5 /	4 th periodic verification	5 th periodic verification	
		Kilns deactivated	Kilns constructed	Kilns currently active
Cenol	7 Round kilns	1 Round kiln	-	6 Round kilns
	3 Paulistinha kilns	3 Paulistinha kilns	-	0 Paulistinha kilns
Telha Forte	8 Round kilns	8 Round kiln	-	0 Round kilns
	5 Paulistinha kilns	-	3 Paulistinha kilns	8 Paulistinha kilns

This information was confirmed through the onsite visit carried out on September 17th and 18th, 2012, and hence, additionality analysis was again performed (please see section 3.1 of this verification report). During the onsite visit it was also observed that the drying process is semi-continuous in both ceramics.

The project has been fully operational in this monitoring period. This means the ceramics is operating using exclusively renewable biomass, thus mitigating their baseline emissions.

The switching fuel project reduces Greenhouse Gases (GHG) emissions, by replacing native wood from the *Amazonian* biome with renewable biomass, such as sawdust (Figure 3) and acai pits (Figure 4) for thermal energy generation.



Figure 3: Sawdust verified during the onsite visit.



Figure 4: Açaí Pits verified during the onsite visit.

This fuel switch could only be feasible when considering the carbon credits incomes, since the adaptation of kilns to the new biomasses, and the purchase of new equipments required considerable investments. Due to the project activity, some alterations were required in the productive process of the ceramic. Also, the cost of fuel represents a barrier, since renewable biomass is more expensive than native firewood on an energy basis.

The main goal of this project activity is to minimize the negative impacts of the deforestation of the *Amazonian* biome by discouraging the exploitation of the area. In opposition to the identified baseline, the project activity generates thermal energy without stimulating deforestation and uses abundant renewable biomass.

During the monitoring period from March 01st, 2011 to April 30th, 2012 the project generated the following GHG emission reductions: **34,679** tCO₂ equivalents. In addition, this project contributes to sustainable development by applying the SOCIALCARBON® Standard, which monitors six main aspects: carbon, biodiversity, social, financial, human and natural.

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 requirements. TÜV Rheinland has, based on the recommendations in the Validation and Verification Standard, 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 following 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 03.0
/ 2 / UNFCCC, CDM small scale methodology “AMS-I.E.: Switch from Non-Renewable Biomass for Thermal Applications by the User”, version 01.
/ 3 / UNFCCC, CDM small scale methodology “AMS-I.E.: Switch from Non-Renewable Biomass for Thermal Applications by the User”, Version 05, valid from 03/08/2012 onwards.
/ 4 / “General guidance on leakage in biomass project activities” (attachment C of appendix B), Version 03.0 (EB 21, Annex 22)
/ 5 / VCS PD registered, Version 05, dated February 20 th , 2009

/ 6 / VCS Validation Report – TÜV Nord Cert GmbH - March 2 nd , 2009
/ 7 / VCS Verification Report (1 st periodic verification) - TÜV Nord Cert GmbH - March 2 nd , 2009
/ 8 / VCS Verification Report (2 nd periodic verification) - TÜV Nord Cert GmbH – October 30 th , 2009
/ 9 / VCS Verification Report (3 rd periodic verification) - Bureau Veritas Certification Holding - SAS – June 8 th , 2010
/ 10 / VCS Verification Report (4 th periodic verification) - Bureau Veritas Certification Holding - SAS – September 6 th , 2011
/ 11 / VCS Monitoring Report - Version 1 – First Version – August 31 st , 2012
/ 12 / VCS Monitoring Report – Version 06 – Last version – August 06 th , 2013
/ 13 / Emission Reductions Calculation - Spreadsheet “VCS MR Calculation Cenol_Telha Forte_period 05_01_03_11_30_04_12_v05”
/ 14 / Biomass and production data of Cenol and Telha Forte Ceramics – Spreadsheets “Cer Cenol planilha de monitoramento 2011”, “Cer Cenol planilha de monitoramento 2012”, “Cer Telha Forte planilha de monitoramento 2011”, “Cer Telha Forte planilha de monitoramento 2012”.
/ 15 / Government of the State of Pará, State Secretary of the Environment, Operating license N° 3477/2009 for Telha Forte Ceramic, issued on 06/08/2009, valid until 05/08/2013 with maximum production of 2,500,000 ceramic pieces per month.
/ 16 / Government of the State of Pará, State Secretary of the Environment, Operating license N° 3335/2009 for Cenol Ceramic, issued on 26/06/2009, valid until 25/06/2013 with maximum production of 1,500,000 ceramic pieces per month.
/ 17 / Government of the State of Pará, State Secretary of the Environment, Operating license N° 5592/2011 for Cenol Ceramic for clay extraction, issued on 10/08/2011, valid until 09/08/2013
/ 18 / Menegalli Ceramic Calculation Spreadsheet. Correction factor calculation. – Spreadsheet “Cer Menegalli planilha de monitoramento 2011v2”
/ 19 / Cavalcante Ceramic Calculation Spreadsheet. Correction factor calculation. – Spreadsheet “Cer Cavalcante planilha de monitoramento 2011”
/ 20 / IBGE (Geographic and Statistic Brazilian Institute), Sawdust data from 2007. Available at: < http://www.ibge.gov.br/estadosat/temas.php?sigla=pa&tema=extracaovegetal2007 >
/ 21 / IBGE (Geographic and Statistic Brazilian Institute), Açai pits data from 2008. Available at: < http://www.sidra.ibge.gov.br/bda/extveg/default.asp?t=2&z=t&o=18&u1=1&u3=1&u2=15 >
/ 22 / Invoice for the purchase of sawdust from supplier Mad. Ulianopolis for the period between 01/03/2011 – 31/12/2011
/ 23 / Invoice for the purchase of sawdust from supplier Serraria Bastos for the period between 01/03/2011 – 31/12/2011
/ 24 / Invoice for the purchase of sawdust from supplier Mad. Versan for the period between 01/03/2011 – 31/12/2011
/ 25 / Invoice for the purchase of sawdust from supplier Mad. V. Das Portas for the period between 01/03/2011 – 31/12/2011
/ 26 / Invoice for the purchase of sawdust from supplier Mad. Tomé Açu for the period between 01/03/2011 – 31/12/2011
/ 27 / Invoice for the purchase of sawdust from supplier Mad. Timborana for the period between 01/03/2011 – 31/12/2011
/ 28 / Invoice for the purchase of sawdust from supplier Mad. Soares for the period between 01/03/2011 – 31/12/2011
/ 29 / Invoice for the purchase of sawdust from supplier Mad. Silva for the period between 01/03/2011 – 31/12/2011
/ 30 / Invoice for the purchase of sawdust from supplier Mad. São Francisco for the period between 01/03/2011 – 31/12/2011
/ 31 / Invoice for the purchase of sawdust from supplier Mad. Rossan for the period between 01/03/2011 – 31/12/2011

/ 32 / Invoice for the purchase of sawdust from supplier Mad. Paudarco for the period between 01/03/2011 – 31/12/2011
/ 33 / Invoice for the purchase of sawdust from supplier Mad. Morenin for the period between 01/03/2011 – 31/12/2011
/ 34 / Invoice for the purchase of sawdust from supplier Mad. Mojú for the period between 01/03/2011 – 31/12/2011
/ 35 / Invoice for the purchase of sawdust from supplier Mad. Miranda for the period between 01/03/2011 – 31/12/2011
/ 36 / Invoice for the purchase of sawdust from supplier Mad. Mãe do Rio for the period between 01/03/2011 – 31/12/2011
/ 37 / Invoice for the purchase of sawdust from supplier Mad. Madcap for the period between 01/03/2011 – 31/12/2011
/ 38 / Invoice for the purchase of sawdust from supplier Mad. Laminas for the period between 01/03/2011 – 31/12/2011
/ 39 / Invoice for the purchase of sawdust from supplier Mad. Junior for the period between 01/03/2011 – 31/12/2011
/ 40 / Invoice for the purchase of sawdust from supplier Mad. Ipixuna for the period between 01/03/2011 – 31/12/2011
/ 41 / Invoice for the purchase of sawdust from supplier Mad. Impar for the period between 01/03/2011 – 31/12/2011
/ 42 / Invoice for the purchase of sawdust from supplier Mad. Fátima for the period between 01/03/2011 – 31/12/2011
/ 43 / Invoice for the purchase of sawdust from supplier Mad. Esperança for the period between 01/03/2011 – 31/12/2011
/ 44 / Invoice for the purchase of sawdust from supplier Mad. Distrito for the period between 01/03/2011 – 31/12/2011
/ 45 / Invoice for the purchase of sawdust from supplier Mad. Dalsan for the period between 01/03/2011 – 31/12/2011
/ 46 / Invoice for the purchase of sawdust from supplier Mad. Belém for the period between 01/03/2011 – 31/12/2011
/ 47 / Invoice for the purchase of sawdust from supplier Mad. Angellin for the period between 01/03/2011 – 31/12/2011
/ 48 / Invoice for the purchase of sawdust from supplier Mad. Pará for the period between 01/03/2011 – 31/12/2011
/ 49 / Invoice for the purchase of sawdust from supplier Mad. Benfica for the period between 01/03/2011 – 31/12/2011
/ 50 / Invoice for the purchase of sawdust from supplier Mad. Santa Maria for the period between 01/03/2011 – 31/12/2011
/ 51 / Invoice for the purchase of sawdust from supplier Mad. Piriá for the period between 01/03/2011 – 31/12/2011
/ 52 / Invoice for the purchase of sawdust from supplier Mad. Dunorte for the period between 01/03/2011 – 31/12/2011
/ 53 / Invoice for the purchase of sawdust from supplier M. Paragominas for the period between 01/03/2011 – 31/12/2011
/ 54 / Invoice for the purchase of sawdust from supplier Indufex for the period between 01/03/2011 – 31/12/2011
/ 55 / Invoice for the purchase of sawdust from supplier Dalson Madeiras for the period between 01/03/2011 – 31/12/2011
/ 56 / Invoice for the purchase of sawdust from supplier Mad. Concordia for the period between 01/03/2011 – 31/12/2011
/ 57 / Invoice for the purchase of sawdust from supplier Mad. V das Portas for the period between 01/01/2012 – 30/04/2012
/ 58 / Invoice for the purchase of sawdust from supplier Triunfo for the period between 01/01/2012 – 30/04/2012

/ 59 / Invoice for the purchase of sawdust from supplier Timborana for the period between 01/01/2012 – 30/04/2012
/ 60 / Invoice for the purchase of sawdust from supplier Mad. Santa Maria for the period between 01/01/2012 – 30/04/2012
/ 61 / Invoice for the purchase of sawdust from supplier Mad. Santa Barbara for the period between 01/01/2012 – 30/04/2012
/ 62 / Invoice for the purchase of sawdust from supplier Mad. Semese for the period between 01/01/2012 – 30/04/2012
/ 63 / Invoice for the purchase of sawdust from supplier Mad. São Pedro for the period between 01/01/2012 – 30/04/2012
/ 64 / Invoice for the purchase of sawdust from supplier Mad. Santa Luzia for the period between 01/01/2012 – 30/04/2012
/ 65 / Invoice for the purchase of sawdust from supplier Mad. São José for the period between 01/01/2012 – 30/04/2012
/ 66 / Invoice for the purchase of sawdust from supplier Mad. São Francisco for the period between 01/01/2012 – 30/04/2012
/ 67 / Invoice for the purchase of sawdust from supplier Mad. Ramayana for the period between 01/01/2012 – 30/04/2012
/ 68 / Invoice for the purchase of sawdust from supplier Mad. Priscila for the period between 01/01/2012 – 30/04/2012
/ 69 / Invoice for the purchase of sawdust from supplier Mad. Normando for the period between 01/01/2012 – 30/04/2012
/ 70 / Invoice for the purchase of sawdust from supplier Mad. Norbel for the period between 01/01/2012 – 30/04/2012
/ 71 / Invoice for the purchase of sawdust from supplier Mad. Morenin for the period between 01/01/2012 – 30/04/2012
/ 72 / Invoice for the purchase of sawdust from supplier Mad. Moju for the period between 01/01/2012 – 30/04/2012
/ 73 / Invoice for the purchase of sawdust from supplier Mad. Master for the period between 01/01/2012 – 30/04/2012
/ 74 / Invoice for the purchase of sawdust from supplier Mad. Maiana for the period between 01/01/2012 – 30/04/2012
/ 75 / Invoice for the purchase of sawdust from supplier Mad. Madecape for the period between 01/01/2012 – 30/04/2012
/ 76 / Invoice for the purchase of sawdust from supplier Mad. M. Alegre for the period between 01/01/2012 – 30/04/2012
/ 77 / Invoice for the purchase of sawdust from supplier Mad. Laminas for the period between 01/01/2012 – 30/04/2012
/ 78 / Invoice for the purchase of sawdust from supplier Mad. Junior for the period between 01/01/2012 – 30/04/2012
/ 79 / Invoice for the purchase of sawdust from supplier Mad. Canaã for the period between 01/01/2012 – 30/04/2012
/ 80 / Invoice for the purchase of sawdust from supplier Mad. Josias for the period between 01/01/2012 – 30/04/2012
/ 81 / Invoice for the purchase of sawdust from supplier Mad. Ipixuna for the period between 01/01/2012 – 30/04/2012
/ 82 / Invoice for the purchase of sawdust from supplier Mad. Indusan for the period between 01/01/2012 – 30/04/2012
/ 83 / Invoice for the purchase of sawdust from supplier Mad. Flora for the period between 01/01/2012 – 30/04/2012
/ 84 / Invoice for the purchase of sawdust from supplier Mad. Fátima for the period between 01/01/2012 – 30/04/2012
/ 85 / Invoice for the purchase of sawdust from supplier Mad. Caboré for the period between 01/01/2012 – 30/04/2012

/ 86 / Invoice for the purchase of sawdust from supplier Mad. Brastiner for the period between 01/01/2012 – 30/04/2012
/ 87 / Invoice for the purchase of sawdust from supplier Mad. Benevides for the period between 01/01/2012 – 30/04/2012
/ 88 / Invoice for the purchase of sawdust from supplier Mad. Belém for the period between 01/01/2012 – 30/04/2012
/ 89 / Invoice for the purchase of sawdust from supplier Mad. Beira Rio for the period between 01/01/2012 – 30/04/2012
/ 90 / Invoice for the purchase of sawdust from supplier Mad. Arca for the period between 01/01/2012 – 30/04/2012
/ 91 / Invoice for the purchase of sawdust from supplier Mad. Aliança for the period between 01/01/2012 – 30/04/2012
/ 92 / Invoice for the purchase of sawdust from supplier Mad. Pará for the period between 01/01/2012 – 30/04/2012
/ 93 / Invoice for the purchase of sawdust from supplier Ipe Madeira for the period between 01/01/2012 – 30/04/2012
/ 94 / Invoice for the purchase of sawdust from supplier Indufex for the period between 01/01/2012 – 30/04/2012
/ 95 / Invoice for the purchase of sawdust from supplier Golf Madeiras for the period between 01/01/2012 – 30/04/2012
/ 96 / Invoice for the purchase of sawdust from supplier Mad. Edilson for the period between 01/01/2012 – 30/04/2012
/ 97 / Invoice for the purchase of sawdust from supplier Mad. Dunorte for the period between 01/01/2012 – 30/04/2012
/ 98 / Invoice for the purchase of sawdust from supplier Mad. Corumba for the period between 01/01/2012 – 30/04/2012
/ 99 / Invoice for the purchase of sawdust from supplier Mad. Concordia for the period between 01/01/2012 – 30/04/2012
/ 100 / Invoice for the purchase of sawdust from supplier CCM Madeiras for the period between 01/01/2012 – 30/04/2012
/ 101 / Invoice for the purchase of sawdust from supplier Brastimber for the period between 01/01/2012 – 30/04/2012
/ 102 / Invoice for the purchase of sawdust from supplier C. L. Industria for the period between 01/01/2012 – 30/04/2012
/ 103 / Invoice for the purchase of sawdust from supplier Mad. Benfica for the period between 01/01/2012 – 30/04/2012
/ 104 / Invoice for the purchase of sawdust from supplier Ailton for the period between 01/01/2012 – 30/04/2012
/ 105 / Invoice for the purchase of sawdust from supplier Adriano for the period between 01/01/2012 – 30/04/2012
/ 106 / Invoice for the purchase of sawdust from supplier Três Irmãos for the period between 01/01/2012 – 30/04/2012
/ 107 / Invoice for the purchase of açaí pits from supplier Belaiáça for the period between 01/03/2011 – 31/12/2011
/ 108 / Invoice for the purchase of açaí pits from supplier Palamas for the period between 01/03/2011 – 31/12/2011
/ 109 / Invoice for the purchase of açaí pits from supplier Santa Helena for the period between 01/03/2011 – 31/12/2011
/ 110 / Invoice for the purchase of açaí pits from supplier Antonio for the period between 01/01/2012 – 30/04/2012
/ 111 / Invoice for the purchase of açaí pits from supplier Belaiáça for the period between 01/01/2012 – 30/04/2012
/ 112 / Invoice for the purchase of açaí pits from supplier Palamas for the period between 01/01/2012 – 30/04/2012

/ 113 / Voluntary Carbon Standard 2007 Available at: < http://www.v-c-s.org/program-documents/previous-versions >
/ 114 / Ministry of Mines and Energy, Brazilian Energy Balance 2012 Available at:< https://ben.epe.gov.br/BENRelatorioFinal2012.aspx >
/ 115 / The Greenhouse Gas Protocol, The GHG Protocol for Project Accounting Available at: < www.ghgprotocol.org/files/ghgp/ghg_project_protocol.pdf >

2.3 Interviews

The verification team has performed an on-site visit on September 17th and 18th, 2012, where the operations of the ceramic were reviewed. During the audit inspection the verification team conducted interviews with the following representatives of the project companies *Cenol Cerâmica do Norte Ltda*, *Cerâmica Telha Forte Ltda* and the Sustainable Carbon – Projetos Ambientais Ltda who prepared the VCS PD and the VCS Monitoring Report.

- Mr. Francisco Valdir, director and owner of *Cenol and Telha Forte Ceramics*
- Mrs. Heronita Silva Sobrinho, secretary and monitoring data responsible of *Cenol and Telha Forte Ceramics*
- Mr. Thiago Othero, consultant of Sustainable Carbon – Projetos Ambientais Ltda

2.4 Site Inspections

An on-site inspection was conducted on September 17th and 18th, 2012 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 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, except for the monitoring of parameter Qrenbiomass.

2.5 Resolution of Any Material Discrepancy

This process is aimed at resolving any outstanding issues which need to be clarified prior to the TÜV Rheinland 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, 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, the consistency check using the internal daily records of the production of ceramic units (PRy) against the Calculation Spreadsheet used to calculate the ER revealed that the internal daily records were monitoring the production output of the molding machine instead of the amount that ceramic devices burned in the kilns. There is a loss of pieces between these two processes. This issue has been resolved as requested on CAR 2 (see on Table 2 of Verification Protocol), as the PPs applied a correction factor (88.92%) based on real data from Telha Forte Ceramic from January 2012 to May 2012. This is a conservative value for ER calculations compared to correction factors from other ceramics in the same region (São Miguel do Guamá municipality), such as Menegalli Ceramic (90.72%) / 18 / and Cavalcante Ceramic (89.43%) /19 /.

There is no FAR from previous verification, but due to a failure on the storage of invoices of biomass purchase at Telha Forte Ceramic, the verification team raised a FAR:

FAR 01: Please provide a consistent procedure on how to monitor and store the monitored data to be followed in Cenol and Telha Forte ceramics and verified in the next monitoring period. The implementation of the procedure on monitoring and storage of data will be followed-up in the next verification period.

As a result, a procedure on the monitoring of biomass purchase, production of ceramic pieces and internal audit was determined, and will be followed-up in the next verification period.

3 VERIFICATION FINDINGS

The findings of the verification are stated in the following sections. The verification criteria (requirements), the means of verification and its results against the identified criteria are documented in more detail in the verification protocol in Appendix A.

3.1 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 Cenol and *Telha Forte Ceramics*, according to the VCS PD / 5 /.

During the on-site visit, it was physically observed by the verification team that renewable biomasses, such as sawdust and açai have been employed on the kilns of the Cenol and *Telha Forte Ceramics* for energy supply.

The project implementation status has follows:

Start date:	March 1 st , 2007
First crediting period (10 years, twice renewable)	November 1 st , 2007 to October 31 st , 2017 Total Emission Reductions estimated for the period: 577,290 tCO ₂ e
1 st Periodic Verification	November 1 st , 2007 to September 30 th , 2008 Emission Reductions: 47,508 tCO ₂ e
2 nd Periodic Verification	October 1 st , 2008 to June 30 th , 2009 Emission Reductions: 30,956 tCO ₂ e

3 rd Periodic Verification	July 1 st , 2009 to January 31 st , 2010 Emission Reductions: 30,736 tCO ₂ e
4 th Periodic Verification	February 1 st , 2010 to February 28 th , 2011 Emission Reductions: 42,014 tCO ₂ e

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

This monitoring period comprises from March 01st, 2011 to April 30th, 2012, on which 29,037,324 ceramic units were produced. Compared to estimates in the registered PD / 5 /, the production decreased 44%, which explains the decrease of 49% in the emission reductions of this periodic verification compared to the estimated in the VCS PD / 5 /. This reduction occurred since it was verified onsite that both ceramics monitor the production at the output of the molding machine, and hence a correction factor was applied in all production to subtract the losses. This is not in accordance with the VCS PD / 5 /, *“the calculations regarding the quantity of non-renewable wood required in the burning process were done according to the consumption of non-renewable biomass of the kilns on the production [...]”*. Analogously to the baseline scenario, the amount of pieces produced should be monitored in the entrance of the kilns during the periodic verifications.

Thus the verification requested for justification for the acceptance of the choice of data which was justified with the application of correction factor, calculated based on real production data of Telha Forte Ceramic from January 2012 to May 2012 because this was the period on which the entrance of the kiln was monitored, enabling the calculation of losses between the molding process and burn in the kilns. The verification team checked the production data from this specific period and it was correctly calculated, resulting in 88.92%. This correction factor is deemed a conservative value since in the region there are two other projects (“Menegalli Ceramic Fuel Switching Project”, ID 158, and Cavalcante Ceramic Fuel Switching Project, ID 34) recently verified which had within the same period a correction factor of 90.72% / 18 / and 89.43% / 19 /, respectively. Also, during this monitoring period, there was a failure on storage of biomass documents between March 2011 and June 2011, and hence, during this period, no biomass was accounted, which the verification team deemed conservative.

As described in the VCS PD / 5 /, Cenol Ceramic encompasses seven (07) Round kilns and three (03) Paulistinha kilns, and Telha Forte Ceramic comprises eight (08) Round kilns and five (05) Paulistinha kilns. During the last monitoring period one Round and 3 Paulistinha kilns were deactivated in Cenol Ceramic, and eight (08) Round kilns in Telha Forte Ceramic. During the current periodic verification, three (03) Paulistinha kilns were constructed in Telha Forte, resulting in eight (08) active kilns in this monitoring period. The modifications occurred and the current quantity of activated kilns in each ceramics is demonstrated in Table 1.

Due to this modification in the kilns capacity and efficiency, the verification team raised CL 4 and CAR 8 (please see Table 2 of Appendix A).

The assessment of the deviation impacting the additionality, applicability of the methodology AMS-I.E / 2 /, scale and baseline was carried out by the verification team, and can be seen below.

The applicability of the methodology AMS-I.E / 2 / is not affected since this project:

Applicability of AMS-I.E (V. 01) / 2 /	Applicability of the project activity
1. This category comprises small thermal appliances that displace the use of non-renewable biomass by introducing new renewable energy end-user technologies. Examples of these end user technologies include biogas stoves and solar cookers.	This project is still a small scale since Cenol and Telha Forte Ceramics have a thermal generation capacity of 5.26 MW, as demonstrated in Table 2. Cenol Ceramic has no thermal generation capacity since all biomass was purchased in name of Telha Forte Ceramic.
2. If any similar registered small-scale CDM project activities exist in the same region as the proposed project activity then it must be ensured that the proposed project activity is not saving the non-renewable biomass accounted for by the other registered project activities.	As per section 2.2 of the VCS PD / 5 /, there are no similar registered small-scale CDM project activities in the same region.
3. Project participants are able to show that non-renewable biomass has been used since 31 December 1989, using survey methods.	As per section 2.2 of the VCS PD / 5 /, there are many documents to prove that wood has been used for thermal energy generation before 1989.

Table 2: Thermal generation capacity in each ceramic.

Ceramic Name	Thermal generation capacity (MW)
Cenol	0
Telha Forte	5.26
Total	5.26

The baseline was not affected since the project still utilizes renewable energy technologies that displace technologies using non-renewable biomass, and the calculation is still the amount of non-renewable native wood that would have been used in the absence of the project activity to feed the kilns of the ceramics.

According to the VCS PD / 5 /, the additionality assessment was performed to demonstrate that due to the modification of kiln capacity and efficiency, the additionality of the project is not affected. This is carried out based on Section 5.8 of VCS 2007 Standard, Test 1, and discussed in **Table 3** below:

Table 3: Additionality assessment.

Requirements of VCS 2007 Standard (Section 5.8, Test 1 - The project test)	Demonstration of additionality
Step 1: Regulatory Surplus	As per VCS PD, "the project is not mandated by any enforced law, statute of other regulatory

The project shall not be mandated by any enforced law, statute or other regulatory framework	framework in Federal, State and Municipal levels [...]”, which is still valid and confirmed by the verification team.
Step 2: Implementation Barriers The project shall face one (or more) distinct barrier(s) compared with barriers faced by alternative projects. (a) Investment Barrier – Project faces capital or investment return constraints that can be overcome by the additional revenues associated with the generation of VCUs. (b) Technological Barriers – Project faces technology-related barriers to its implementation. (c) Institutional barriers – Project faces financial, organizational, cultural or social barriers that the VCU revenue stream can help overcome.	(a) The investment barrier was demonstrated through the comparison between the cost of energy generated on the baseline scenario and the current monitoring period, detailed in Table 3 of VCS MR / 12 / and also in the spreadsheet calculation / 13 /. The verification team was able to verify that all assumptions have been used in a proper manner, thus it is consistent to assert that the project is still additional. Also, the investment barrier was not affected since the ceramic pieces production was 44% lower than the determined in the VCS PD / 5 /, but with a sufficient thermal energy necessary to produce the ceramic pieces. (b) With regard to the technological barriers, as per VCS PD / 5 /, the following issues are faced: lack of human knowledge, internal logistic changes and employees’ resistance to the new technology. In fact, the verification team confirms that the project activity requires more effort in comparison with the baseline scenario (native wood from the <i>Amazonian</i> biome), because since the project activity implementation they store the biomass in covered areas; if a more efficient process is needed, the biomass needs to be previously dried before entering the kilns; the açai pits produce ashes that form a crystallized solid, which needs to be cleaned at the end of every burning process, which demands more time and effort from the ceramic employees. These issues were confirmed during the onsite assessment. (c) According to the VCS PD / 5 /, this project has no direct subsidy or support from the government. Also, the modifications due to this project activity (adaptation of the kilns, use of a different fuel, among others) had a risk of diminishing the ceramic production, lack of biomass at the region, or an increase in the price of biomasses. The investment barrier step demonstrates that the VCU revenues are essential for the implementation and

	maintenance of this project activity.
Step 3: Common Practice The common practice was analyzed following the GHG Protocol for Project Accounting / 115 /, which has to meet the steps below: (a) Define the product or service provided by the project activity; (b) Identify possible types of baseline candidates; (c) Define and justify the geographic area and the temporal range used to identify the baseline candidates (d) Define and justify any other criteria used to identify baseline candidates (e) Identify a final list of baseline candidates (f) Identify baseline candidates that are representative of common practice (for the project-specific baseline procedure).	(a) Ceramic roof tiles was defined in the VCS PD / 5 /. (b) As per VCS PD / 5 /, “the baseline candidates are: natural gas, charcoal, wood, other recuperations, diesel oil, fuel oil, liquefied petroleum gas, others from petroleum, piped gas, electricity and others not specified. Other possible candidate would be the use of renewable biomass without the carbon credits support”. (c) Brazil, as the host country was defined as the geographical area. (d) According to the VCS PD / 5 /, “[...] criteria used to identify baseline candidates were the common practice, the cost of fuel and the local availability of the technology and fuel”. (e) The final baseline candidates listed in the VCS PD / 5 / were wood, natural gas, fuel oil and renewable biomass. (f) According to the VCS PD / 5 /, “In this industry segment the use of wood represents about 98% of the total fuel employed [...] Thus, the common practice is the use of wood and its non-renewable fraction, which is the fuel most employed and with less risk associated”. As per Table 4, latest data available provided by the Ministry of Mines and Energy, it is possible to confirm that in the entire host country (Brazil), the use of wood is still the main source of fuel employed in the ceramic sector, representing in 2011 more than 50%, while others types of sources (such as biomass, charcoal, liquefied petroleum gas, among others) represents only 11.3%.

Table 4: Distribution of fuel employed on the ceramic sector in Brazil in percentage from 2002 to 2012.
(Source: Brazilian Energy Balance /114/).

FONTES	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	SOURCES
LENHA	48,6	49,1	50,1	50,1	49,9	49,1	51,0	50,7	51,1	51,1	FIREWOOD
GÁS NATURAL	23,1	25,2	23,9	24,3	25,5	25,0	24,2	23,8	25,6	27,6	NATURAL GAS
ÓLEO COMBUSTÍVEL	11,4	9,2	9,2	7,8	8,1	8,1	7,7	7,8	6,6	2,7	FUEL OIL
ELETRICIDADE	7,8	7,8	8,2	7,9	7,8	7,4	7,2	7,3	7,2	7,3	ELECTRICITY
OUTRAS	9,1	8,7	8,7	9,8	8,7	10,4	9,8	10,4	9,5	11,3	OTHERS
TOTAL	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	TOTAL

Therefore, based on the assessment as per Table 3, it is possible to confirm that the additionality of this project activity is not affected.

The thermal energy is calculated by the amount of renewable biomass applied in the monitoring period times the net calorific value of each component.

Table 5: Thermal energy per thousand of ceramic devices at Cenol and Telha Forte Ceramics.

Ceramic Name	Thermal energy in VCS PD / 5 / (TJ/thousands of ceramic devices)	Thermal energy in the current monitoring period (TJ/thousands of ceramic devices)
Cenol	0.007	0.000
Telha Forte	0.004	0.011

As per Table 5, on which values are demonstrated in the spreadsheet / 13 / and also in the MR / 12 /, it is possible to confirm that thermal energy during this monitoring period is higher than the determined in the VCS PD / 5 /, and hence, the verification team is able to conclude that the amount of renewable biomass are sufficient to ensure appropriate burning of the ceramic pieces produced, and also that no alternative (e.g. non-renewable biomass, fossil fuels) need to be applied. This difference is also because not all the biomass purchased in this monitoring period was applied to burn these ceramic pieces. Therefore, the verification team is able to conclude that the additionality is not impacted.

As required by VCS Validation and Verification Manual (v. 3.0, paragraph 3.2.9), since this deviation does not impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario, and the project remains in compliance with the applied methodology, the deviation is properly described and justified in the monitoring report.

As stated on the VCS MR, a deviation from the monitoring plan regarding the measurement the amount of renewable biomasses used (parameter $Q_{renbiomass}$) was done. The registered VCS PD / 5 / establishes that the project proponent (meaning the ceramic owner) would measure the amount of renewable biomasses used (parameter $Q_{renbiomass}$). However, during the entire monitored period this parameter was

monitored through receipts, invoices and written declaration from biomass providers received by the ceramic industry. This means the amount of renewable biomass is measured by each provider and controlled by the ceramic owners by storing receipts, invoices and declarations. The verification team checked the receipts, invoices and declarations from the biomass providers and considered the deviation is acceptable and reliable.

Another deviation occurred because at Telha Forte Ceramic the biomass documents were not stored between March 2011 and June 2011, and hence, the biomass amount from this period was not considered and this is accepted as no emission reduction is claimed for this period.

Besides, the leakage of the non-renewable biomass was not monitored as required by AMS-I.E (V.01, paragraph 9) / 2 /, and hence, the PPs applied the latest available methodology AMS-I.E (V.05, paragraph 10) / 3 /, which determines that B_y should be multiplied by a correction factor of 0.95 in cases surveys are not required. Please see section 3.2 of this verification report for more details.

According to the VCS PD, in order to maintain the project in accordance with local laws, it must run with licenses under valid time. During the on-site visit, the verification team checked the operating license for ceramic devices production of Telha Forte Ceramic / 15 / and Cenol Ceramic / 16 /, the operating license for clay extraction at Cenol Ceramic / 17 / and they were valid during this monitored period, confirming the project compliance with the local laws. The operating license for ceramic pieces production of Telha Forte Ceramic / 15 / enables the production up to 2,500,000 ceramic pieces per month, and at Cenol Ceramic / 16 / at most 1,500,000 ceramic pieces per month. The verification team confirms that in none of months in this monitoring period the production for emissions reduction calculation / 13 / was higher than the specified in the licenses.

3.2 Accuracy of GHG Emission Reduction or 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_y) minus project emissions (PE_y) minus leakage emissions (LE_y). 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 _y	= Emission reductions during the year y in tCO _{2e}
f _{NRB,y}	= 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 _{biomass}	= Net calorific value of the non-renewable that is substituted (IPCC default for wood fuel, 0.015 TJ/tonne)
B _y	= Quantity of biomass that is substituted or displaced in tonnes
PR _y	= Number of ceramic pieces produced per month

BF_y = Tonnes of wood per thousand of pieces produced

There are three types of leakage to be considered in this project, the leakage due to the substitution of non-renewable biomass by renewable biomass, the leakage relating to the non-renewable biomass and the leakage due to transfer of equipment.

The first source is the leakage of non-renewable biomass predicted in paragraph 8 of the applied methodology AMS-I.E (v.1) / 2 / was monitored in accordance with the “General guidance on leakage in biomass project activities” (attachment C of appendix B) / 4 /. As per this guidance / 4 / , the possible source of leakage is the competing use of biomass, and it was demonstrated in section 4.3 of MR / 12 / applying national sources / 20 // 21 / that there is a surplus of the applied biomass in the specific region of the project activity, which is demonstrated in Table 6.

Table 6: Renewable biomass surplus in the region of the project activity.

Biomass	Renewable biomass surplus (per year)	Used in the project per year (in this monitoring period)	Percentage of biomass used compared to the available quantity in the region
Sawdust	1,999,833 m ³	30,522.67 m ³	1.53 %
Açaí pits	90,973 m ³	8,883.24 m ³	9.76 %

The data from Table 6 is based on publicly available information (IBGE – Brazilian Institute of Geography and Statistics / 20 // 21 /) referenced in the last version of MR.

The data from Brazilian Institute of Geography and Statistics (IBGE) / 20 // 21 / were not further crosschecked with other external sources since IBGE is the main provider of data and information in the country, serving the needs of various segments of civil society, as well as organs of governmental federal, state and municipal, and therefore was accepted by verification team.

As per Table 6, it is possible to confirm that the quantity of biomass utilized in the project is lower than 25% for all types of biomass, and hence, there is no leakage to be included due to competing use.

The second source of leakage (paragraph 9 of AMS-I.E V.01 / 2 /), was not monitored in this monitoring period due to lack of information on biomass users. As an alternative, the PPs applied the latest available version of the applied methodology AMS-I.E(V. 05) / 2 / (paragraph 10), on which it is defined that:

“10. Leakage related to the non-renewable woody biomass saved by the project activity shall be assessed based on ex post surveys of users and the areas from which this woody biomass is sourced (using 90/30 precision for a selection of samples). The following potential source of leakage shall be considered:

(a) The use/diversion of non-renewable woody biomass saved under the project activity by non-project households/users that previously used renewable energy sources. If this leakage assessment quantifies an increase in the use of non-renewable woody biomass used by the non-project households/users, that is attributable to the project activity, then B_y is adjusted to account for the quantified leakage. Alternatively, B_y is multiplied by a net

to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.”

Since no ex-post survey was performed, B_y was multiplied by an adjustment factor of 0.95 to account for leakage, which the team verifies and accepted.

The third source of leakage is determined on paragraph 10 of AMS-I.E. (V.01) / 2 /: *“If the equipment is transferred from another activity or if the existing equipment is transferred to another activity, leakage is to be considered”*. No equipment is transferred from another activity nor existing equipment is transferred to another activity because it is not possible to transfer kilns, and hence, no leakage is considered.

As a result, a total of **1,815 tCO₂e** was estimated for this monitoring period, which is demonstrated in the calculation spreadsheet / 13 /.

Emission reductions were correctly calculated 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.

3.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

TÜV Rheinland was able to verify that Cenol and Telha Forte Ceramics have 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.

As per the VCS PD / 5 /, the amount of renewable biomass employed would be measured by the ceramic owner, but during the monitoring period, it was checked through receipts, invoices and declarations from biomass providers / 22 – 112 /. The quantity of biomass is purchased in the name of Telha forte Ceramic, and the biomass is consumed by Cenol and Telha Forte Ceramics. The verification team is able to confirm that the amount of renewable biomass purchased is enough to burn the ceramic pieces produced in both ceramics through the thermal energy calculation / 13 /, which is detailed below.

The production of ceramic units was checked by accessing the internal production control sheets used by Cenol and *Telha Forte Ceramics*, which are organized per month and daily filled according to data based on the number of ceramic units burned in the kilns. During the onsite visit, it was verified that in both ceramics the production was monitored after the molding machine process, and hence, a correction factor of 88.92% was applied to subtract the losses until the entrance of the kilns.

The energy balance is verified in the calculation spreadsheet / 13 /, on which the thermal energy is divided by the total amount of production, and the thermal energy per tonnes of pieces produced estimated in the VCS PD / 3 / and in the current monitoring period MR / 12 / is 0.007 TJ/thousands of pieces and 0.000 ¹TJ/thousands of pieces for Cenol Ceramic and 0.004 TJ/thousands of pieces and

¹ This amount is zero since the biomass was purchased in name of Telha Forte Ceramic.

0.011 TJ/thousands of pieces for Telha Forte Ceramic, respectively. As per calculations in the spreadsheet / 13 /, the thermal energy per thousand of ceramic pieces produced in both ceramics in VCS PD / 3 / is 0.005, which is lower than the current monitoring period (0.007). The thermal energy is calculated by the amount of renewable biomass applied in the monitoring period times the net calorific value of each component. The difference in these values is due to the decrease in the ceramic production, and also because not all the biomass purchased in this monitoring period was applied to burn these ceramic pieces produced.

The monitoring of ceramic devices is daily performed in the output of the molding machine by ceramic employees. This data is collected and is transferred to the ceramic office. Mrs. Heronita Silva Sobrinho and Mr. Francisco Valdir, as monitoring data responsables of Cenol and Telha Forte Ceramics, collects the data and insert them into an excel file (dropbox file) / 14 /, without internal audit. These excel files are protected with a password in order to avoid modifications in the inserted data. The responsible for the monitoring data has 60 days to include the information, after gathering all invoices and production data. Mrs. Heronita Silva Sobrinho and Mr. Francisco Valdir are also responsible for controlling the invoices, receipts, DOFs (Document of Forest Origin) and insertion of biomass data into the dropbox.

With regard to leakage emissions, the leakage due to the substitution of non-renewable biomass by renewable biomass was monitored based on publicly available data / 20 / - / 21 /. The second source of leakage relating to the non-renewable biomass was not properly monitored during this period due to lack of data and hence, the last version of AMS-I.C / 2 / was appropriately applied. Finally, since there was no transfer of any energy generating equipment, the leakage due to transfer of equipment is zero (0). As a result a total of **1,815 tCO₂e** was estimated for this monitoring period.

The parameter ' $f_{NRB,y}$ ' is demonstrated in the calculation spreadsheet / 13 /. This parameter is calculated based on the area of Amazonian Biome, the area of Amazonian with sustainable use and the amount of wood that would be saved by project activities placed in Amazonian area.

The team verifies that 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 requirements.

3.4 Management and Operational System

Through the on-site visit and interviews, the verification team checked that the quality management for the project is in place. As confirmed by the project proponent, the monitoring plan has been implemented as per the registered VCS PD, except for the monitoring of the parameter Qrenbiomass, which was initially determined that it would be measured by the project proponents, but in this monitoring period it was used the amount informed by the biomass providers. It was accepted by the verification team since this information is used for commercial purposes.

The according responsibilities of the personnel mentioned in the Monitoring Report are consistent with the current monitoring plan, served as the basis of the monitoring activity, except for the monitoring of parameter Qrenbiomass.

During the on-site visit, the verification team interviewed Mrs. Heronita Silva Sobrinho (Cenol Ceramic) and Mr. Francisco Valdir (Telha Forte Ceramics), monitoring data responsible who are in charge for monitoring data, information on inputs and outputs of the ceramic industry, detailed information on the acquisition of renewable biomasses and how this data is kept by the controller's office. Due to CAR 2, CAR 4 and CL 2, it was concluded that they are not well familiar with the project monitoring procedures, and hence FAR 01 was raised.

4 VERIFICATION CONCLUSION

The verification team of TÜV Rheinland has performed a Verification for the Cenol and Telha Forte Ceramic Fuel Switching Project in Brazil on the basis of VCS Version 3 and UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The verification team concluded that the project as described in the VCS Monitoring Report (version 06, August 06th, 2013), meets all relevant requirements of the above-defined criteria. TÜV Rheinland therefore issues a positive Verification opinion.

The verified Emission Reductions during the concerned monitoring period (March 01st, 2011 to April 30th, 2012) are displayed as follows:

Table 7: Emission Reductions of Cenol Ceramic during the monitoring period.

Period	PRy (units)	By (ton)	PE _y (tCO ₂ e)	LE _y (tCO ₂ e)	ERy (tCO ₂ e)
2011	6,678,043	6,678	0	417	7,975
2012	4,541,553	4,542	0	284	5,424
Total Monitoring Period	11,219,596	11,220	0	701	13,399

Table 8: Emission Reductions of Telha Forte Ceramic during the monitoring period.

Period	PRy (units)	By (ton)	PE _y (tCO ₂ e)	LE _y (tCO ₂ e)	ERy (tCO ₂ e)
2011	10,581,114	10,581	0	661	12,638
2012	7,236,614	7,237	0	453	8,642
Total Monitoring Period	17,817,728	17,818	0	1,114	21,280

Table 9: Emission Reductions of Cenol and Telha Forte Ceramics during the monitoring period.

Period	PR _y (units)	By (ton)	PE _y (tCO ₂ e)	LE _y (tCO ₂ e)	ER _y (tCO ₂ e)
2011	17,259,157	17,259	0	1,078	20,613
2012	11,778,167	11,778	0	737	14,066
Total Monitoring Period	29,037,324	29,037	0	1,815	34,679

GHG Emission Reductions or Removals	tCO ₂ e
Baseline Emissions	36,494
Project Emissions	0
Leakage	1,815
Net GHG emission reductions or removals	34,679

Assessment of actual emission reductions with the estimate reductions in the Project Description:

Estimated Emission Reduction as per Registered/Approved PD:	Cenol Ceramic: 18,723 tCO₂e/ annum (excluding March to June of 2011: 12,482 tCO₂e/ annum) Telha Forte Ceramic: 39,006 tCO₂e/ annum (excluding March to June of 2011: 26,004 tCO₂e/ annum) Total: 57,729 tCO₂e/ annum (excluding March to June of 2011: 38,486 tCO₂e/ annum)
Actual Emission Reduction for the Monitoring Period	2011: 20,613 tCO₂e Cenol Ceramic: 7,975 tCO₂e Telha Forte Ceramic: 12,638 tCO₂e 2012: 14,066 tCO₂e Cenol Ceramic: 5,424 tCO₂e Telha Forte Ceramic: 8,642 tCO₂e Total: 34,679 Cenol Ceramic: 13,399 tCO₂e Telha Forte Ceramic: 8,642 tCO₂e
Is any increase of CER's occurred?	No
Reason for Increase of CER's	Not applicable

5 APPENDIX A – VERIFICATION PROTOCOL

Table 1: Verification Requirements					
Checklist question	Ref.	MoV²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1. Implementation					
1.1 Have all physical features proposed in the registered PDD been implemented at the project site? § 184 of CDM Project Standard	VVS	DR	Yes, during the on site visit performed on 17 th September 2012, the verification team verified that all physical features were in place.	OK	OK
1.2 Has the project activity been operated in accordance with the project scenario described in the registered PDD and relevant guidance? Reference: < http://cdm.unfccc.int/EB/033/eb33rep.pdf >, §75 § 185 of CDM Project Standard	VVS	DR	Yes, the project activity have been operated in accordance with the project scenario described in the registered VCS PD.	OK	OK
1.3 If the project activity is implemented on a number of different locations, has the Monitoring report provided the verifiable starting dates for each site? § 188of CDM Project Standard	VVS	DR	Not applicable. The project is implemented in two red ceramics companies belonging to the same owner and started on the same date.	OK	OK
1.4 Is the start date of monitoring period consistent?	VVS	DR	Yes, the start of this monitoring period is consistent, since it follows the monitoring period of the previous verification processes, which properly followed the start date of the crediting period stated in the VCS.	OK	OK
1.5 Is the monitoring report consistently filled with respect to all sections as required by its guideline of filling	VVS	DR	Yes, the monitoring report is in	OK	OK

² MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

Table 1: Verification Requirements					
Checklist question	Ref.	MoV²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
the monitoring report?			accordance with the last available template (v3.1) in the VCS website, and is properly filled.		
1.6 Does the CER's obtained for the monitoring period within the limit of estimate in the registered PDD? Is the claimed CER's justifiable?	VVS	DR	Yes, it is within the limit.	OK	OK
1.7 Is the monitoring system provided in line diagrams showing all relevant monitoring points?	VVS	DR	Yes.	OK	OK
2. Monitoring plan and methodology					
2.1 Is the monitoring plan established in accordance with the monitoring methodology? § 186 of CDM Project Standard	VVS	DR	Yes, the monitoring plan established is in accordance with the monitoring methodology.	OK	OK
2.2 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 CDM EB? Reference: < http://cdm.unfccc.int/EB/033/eb33rep.pdf >, §84, §58 § 193 of CDM Project Standard	VVS	DR	Not applicable. Please see item 2.1.	OK	OK
2.2.1 Have the above changes to the monitoring plan been approved by the CDM EB?	VVS	DR	Not applicable. Please see item 2.1.	OK	OK
3. Monitoring and the monitoring plan					
3.1 Is monitoring established in full compliance with the monitoring plan, contained in the registered PDD (or new monitoring plan approved by the CDM EB)? § 191 of CDM Project Standard	VVS	DR	Yes, the monitoring established is in full compliance with the monitoring plan, contained in the registered VCS PD.	~~GL-1~~ ~~GL-2~~ ~~CAR-8~~	CLOSED CLOSED CLOSED

Table 1: Verification Requirements

Checklist question	Ref.	MoV ²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
			CL 1: Review and clarify on page 7 of MR the kilns description, in order to illustrate in a better way the changes on both ceramics. CL 2: During the onsite visit and interview with responsible of monitoring plan, it was informed that the Telha Forte Ceramic has failed to store documents regarding the purchase of biomass (sawdust) from March 2011 to July 2011, which did not comply with the MR, where it is stated that the biomass would be monthly measured. Review is requested on page 11 of MR regarding this information and also replace the term “biomass” to “sawdust”. CAR 8: It is missing to include the Açaí pits in the additionality analysis (financial tab in the calculation spreadsheet). Also, please update the MR.	~~CL-3~~ CL-4	CLOSED CLOSED

Table 1: Verification Requirements					
Checklist question	Ref.	MoV ²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
			CL 3: The inflation rate of renewable biomass cost has considered the value of 6.50% in the demonstration of cost of delivered heat. It is unclear why the consideration of inflation is only applicable to biomass but not non-renewable wood. CL 4: The Monitoring Report project description indicates that the type and number of kilns are no longer same as in the validated project design. It is unclear how the assessment of additionality of the project due to changes in type and number of kilns correlate with saving from the cost of delivered heat. Further clarification is requested to be incorporated in the Monitoring Report to demonstrate that the additionality of the project is not impacted due to the changes. Otherwise, the validated project design need to be revised.		
3.2 Are all baseline emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	VVS	DR	Yes, all baseline emission parameters are monitored and updated in accordance with monitoring plan.	OK	OK

Table 1: Verification Requirements					
Checklist question	Ref.	MoV²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
3.2.1 Was the monitoring equipment for baseline emission parameters controlled and monitoring results recorded as per approved frequency?	VVS	DR	No monitoring equipment is used to determine the baseline emission parameters. The frequencies of the parameters are in accordance with the monitoring plan. Please see item 4.1.	OK	OK
3.2.2 Was the monitoring equipment for baseline emission parameters calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	VVS	DR	Not applicable. No monitoring equipment is used to determine the baseline emission parameters.	OK	OK
3.3 Are all project emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	VVS	DR	Not applicable. There are no project emissions in this project activity.	OK	OK
3.3.1 Was the monitoring equipment for project emission parameters controlled and monitoring results recorded as per approved frequency?	VVS	DR	Not applicable. Please see item 3.3.	OK	OK
3.3.2 Was the monitoring equipment for project emission parameters calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	VVS	DR	Not applicable. Please see item 3.3.	OK	OK
3.4 Are all leakage emission parameters monitored and updated in accordance with monitoring plan, monitoring methodology and relevant CDM EB decisions?	VVS	DR	Upon closure of CAR 6 and CAR 7.	~~CAR 6~~ ~~CAR 7~~	CLOSED CLOSED
3.4.1 Was the monitoring equipment for leakage emission parameters controlled and monitoring results recorded as per approved frequency?	VVS	DR	Upon closure of CAR 6 and CAR 7.	~~CAR 6~~ ~~CAR 7~~	CLOSED CLOSED
3.4.2 Was the monitoring equipment for leakage emission parameters calibrated in accordance with QA&QC procedures described in the registered monitoring plan?	VVS	DR	Upon closure of CAR 6 and CAR 7.	~~CAR 6~~ ~~CAR 7~~	CLOSED CLOSED

Table 1: Verification Requirements

Checklist question	Ref.	MoV ²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
3.5 Were all monitoring parameters available and verifiable through the whole monitoring period?	VVS	DR	No. Telha Forte Ceramic has failed to store documents regarding the purchase of biomass from March 2011 to July 2011. Also, a correction of production values for Cenol Ceramic was made by PP, as the ceramic has failed to monitor the amount of ceramic devices burned in the kilns directly. CAR 1: “Ratio between the production output of the molding machine and the amount of ceramic devices fired in the kilns” on the Calculation Spreadsheet doesn’t seem to be correctly calculated. Also, provide evidences that the value is conservative. CAR 2: As per on site visit, it was observed that the production of ceramic devices of Telha Forte Ceramic during the year 2011 was also considered production output of the molding machine instead of the amount that ceramic devices burned in the kilns. Data currently used need to represent the actual scenario and	~~CAR 1~~ ~~CAR 2~~	CLOSED CLOSED

Table 1: Verification Requirements					
Checklist question	Ref.	MoV²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
			not collected during the monitoring period.		
3.5.1 In case, only partial monitoring data is available and PP(s) provide estimations or assumptions for the rest of data, was it possible to verify those estimations and assumptions? Reference: < http://cdm.unfccc.int/EB/026/eb26rep.pdf >, §109(b)	VVS	DR	Idem to item 3.5 CAR 1	CAR 1	CLOSED
3.6 Was management and operation system established and operated in accordance with the monitoring plan?	VVS	DR	Yes, management and operation system established and operated are in accordance with the monitoring plan.	OK	OK
3.7 Was is it possible to verify that involved management and operation personal is fully aware of the responsibilities and perform all operations according to the registered monitoring plan and internally developed manuals?	VVS	DR	Yes. The responsible for the monitoring plan are Mrs. Heronita Silva Sobrinho and Mr. Francisco Valdir from Cenol and Telha Forte ceramics. Sustainable Carbon technical team (including those members described on Section 1.3 of the MR) was also involved in the project monitoring.	OK	OK
3.8 Does the monitoring system provide organizational structure, role and responsibilities, emergency procedures?	VVS	DR	Yes.	OK	OK
3.9 Does any uncertainties identified and addressed?	VVS	DR	NA	OK	OK
4. Parameters					
4.1 Monitored parameter	VVS	DR	CAR 3: During the onsite visit, it was	CAR 3	CLOSED

Table 1: Verification Requirements					
Checklist question	Ref.	MoV²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
Title: Q_{renbiomass} Indication: Amount of renewable biomasses Units: tonnes per year			observed that the Telha Forte Ceramic purchased the biomass “Açaí pits” but on Calculation Spreadsheet there were no inputs of any amount of this biomass, please include and provide evidences. CAR 4: Please include on Calculation Spreadsheet the amount of Sawdust for the Cenol Ceramic from August 2011 to April 2012 following the receipts checked during the on site visit. CAR 5: Review the amount of sawdust purchased by Telha Forte Ceramic from August 2011 to April 2012 in the dropbox files (since they are not consistent with evidences checked onsite).	~~CAR 4~~ ~~CAR 5~~	CLOSED CLOSED
Title: PR_y Indication: Production of ceramic units Units: Tonnes of ceramic units fired per month	VVS	DR	CAR 6: A review of the production data in the 2012 dropbox file of Telha Forte Ceramic is needed since they are not consistent with the evidences	~~CAR 6~~	CLOSED

Table 1: Verification Requirements					
Checklist question	Ref.	MoV²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
			checked onsite.		
Title: Origin of renewable biomass Indication: Renewable origin of the biomass Units: Not applicable	VVS	DR	It was confirmed that only the renewable biomass mentioned in the MR is applied. It was confirmed through the biomass receipts and invoices.	OK	OK
Title: Renewable biomass surplus Indication: Amount of renewable biomass available Units: tonnes or m ³ Estimated value (<i>ex-ante</i>): forest residue (sawdust) (9,090,150 m ³), rice husk (84,734,3 tons), acai pits (79,715.5 tons), elephant grass (not measured) Measured value (<i>ex-post</i>): sawdust (79,715.5 tons), sawdust (1,999,833 m ³)	VVS	DR	CAR 7: Please include the description of “Açaí pits” in section 4.3 of MR and also the calculation demonstration in the spreadsheet for transparency purpose. Please include the calculation of “sawdust” as well.	~~CAR 7~~	CLOSED
Title: Leakage of non-renewable biomass Indication: Leakage resulted from the non-renewable biomass Units: tCO _{2e} Estimated value (<i>ex-ante</i>): 0 Measured value (<i>ex-post</i>): 0	VVS	DR	Upon closure of CAR 7.	~~CAR 7~~	CLOSED
4.2 Default parameter Title: EF _{projected fossil fuel} Indication: CO ₂ Emission factor of residual fuel oil Units: tCO ₂ /TJ Default/Used value: 77.40 Title: NCV _{biomass}	VVS	DR	The verification team cross-check the independent sources of data and confirmed that all the references were correctly applied.	OK	OK

Table 1: Verification Requirements					
Checklist question	Ref.	MoV²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
Indication: Net Calorific Value Units: TJ/tonne of wood Default/Used value: 0.0182 Title: ρ_{biomass} Indication: Specific gravity Units: tonne/m³ Default/Used value: 0.6753 Title: BFy Indication: Consumption of non-renewable biomass per thousand of ceramic devices Units: Tonne of wood per thousand of devices Default/Used value: 1.00					
5. Calculations					
5.1 Have all the calculations related to the baseline emissions been carried according to the formulae and methods described in the registered PDD and applied methodology? § 194 of CDM Project Standard	VVS	DR	The formulae and methods for baseline emissions described in the MR are in accordance with the registered VCS PD. Also, they were properly applied in the spreadsheet calculation.	OK	OK
5.2 Have all the calculations related to the project emissions been carried according to the formulae and methods described in the registered PDD and applied methodology?	VVS	DR	Not applicable. Please see item 3.3.	OK	OK
5.3 Have all the calculations related to the leakage emissions been carried according to the formulae	VVS	DR	Not applicable. Please see item 3.4.	OK	OK

Table 1: Verification Requirements					
Checklist question	Ref.	MoV ²	Findings, comments, references, data sources	Draft conclusion	Final conclusion
and methods described in the registered PDD and applied methodology?					

Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)					
No.	Type of request	Observation	Reference (Table 1)	Summary of project owner response	Verification team conclusion
1.	CAR	CAR 1: “Ratio between the production output of the molding machine and the amount of ceramic devices fired in the kilns” on the Calculation Spreadsheet doesn’t seem to be correctly calculated. Also, provide evidences that the value is conservative.	3.5	The “ratio between the production output of the molding machine and the amount of ceramic devices fired in the kilns” was calculated by dividing the total amount of pieces fired in the kilns by the total amount of pieces produced in the molding machine. Through this calculation, the ratio resulted in 88.92%. That means that the ceramic has 11.08% of production losses or stock of unburned devices. This result was then compared to other 2 projects from the same region (São Miguel do Guamá municipality) that have been recently verified. From March to December/2011, the ceramic Menegalli presented a loss ratio of 90.72%, while the ceramic Cavalcante, within the same period, had a loss ratio of 89.43%. Through these results, the ratio of Cenol and Telha Forte was considered to be conservative as it has the lower value amongst the other ceramics.	The calculation was based on real data of Telha Forte Ceramic from January 2012 to May 2012, which was the period when the entrance of the kiln was monitored, enabling this comparison only during this period. The verification team checked the production data from this specific period and it was correctly calculated, resulting in 88.92%. The correction factor ratio has considered the amount of pieces produced after the molding machine process and the entrance of kiln, and this calculation was transparently demonstrated in the calculation spreadsheet of Telha Forte /14/. The correction factor of Menegalli and Cavalcante were confirmed through the spreadsheets “Cer Cavalcante planilha de monitoramento 2011” and “Cer Menegalli

					planilha de monitoramento 2011v2". Hence, the verification team deems this CAR as CLOSED.
2.	CAR	CAR 2: As per on site visit, it was observed that the production of ceramic devices of Telha Forte Ceramic during the year 2011 was also considered production output of the molding machine instead of the amount that ceramic devices burned in the kilns. Data currently used need to represent the actual scenario and not collected during the monitoring period.	3.5	The correction factor was also applied to Telha Forte production of the molding machine to estimate the production of pieces fired.	The calculation spreadsheet was corrected. CAR is CLOSED.
3.	CAR	CAR 3: During the onsite visit, it was observed that the Telha Forte Ceramic purchased the biomass "Açaí pits" but on Calculation Spreadsheet there were no inputs of any amount of this biomass, please include and provide evidences.	4.1	1st Response: The quantity of the biomass "Açaí pits" was inserted on the Calculation Spreadsheet. The evidences will be sent to the validation team. 2nd Response: The quantity of biomass is consistent with the evidence provided by ceramics Cenol and Telha Forte as can be verify by comparing the biomass spreadsheet with the ceramics declarations. Also, we've presented declarations from part of suppliers which was used as a support for the ceramics declaration. Besides, it was not possible to obtain the declarations from all suppliers since they are difficult to	1st Conclusion: The quantity of "Açaí pits" was included in the spreadsheet, but they're not consistent with the evidences provided, since the declarations present only part of the açaí pits bought. Please provide the rest of the evidences. 2nd Conclusion: Still, the verification team is not able to confirm whether the values in the declarations are correct. Please provide evidences.

				reach. 3rd Response: The evidences were sent to the validation team.	~~CAR remains OPEN.~~ 3rd Conclusion: Invoices received and data consistent with dropbox spreadsheet. CAR is CLOSED.
4.	CAR	CAR 5: Review the amount of sawdust purchased by Telha Forte Ceramic from August 2011 to April 2012 in the dropbox files (since they are not consistent with evidences checked onsite).	4.1	1st Response: The amount of sawdust purchased was revised and the evidences will be sent to the validation team. 2nd Response: The quantity of biomass is consistent with the evidence provided by ceramics Cenol and Telha Forte as can be verify by comparing the biomass spreadsheet with the ceramics declarations. Also, we've presented declarations from part of suppliers which was used as a support for the ceramics declaration. Besides, it was not possible to obtain the declarations from all suppliers since they are difficult to reach. 3rd Response: The evidences were sent to the validation team. 4th Response: The spreadsheet data was corrected and the monitoring report was updated. The evidences were sent	1st Conclusion: The quantity of sawdust is still not consistent with the evidences provided, since the declarations present only part of the sawdust bought. Please provide the rest of the evidences. 2nd Conclusion: Still, the verification team is not able to confirm whether the values in the declarations are correct. Please provide evidences. 3rd Conclusion: The following invoices in the dropbox spreadsheet are inconsistent with the evidences provided: ~~3312, 3320, 3328, 3337, 3348, 3355, 3362, 3367~~ . Also, it's missing ~~3301~~ .

				to the validation team.	CAR remains OPEN. 4th Conclusion: Corrections made. CAR is CLOSED.
5.	CAR	CAR 6: A review of the production data in the 2012 dropbox file of Telha Forte Ceramic is needed since they are not consistent with the evidences checked onsite.	4.1	The production of Telha Forte ceramic regarding 2012 was revised and the evidences will be sent to the validation team.	Production properly revised (dropbox spreadsheet) and in accordance with the evidences provided. CAR is CLOSED.
6.	CL	CL 1: Review and clarify on page 7 of MR the kilns description, in order to illustrate in a better way the changes on both ceramics.	3.1	Ok. The text was changed to a clear way and a table with the kilns information was inserted in the report in order to illustrate in a better way the changes on both ceramics.	Modification made. CL is CLOSED.
7.	CL	CL 2: During the onsite visit and interview with responsible of monitoring plan, it was informed that the Telha Forte Ceramic has failed to store documents regarding the purchase of biomass (sawdust) from March 2011 to July 2011, which did not comply with the MR, where it is stated that the biomass would be monthly measured. Review is requested on page 11 of MR regarding this information and also	3.1	The information in the Monitoring Report was corrected; however, Telha Forte failed to store documents from March 2011 to June 2011 as can be seen in the Calculation Spreadsheet where the biomasses from these months were not considered in the calculations.	Correction made. The verification team checked that biomass was purchased from July onwards through declarations provided by suppliers. CL is CLOSED.

		replace the term “biomass” to “sawdust”.			
8.	CAR	CAR 6: Please include the demonstration of the monitoring of parameter “leakage of non-renewable biomass” in the monitoring report and spreadsheet, as defined in the VCS PD (section 3.2).	4.1	According to the Methodology AMS-I.E, version 01, paragraph 9, “<i>the leakage relating to the non-renewable biomass shall be assessed from ex-post surveys of users and areas from where biomass is sourced</i>”; however, the leakage of non-renewable biomass was not monitored as required, since it is not feasible to perform such surveys, given the variety of sources of non-renewable biomass and the lack of information regarding its current users. Performing such surveys would not be financially feasible. As an alternative approach, we have applied the requirements of the Methodology AMS-I.E, version 5 paragraph 10, which determines that alternatively, B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required. As a result, the total ERY of the period analyzed was corrected to 34,679 tCO₂e.	Response accepted by the verification team. CAR is CLOSED.
9.	CAR	CAR 7: Please include the description of “Açaí pits” in section 4.3 of MR and also the calculation demonstration in the spreadsheet for	4.1	The description of Açaí Pits was included in the leakage section of MR along with a table of the renewable biomass calculation for sawdust and	Renewable biomass surplus for leakage assessment was added to the MR / 2 / and ER spreadsheet calculation / 13 /.

		transparency purpose. Please include the calculation of “sawdust” as well.		açaí pits.	CAR is CLOSED.
10.	CAR	CAR 8: It is missing to include the Açaí pits in the additionality analysis (financial tab in the calculation spreadsheet). Also, please update the MR.	3.1	The açaí pits data were included in the additionality analysis in the calculation spreadsheet as requested. Also we updated the Monitoring Report with this information.	Upon closure of CAR 3 and CAR 4.
11.	CL	CL 3: The inflation rate of renewable biomass cost has considered the value of 6.50% in the demonstration of cost of delivered heat. It is unclear why the consideration of inflation is only applicable to biomass but not non-renewable wood.	3.1	The inflation rate of 6.50% is applicable only to the non-renewable biomass as shown in the calculation spreadsheet. The cost of non-renewable wood was updated applying a conservative correction factor considering the annual costs of the period from 2006 to 2012.	Response accepted. The renewable biomass costs are real values and with the inflation rate already incorporated at that period of time. CL is CLOSED.
12.	CL	CL 4: The Monitoring Report project description indicates that the type and number of kilns are no longer same as in the validated project design. It is unclear how the assessment of additionality of the project due to changes in type and number of kilns correlate with saving from the cost of delivered heat. Further clarification is requested to be incorporated in the Monitoring Report to demonstrate that the additionality of the project is not impacted due to the changes.	3.1	As described in the Monitoring Report, the number and type of kilns are no longer the same as in the Project Description. Regarding the change in the kilns type, this does not interfere in the additionality of the project since both kilns are intermittent, achieves the same maximum temperature of 900° and have the same average of production per burning cycle. On the other hand, the only difference between the kilns is the shape, being one rectangular and the other one round. Moreover, the change in the number of	Since the additionality assessment was carried out in the monitoring report and also in the calculation spreadsheet, CL is CLOSED.

		Otherwise, the validated project design need to be revised.		kilns does not impact the additionality because both ceramics still pay a higher cost in the renewable biomass than in the non-renewable biomass.	
13.	CAR	CAR 9: There is no description in the Monitoring Report about biomass storage.	-	The description regarding the biomass storage was included in the Monitoring Report version 06.	Description included, CAR is CLOSED.

Table 3: List of forward action requests (FARs)				
FAR number	Observation	Reference	Summary of project participants' response	Verification team conclusion
FAR 01	Please provide a consistent procedure on how to monitor and store the monitored data to be followed in Cenol and Telha Forte ceramics and verified in the next monitoring period. The implementation of the procedure on monitoring and storage of data will be followed-up in the next verification period.	-	1st Response: Both ceramics will request the invoices and receipts to all biomass suppliers as a fundamental requirement to purchase the biomasses. These documents will be stored so the information does not get lost. Also, to control and monitor the information, the ceramics will input the data from documents in a spreadsheet. 2nd Response: Also, to ensure that biomass and production data are being correctly filled, a biomass and production audit spreadsheet will be used. Project developer will perform an audit every monitoring period, verifying if biomass and production data are being correctly filled in the Dropbox Spreadsheets and correcting it when necessary. Sustainable Carbon is also responsible for training the staff of each Project Proponent for proper supply of information, in order to minimize data management errors and ensure a reliable data collection. In case of personnel change, a Sustainable Carbon responsible will be	1st Conclusion: The monitoring of the production data should also be improved and be included in the procedure. 2nd Conclusion: The procedure and mentioned spreadsheet were not received by the verification team. 3rd Conclusion: Documents received. FAR will be followed-up in the verification period.

			in charge of training the new staff. <u>3rd Response:</u> The procedure and the spreadsheet were sent to the verification team.	
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