



VERIFICATION REPORT CENOL AND TELHA FORTE CERAMICS SWITCHING FUEL PROJECT



Document Prepared by Earthood Services Private Limited

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Report Title	Verification Report – Cenol and Telha Forte Ceramics Switching Fuel Project
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Prepared By	Earthood Services Private Limited
Contact	409-410, Tower B4, Spaze I-Tech Park, Sector 49, Gurugram 122018, India

	kaviraj.singh@earthhood.in www.espl-india.com
Approved By	 Kaviraj Singh
Work Carried Out By	Marcelo Sebben (Team Leader) Sergio Cruz (Technical Reviewer)

Summary:

Brief summary of the project activity

The project activity involves fuel switching from native firewood from Amazon biome to sawdust and açai pits in the ceramic industry. Thus, GHG emission reduction is achieved.

The project applies the CDM approved methodology AMS-I.E – Switch from Non-Renewable Biomass for Thermal Applications by the User – version 07.0.

Scope of verification

Sustainable Carbon – Projetos Ambientais Ltda has contracted ESPL to conduct the 2nd verification of the 2nd Crediting period of the project “Cenol and Telha Forte Ceramics Switching Fuel Project” for the period from 01/01/2021 to 31/12/2021 (both days included).

The scope of the verification is to establish/verify that:

- the latest available MR template was used and correctly filled up;
- the project activity has been implemented and operated as per the registered PD and that all physical features (technology and monitoring equipment) of the project are in place;
- the monitoring report and other supporting documents provided are complete in accordance with the latest applicable version of the completeness checklist for requests for issuance of VCUs, verifiable, and in accordance with applicable requirements of the Verified Carbon Standard Version 4.3;
- the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and approved methodology;
- the data are recorded and stored as per the monitoring methodology.

In addition, ESPL has also been contracted to conduct the verification of SOCIALCARBON Standard of the project activity at Point SIX (6), with regard to its relevant requirements, for the same monitoring period.

Conclusion

ESPL has performed the verification of the VCS project “Cenol and Telha Forte Ceramics Switching Fuel Project”, with VCS Project ID 54, for the monitoring period above mentioned.

During the present VCS verification, 06 CLs and 03 CARs were raised and successfully closed. And regarding the Social Carbon Standard, 01 CAR has been raised and successfully closed. Moreover, a FAR has been raised due to the construction of two kilns observed during the site visit in Telha Forte Ceramic which will start its operation in 2022.

The verification team has confirmed the implementation of the grouped project as per description in the VCS-PD, the monitoring plan of the PD and the application of the monitoring methodology (AMS-I.E –version 07.0). In addition, it was confirmed that the monitoring system is in place and the emission reductions are calculated without material misstatements.

The verified emission reductions amount to **40,116 tCO₂e** in the above mentioned monitoring period.

In addition, the verifier states that project meets all relevant requirements established by the SOCIALCARBON Standard. The SOCIALCARBON report identifies the social economic and environmental impacts of the project activity and presents the results obtained by meeting the “Brazilian Red Ceramic factories Indicators” – version 1.1.

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1 INTRODUCTION

1.1 Objective

Sustainable Carbon – Projetos Ambientais Ltda has contracted ESPL to conduct the 2nd verification of the 2nd Crediting period of the project “Cenol and Telha Forte Ceramics Switching Fuel Project” for the period from 01/01/2021 to 31/12/2021 (both days included) according to the requirements of the Verified Carbon Standard Version 4 to conduct the verification from point SIX of SOCIALCARBON for the same period.

1.2 Scope and Criteria

The scope of the verification is to establish/verify that:

- the project activity has been implemented and operated as per the registered PD and that all physical features (technology, project equipment and monitoring) of the project are in place;
- the monitoring report and other supporting documents provided are complete in accordance with the latest applicable version of the completeness checklist for requests for issuance of VCUs, verifiable, and in accordance with applicable VCS standard Version 4 requirements;
- the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan, the approved methodology including applicable tool(s) and/or, where applicable, the approved standardized baseline;
- the data are recorded and stored as per the monitoring methodology including applicable tool(s) and, where applicable, the standardized baseline.

The verification of this monitoring period is based on the registered VCS-PD, MR and GHG emission reduction calculation spreadsheet and supporting documents.

In addition, the scope of the SOCIALCARBON verification is to establish/verify that:

- to have an independent third party assessment in order to evaluate the accuracy and consistency of the SOCIALCARBON Standard – version 5.0 and “Brazilian Red Ceramic factories Indicators” – version 1.1, for this specific point in time – Point SIX; and
- to verify the consistency of these Indicators and their evolution since last evaluation, with the established criteria to maintain the designation as SOCIALCARBON, following the SOCIALCARBON Standard.

1.3 Level of Assurance

The verification of this monitoring period has achieved a reasonable level of assurance

1.4 Summary Description of the Project

The verification of this monitoring period has achieved a reasonable level of assurance.

1.5 Summary Description of the Project

The project activity involves fuel switching from native firewood from Amazon biome to sawdust, and açaí pits in Cenol and in Telha Forte Ceramics at the city of São Miguel do Guamá, State of Pará, Brazil. Thus, GHG emission reduction is achieved.

Cenol Cerâmica do Norte Ltda and Cerâmica Telha Forte Ltda are the project owners as it could be observed in their Environmental Licenses/07- Appendix II/.

The project is listed at VCS and can be accessed by the following link:

<https://registry.verra.org/app/projectDetail/VCS/54>

The project contributes to the following sustainable development actions in the host country

- Use of clean technologies
- Development of new technologies within the country
- Use of renewable biomass

The sustainable development actions were assessed through SOCIALCARBON Standard – version 5.0 and “Brazilian Red Ceramic factories Indicators” – version 1.1

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification process is conducted as per internal CDM Quality Manual and in accordance with criteria laid down by VCS. It includes the following steps:

- contract with PP for the scope and appointment of verification team and technical review team;
- completeness check of Monitoring Report;
- desk review of Monitoring Report and corresponding ER sheet by verification team and planning of onsite audit;
- virtual on-site inspection by verification team;
- follow up activities e.g., interviews;
- reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report;
- independent technical review of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences);

- reporting and closure of TR comments/findings (CARs/CLs/FARs) and final approval for the decision made;
- issuance of final verification report to contracted PP (or authorized representatives).

2.2 Document Review

A desk review was conducted by the verification team that included:

- a review of the data and information presented to verify its completeness;
- a review of the registered monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;
- an evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;
- supporting documents.

A complete list of documents/evidences reviewed is included as Appendix I.

A complete list of documents/evidences reviewed for SOCIALCARBON purposes is included as Appendix II.

2.3 Interviews

#	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation / Role			
1.	Lopes	Reginaldo	HR responsible	10/03/2022	Site visit Social Carbon	Marcelo Sebben
2.	Oliveira Silva	Marcos Antonio	Telha Forte Ceramic Manager	10/03/2022	Site visit Production operation and monitoring	Marcelo Sebben
3.	Moura da Cunha	Camila	Administrative Services Cenol and Telha forte Ceramics	10/03/2022	Social Carbon	Marcelo Sebben
4.	Siqueira Queiroz	Rosangela	Health and Safety Technician of both Ceramics	10/03/2022	Health and Safety issues related to Social Carbon Standard	Marcelo Sebben
5.	Ramos Pereira	Cesar Augusto	Plant Operator/Kiln Cenol Ceramic	10/03/2022	Kilns Operation	Marcelo Sebben

6.	Palhares	Julia	Sustainable Carbon	10/03/2022	Project activity monitoring Excel calculations Social Carbon Monitoring parameters	Marcelo Sebben
7.	Silva	Yara	Sustainable Carbon	10/03/2022	Carbon Credits and Social carbon support	Marcelo Sebben

2.4 Site Inspections

Duration of on-site inspection (virtual): 10/03/2022				
#	Activity performed on-site	Site location	Date	Team member
1.	Opening Meeting	Video call	10/03/2022	Marcelo Sebben
2.	Implementation and operation of project activity as per registered PD/previous verifications.	Video call	10/03/2022	Marcelo Sebben
3.	Management and monitoring procedures followed at project site.	Video call	10/03/2022	Marcelo Sebben
4.	Physical inspection of the project activity: site visit and interview of monitoring personnel for both ceramics.	Video call	10/03/2022	Marcelo Sebben
5.	Verification checklist: compliance of monitoring procedures followed at project site with registered PD and monitoring methodology.	Video call	10/03/2022	Marcelo Sebben
6.	Management and operational system: documentation, allocation of responsibilities, qualification and training, data recording & archiving, internal audit and management review and emergency procedures.	Video call	10/03/2022	Marcelo Sebben
7.	Review of estimated ER calculations in accordance with applied methodology and relevant tools.	Video call	10/03/2022	Marcelo Sebben
8.	Review of monitored data and relevant document in accordance with registered monitoring plan and applied monitoring methodology.	Video call	10/03/2022	Marcelo Sebben
9.	Presentation of findings	Video call	10/03/2022	Marcelo Sebben

The on-site inspection was not conducted by the team leader during this verification process.

Instead, the VVB used other standard auditing techniques for verification, as follows:

- Current pictures of main equipment/¹²/.
- Document review
- Real time Videoconference with all involved personnel from project activity.

These audit techniques used have been considered sufficient and credible by the verification team for the purpose of the present verification.

2.5 Resolution of Findings

The findings may be of following types: CAR – Corrective Action Request, CL – Clarification Request and FAR – Forward Action Request.

During the present verification, findings were raised and successfully closed. No FAR has been raised.

For the SOCIALCARBON verification, also findings were raised and successfully closed.

The list of findings and their resolution are presented at Appendices IV and V of this report.

2.5.1 Forward Action Requests

A FAR has been raised during this monitoring period due to the construction of two kilns observed during the site visit in Telha Forte Ceramic which will start its operation in 2022. There is no FAR from previous monitoring period.

2.6 Eligibility for Validation Activities

ESPL holds the accreditation for validation and verification of the sectoral scope.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The project activity has no participation under any other GHG program.

3.2 Methodology Deviations

The project activity complies with the applied methodology AMS-I.E – Switch from Non-Renewable Biomass for Thermal Applications by the User – version 07.0 and all applicable tools.

No deviations were observed.

3.3 Project Description Deviations

In the registered PDD, it has been informed that Cenol Ceramic operates with 13 Paulista Kilns. Nevertheless, during this monitoring period, it could be observed that only 11 were operating. Information regarding this change are not clear in the MR and therefore a CL has been raised. Refer to CL01. After findings resolution, it could be confirmed that only 11 Paulista Kilns were operative during the current monitoring period. This change was already observed in the previous monitoring period and therefore was already approved. It remains valid for this monitoring period. This change is appropriately described and justified in the MR and, especially, in the resolution of CL 01 below. The project remains in compliance with VCS Program rules. The number of operative kilns does not affect the applicability of methodology, additionality or appropriateness of the baseline scenario and the project remains in compliance with applied methodology. Especially regarding the additionality, the fact of less kilns are operative should not affect the additionality as any investment have actually been done and cannot be excluded. Moreover, in theory, less products will be produced, and the project will be less attractive. Therefore, this change does not affect negatively the additionality.

Moreover, during the current monitoring period it was observed that the reference for determining the sawdust surplus is no longer available. Therefore, new evidences have been used. Refer to CL 05. Regarding this change, it can be confirmed by the verification team that is appropriately described and justified in the MR and, especially, in the resolution of CL 05 below. The project remains in compliance with VCS Program rules. The source of information (sawdust surplus) does not affect the applicability of methodology, additionality or appropriateness of the baseline scenario and the project remains in compliance with applied methodology.

3.4 Grouped Projects

The project activity is not a grouped project.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The project activity involves fuel switching from native firewood from Amazon biome to sawdust and açaí pits for production of ceramic pieces (bricks and roof tiles) in Cenol and in Telha Forte Ceramics. The ceramic Cenol operates with 11 "Paulista" kilns whereas the Telha Forte Ceramics operates with 8 "Paulista" Kilns), and 2 Mobile Kilns.

As per the virtual on-site assessment, observations, interviews and collected evidences, it was possible to assess that, in general, the project activity has been implemented as described in the VCS-PD, with all changes already approved in the previous crediting period (refer to section 3.3 above).

There is no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology.

In addition, the GHG emission reductions generated by the project have not become included in any emissions trading program or any other mechanism that includes GHG allowance trading. Moreover, the project has not received nor sought any other form of environmental credit, and neither has become eligible to do so since validation or previous verification. Finally, the project has not participated nor been rejected under any other GHG programs since validation or previous verification.

Some of the characteristics of the project activity are described below:

- Project Proponents: Cenol Cerâmica do Norte Ltda, Cerâmica Telha Forte Ltda and Sustainable Carbon - Projetos Ambientais Ltda ;
- Project Category: project ($\leq 300,000$ t CO₂e/y);
- Methodology: AMS-I.E – Switch from non-renewable biomass for thermal applications by the user – version 07.0;
- Start Date: 01/03/2007 – date on which the project proponent began employing renewable biomass as fuel;
- Crediting Period: 2nd Crediting Period – from 01/11/2017 to 31/10/2027 – 10 years and zero months – renewable;
- Project Location: Cenol and Telha Forte Ceramics: Rodovia BR 010 – KM 1808 – Bairro Industrial São Miguel do Guamã - Pará, Brazil, Postal Code: 68660-000;
 - o Geodetic Coordinates (SAD69):
 - Cenol Ceramic: 1° 32' 12.06"S and 47° 30' 48.59"W
 - Telha Forte Ceramic: 1° 32' 12.41"S and 47° 30' 48.65"W
- Technical Data: Cenol Ceramic operates with 11 Paulista kilns whereas ceramic Telha Forte operates with 8 "Paulista" kilns and 2 mobile kilns.
- The main applicable SDGs are:
 - o SDG 7: Affordable and Clean Energy – energy is generated with biomass residues and therefore this SDG is applicable.
 - o SDG 8: Decent Work and Economic Growth – this SDG is monitored through following Social Carbon Indicators: Social (3. Employee satisfaction surveys), Human (4. Additional employee benefits, 5. Health and safety practices, 6. Training and capacity building programs), and Technology (14. Technological advances to improve the general conditions of the working environment).
 - o SDG 12: Responsible Consumption and Production – this SDG is monitored through the following Social Carbon indicators: Social (2. Community development), and Natural (10. Environmental management, 11. Brazilian environmental legislation, 12. Voluntary environmental initiatives,).

- SDS 13: Climate Action – This SDG is monitored apart from the ERs achieved, by the following Social Carbon indicators: Financial (9. Carbon credit investments), Natural (12. Voluntary environmental initiatives), Carbon (16. Stakeholder consultation, 17. Green marketing, 18. Project performance).

The Social Carbon indicators were assessed through application of SOCIALCARBON Standard – version 5.0 and “Brazilian Red Ceramic factories Indicators” – version 1.1.

4.2 Safeguards

4.2.1 No Net Harm

The burning of the biomasses emits particulate material and CO₂ identified as negative impact. This also occurs when using fossil fuel. Nevertheless, as they are renewable biomasses, they have carbon neutral lifecycle.

All ashes resulting from the burning are donated to the employees as could be observed during the interviews performed and pictures provided.

Regarding social contribution, the SOCIALCARBON standard measures the positive or negative impacts social and environmentally.

Thus, the negative impacts caused by the project activity are being mitigated.

4.2.2 Local Stakeholder Consultation

The formal local stakeholder consultation was carried out during the validation of the project under VCS. Regarding communication with stakeholders, the project participant has a good relationship with local community and has open channels in order to receive comments from local stakeholders. Thus, the project activity has a stakeholder communication access in place and working. There were no comments regarding the project activity during the period. However frequently, stakeholders, especially from community use the informal channel directly with company's owner, in order to do their requests. No comments were observed during the monitored period.

4.2.3 AFOLU-Specific Safeguards

Not applicable as it does not comprehend an AFOLU project.

4.3 Accuracy of GHG Emission Reduction and Removal Calculations

- the approved CDM methodology AMS-I.E – Switch from non-renewable biomass for thermal applications by the user – version 07.0 is applied to the project activity. GHG emission reduction is calculated as baseline emissions;
- project emissions are only applicable in case biomass residues are transported over a distance of more than 200km. The demonstration has been carried out in the ER calculations spreadsheet;

- leakage sources are accounted for this project type, in accordance with the applied methodology and “General guidance on leakage in biomass project activities”, in case the following is observed:
 - o if there is transference of equipment;
 - o in case there are production of renewable biomass
 - o in case of competing use of biomass residues
 - o the amount of biomasses to provide thermal energy for the project activity represents a non-representative quantity of these kind of biomasses, which avoids the possibility of leakage;
 - o the project is expected to decrease the use of non-renewable biomass by similar users, especially due to the incentive of carbon credits;
- all methods and formulas used in the calculations of emission reductions have been followed in accordance to the applied methodology and monitoring plan of the validated at VCS-PD;
- all monitored data is traceable.

Fixed parameters (as per Section 4.1 of VCS-PD):

- $EF_{\text{projected fossil fuel}}$ – Emission factor for the substitution of non-renewable woody biomass by similar consumers: 81.6 tCO₂/TJ;
- ρ_{wood} – Specific gravity of non-renewable wood: 0.67 ton/m³;
- BF_y – Baseline consumption of non-renewable biomass per tons of ceramic units produced in year y:
 - Telha Forte Ceramic:
 - Paulista kiln: 0.62 ton of wood / tonnes of ceramic fired
 - Mobile Kiln: 0.46 ton of wood / tonnes of ceramic fired
 - Cenol Ceramic: For all Paulista Kilns: 0.64 ton of wood / tonnes of ceramic fired
- $EF_{\text{CO}_2, f}$ – Default CO₂ emission factor for freight transportation activity f : 129 gCO₂/t.km for heavy vehicles and 245 gCO₂/t.km for light vehicles

Monitored parameters:

- PR_y – Tonnes of ceramic devices (refer to Section 4.2 of the MR);
- $Q_{\text{renbiomass}}$ – Amount of renewable biomass utilized (refer to Section 4.2 of the MR);
- Origin of Renewable Biomass – all biomasses used at the project activity are renewable and from a legalized source^{16/};

- Leakage of non-renewable biomass – Leakage resulted from the non-renewable biomass: 0 tCO₂e;
- $f_{NRB,y}$ – Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable biomass using survey methods or government data or approved default country specific fraction of non-renewable biomass values available on the CDM website: After the CAR 03 raised and duly closed (refer to appendix III below) the applied value is equal to 93.84% (as per Section 4.2 of MR).
- Renewable biomass surplus – Amount of renewable biomass available. Annually it is monitored whether new biomass types are included. Ex-ante information on available biomass is used for determining whether leakage was applicable for the currently applied biomass, which is in accordance with current version of the PDD and applicable General guidance on leakage in biomass project activities^{/28/}. In case new biomass types are consumed, leakage assessment will be conducted. (refer to Sections 4.2 and 5.3 of the MR);
- $D_{f,m}$: Return trip distance between the origin and destination of freight transportation activity f in monitoring period m (refer to Section 4.2 of the MR);
- $FR_{f,m}$: Total mass of freight transported in freight transportation activity f in monitoring period m (refer to Section 4.2 of the MR)
- $NCV_{biomass}$: Net Calorific Value of non-renewable woody biomass that is substituted – 0.015 TJ/tonne of wood (as per applied methodology, the NCV from wood is a default value)

The emission reduction spreadsheet is transparent, traceable and correct, with no manual transposition errors.

Baseline emissions (BE_y)

The baseline emissions are calculated as follows:

$$BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil_fuel}$$

Where:

- BE_y : Baseline emissions during the year y;
- B_y : Quantity of woody biomass that is substituted or displaced;
- $f_{NRB,y}$: 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;
- $EF_{projected_fossil_fuel}$: Emission factor for the projected fossil fuel consumption in the baseline.

The calculation of $f_{NRB,y}$ has been determined as follows as per TOOL30 v.1 (applied version in the VCS-PD)

The fraction of woody biomass used in the absence of the project activity in year y is essentially captured in the equation below:

$$f_{NRB} = \frac{NRB}{NRB + RB}$$

Where:

- f_{NRB} Fraction of non-renewable biomass (fraction or %)
- NRB Non-renewable biomass (t/yr)
- RB Demonstrably renewable biomass (t/yr)

The parameter NRB has been calculated as follows

$$NRB = H - RB$$

Where:

- H - Total annual consumption of wood in the absence of the project activity in the country/region/project area. The value of this parameter is duly available in public sources^{/29-1/}
- RB - Demonstrably renewable biomass (t/yr)

The parameter RB has been calculated as follows

$$RB = \sum (MAI_{forest,i} \times (F_{forest,i} - P_{forest,i})) + \sum (MAI_{other,i} \times (F_{other,i} - P_{other,i}))$$

where ^{/29/}

- $MAI_{forest,i}$: Mean Annual Increment of woody biomass growth per hectare in subcategory i of forest areas (t/ha/yr)
- $MAI_{other,i}$: Mean Annual Increment of woody biomass growth per hectare in subcategory i of other wooded land areas (t/ha/yr)
- $F_{forest,i}$: Extent of forest in sub-category i (há)
- $F_{other,i}$: Extent of other wooded land in sub-category i (ha)
- $P_{forest,i}$: Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (ha)
- $P_{other,i}$: Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within other wooded land areas (ha)

The calculation of the $f_{NRB,y}$ has been carried out in accordance with applicable version of TOOL30, as required by VCS-PD. The calculation can be observed in the ER calculations tab $f_{NRB,y}$.

So, $BE_y = 41,118 \text{ tCO}_2\text{e}$.

Project emissions (PE_y)

Project emissions due to transportation are applied as follows

$$PE_{TR,m} = \sum_f D_{f,m} \cdot FR_{f,m} \cdot EF_{CO_2,f} \cdot 10^{-6}$$

Where:

$PE_{TR,m}$	=	Project emissions from road transportation of freight monitoring period m (t CO ₂)
$D_{f,m}$	=	Return trip road distance between the origin and destination of freight transportation activity f in monitoring period m (km)
$FR_{f,m}$	=	Total mass of freight transported in freight transportation activity f in monitoring period m (t)
$EF_{CO_2,f}$	=	Default CO ₂ emission factor for freight transportation activity f (g CO ₂ / t km)
f	=	Freight transportation activities conducted in the project activity in monitoring period m

Thus, **PE_y = 1,002 tCO₂e**

Leakage emissions (LE_y)

Monitoring using the latest available data^{11/} has been carried out and it could be evidenced that there is surplus of the biomass types in the geographic region where the project activity belongs to. Therefore no leakage is applied.

Thus, **LE_y = 0 tCO₂e**

Emission Reductions

Therefore, according to the applied methodology, ER_y are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where:

ER _y :	Emission reductions in year y ;
BE _y :	Baseline reductions in year y ;
PE _y :	Project reductions in year y ;
1) LE _y :	Leakage reductions in year y .
2)	

Thus, ER_y = BE_y. So, **ER_y = 40,116 tCO₂e**.

4.4 Quality of Evidence to Determine GHG Emission Reductions and Removals

- records were submitted by the project proponent as evidences to determine emission reduction;
- the records, data and information provided were found valid for the current verification period. The documents were verified during site visit and when possible, were checked directly from its source;
- interviews were performed during site visit with involved personnel and PP's representatives;
- the GHG emission reduction calculations were check step by step with PP's representatives;
- the quality of evidences was found of adequate level by the verification team to ensure an accurate quantification of the emission reductions.

4.5 Non-Permanence Risk Analysis

Not applicable for this project type.

4.6 SOCIALCARBON Results

4.6.1 Social Resource

Indicator	1. Diversity														
Situation	<table><tr><th>Excluded social groups</th><th>Number of workers</th></tr><tr><td>Women employees</td><td>6</td></tr><tr><td>Senior employees</td><td>11</td></tr><tr><td>Disabled employees</td><td>4</td></tr><tr><td>Illiterate</td><td>9</td></tr></table>					Excluded social groups	Number of workers	Women employees	6	Senior employees	11	Disabled employees	4	Illiterate	9
	Excluded social groups	Number of workers													
	Women employees	6													
	Senior employees	11													
	Disabled employees	4													
	Illiterate	9													
10% of the 224 ceramic factory employees are from excluded social groups.															
There are currently no employees at the factory from minority groups and there are no plans to hire minorities.	There are currently no employees from minority groups, but the factory has made plans to hire minorities.	Less than 15% of employees belong to a minority group.	Between 15 ≤ 30% of employees are from minority groups.	More than 30% of employees are from minority groups.	In addition to more than 30% of employees being minorities, the factory presents initiatives or combat forms of discrimination.										
Score	3 (three)														

Justification	The ceramic has currently 10% of employment from excluded social groups and has no intention to improve at this moment.
Evidence	Interviews performed with ceramic representatives and human resources documents.

Indicator	2. Community development
Situation	- <i>Cenol and Telha Forte</i> factories make constant donations of bricks, money, medication, but also, surgery and electric bills payments. During the current period, the ceramic factories made donations of 755 food staples to the community and lent out equipment, provided manpower and construction material to a wall construction for a community member. Also, the factories have donated to <i>Gente Livre</i>, a civil society which is a local recovery center that offers lectures on prevention and awareness about drugs, moreover, has an inpatient detox program. <i>Gente Livre</i> is not only concerned with the patient's detoxification but also with the rehabilitation and insertion of the patient in the labor market, providing a professional training course and follow-up. Therefore, <i>Cenol and Telha forte</i> have established a partnership between the ceramics factories and <i>Gente Livre</i>. In addition, in order to encourage sportive practices for the local community, the factories donated uniforms, provided snacks and financial assistance to the project called <i>Associação de Capoeira Raízes de Angola</i> since 2014. The ceramic factories, also, have offered financial support to the syndicate and AMBU - <i>Associação de moradores do Bairro Umarizal</i>.

The factory has no initiatives/ activities planned that benefit the local community.	The factory responds to occasional (not continuous) requests for assistance.	The factory supports community members or civil society organizations: - Regularly: one per month; OR - Significant: at least 10 different parties were benefited.	In addition to scenario 3, the factory lends out equipment, space and/or provides manpower for activities that benefit the local community.	The factory is formally involved in the development and implementation of social and/or environmental projects in partnership with public entities and/or civil society organizations.	In addition to scenario 5, the factory has formalized planning in order to maximize their contribution to local community development, through survey with the community, establishing new
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					partnerships, etc.
Score	4 (four)				
Justification	It was verified by the performed interviews and dotation receipts that the ceramic support the cited organizations but have no forecasted further improvement.				
Evidence	Pictures, receipts and interviews performed during site visit.				

Indicator	3. Employee satisfaction surveys				
Situation	The ceramics factories use suggestion boxes to evaluate employees' satisfaction. However, due to COVID 19 pandemic, the suggestion boxes have been removed to avoid spreading the disease. Eventually, whenever it is possible, the factories will use the suggestion box again. In the meantime, the suggestions and objections, eventually, are discussed in informal conversation with the staff then analyzed by the managers.				
Lack of a consultation system for employee feedback.	There are attempts to implement an employee consultation system, but it is not being properly utilized. Example: There is a suggestion box, but employees do not use it.	The system for employee consultation is being utilized but is limited to a suggestion box.	In addition to scenario 3, the factory has implemented or is currently implementing one or more suggestions made by employees.	The factory promotes periodic satisfaction surveys among employees. Example: monthly meetings, book for documenting information, etc.	In addition to scenario 5, the factory has stipulated targets and timelines for solutions to employee complains.
Score	1 (one)				
Justification	A suggestion box is not currently used but suggestions from employees are taken into account. The suggestions and complaints are taken to the manager's evaluation.				
Evidence	Interviews and site visit.				

4.6.2 Human Resource

Indicator	4. Additional employee benefits
Situation	The company offers additional benefits, such as: - Food staples are offered every month to all workers;

- Celebration parties at the end of the year, on employees' birthdays, and other events the company holds; - End-of-the-Year gifts; - Food donation during Easter; - Daily breakfast; - Medication and medical appointments are offered to employees to treat their diseases; - Facilitated payment on construction material; - Biweekly commissions for production; and - To combat the spread of COVID-19, donation of facial masks and hand sanitizer.					
The factory offers no additional benefits to employees.	Some employees receive an additional benefit.	All employees receive sporadic additional benefits, independent of frequency.	All employees receive an additional benefit monthly.	All employees receive more than one additional benefit monthly.	All employees receive more than one additional benefit monthly and there are also award programs based on merit.
Score	6 (six)				
Justification	It was verified by the performed interviews with employees that the ceramic has implemented benefits to all employees as well as award programs				
Evidence	Interviews and site visit.				

Indicator	5. Health and safety practices
Situation	The company offers all personal protective equipment necessary for the workers to carry on their activities with safety. There is an internal registered control of the IPEs' usage and return. The safety and health technician, Rosângela Queiroz, is responsible for monitoring the IPEs usage daily and writes a weekly report. There are also regular meetings to discuss labor health and safety that include awareness on IPEs usage, first aid, firefighting training, and notions about environmental risks in the labour workplace. Still, during the pandemic, this practice continues in small groups. In addition, the factories, to combat the spread of COVID-19, have donated reusable face masks and offered hand sanitizer to employees. Moreover, the ceramic factories have

provided a safety practices guide to increase employees' knowledge about the disease and to preserve the employees' health. The reduction of physical and mental health risks not only enables better working conditions but also contributes to continuous improvement of production methods. Health and safety are used as a strategy to increase corporate competitiveness in the market^[1]. Environmental Risk Prevention Program (PPRA) and, Medical Control in Occupational Health Program (PCMSO), and Internal Commission for Accident Prevention (CIPA) exist, Internal Commission for Accident Prevention was not conducted during 2021 due to a municipality decreed prohibid. Also, the ceramic factory holds weekly training on labor health and safety, such as lectures to create awareness and to prevent alcohol abuse, drug use, buccal hygiene, and STIs. Additionally, the factories have organized Pink October and Blue November campaigns for all employees. Also, there were attempts to provide vaccine shots for the employees against common diseases in the region. Nevertheless, due to the covid 19 pandemic and long travel distance was not possible to arrange the public health workers' transport to the ceramics factories. Also, before the outbreak of COVID-19, the ceramic factories used to conduct Internal Commission for Accident Prevention (CIPA) and weekly training on labor health and safety, such as lectures to create awareness and to prevent alcohol abuse, drug use, buccal hygiene, and STIs. However, attempting reducing the infection risk, the government has prohibited such practices in person¹.					
There is no control of PPE distribution. None of the health and safety programs required by law are being implemented.	PPE distribution is being controlled OR there is at least one health and safety program required by law being implemented	The factory meets all legal requirements.	The factory meets all legal requirements and: (a) penalizes employees who do not properly use the PPE and/or (b) has signs encouraging the use of PPE in the factory and/or (c) The factory promotes lectures and events	In addition to scenario 4, the factory contracts or has a technical professional or safety engineer on staff to ensure best practices in the company.	In addition to scenario 5, the factory develops complementary programs such as PPR, PPRPS and PCA; and/or The factory encourages physical activity or conducts activities for disease prevention.

¹ Available at: <http://www.planalto.gov.br/ccivil_03/_ato2019-2022/2020/mpv/mpv927.htm> . Last visited in March, 21th 2022.

			addressing issues related to health and safety in the workplace.		
Score	6 (six)				
Justification	It was verified by the performed interviews and by the presented pictures that the ceramic promotes CIPA meetings where several subjects can be discussed and where lectures are presented. In addition, the PCMSO and PPRA of the company were presented to the verification team. Moreover, additional health programs are also provided to the employees.				
Evidence	Pictures, interviews, PCMSO, PPRA.				

Indicator	6. Training and capacity building programs				
Situation	The Cenol and Telha forte ceramics presents training courses to individual employees, but not all employees: - “Occupational medicine” remote course to health and security department employees, Reginaldo Lopes da Silva and Rosângela Siqueira Queiroz;				
The company has not invested in lectures nor professional training courses for staff.	The factory organized occasional lectures.	Training courses were offered to individual employees, but not to all employees.	In addition to item 3, the individual employees who were contemplated by the training courses replicate the knowledge via lectures to other employees; and/or Regular lectures were offered to employees (at least two per semester).	In addition to scenario 4, the factory has an internal campaign to encourage employees to complete their high school education; and/or The factory promotes a literacy program for youth and adults.	In addition to scenario 5, the Ceramic factory has established a strategic plan regarding training and capacity building programs.
Score	3 (three)				
Justification	It was verified by the performed interviews that the ceramic provides courses to some employees. Moreover, employees certificates were provided.				

Evidence	Interviews and certificates
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4.6.3 Financial Resource

Indicator	7. Biomass supply					
Situation	Cenol and Telha Forte’s ceramics use two types of renewable biomass, Sawdust and Açai Pits, in which all of the fuel comes from agro-industrial waste. Moreover, the factory has great control of the source and the amount of renewable biomass used.					
The factory has no control of the source and amount of biomass used; and/or the factory is using non-renewable fuel in the production process.	The factory only has partial control of the source and amount of biomass used.	The factory has total control of the source and amount of renewable biomass used, however 100% of the biomass comes from renewable wood.	The factory has total control of the source and amount of renewable biomass used and less than 50% of the fuel is coming from agro-industrial waste.	The factory has total control of the source and amount of renewable biomass used and more than 50% of the fuel is coming from agro-industrial waste.	The factory has total control of the source and amount of renewable biomass used and 100% of the fuel is coming from agro-industrial waste.	
Score	6 (six)					
Justification	It was verified by the performed interviews that the ceramic has total control of the suppliers and accounts for 100% of the used biomass that comes from agro-industrial waste.					
Evidence	Records of purchase of biomass and report of daily production of ceramic device.					

Indicator	8. Planning and control:					
Situation	The ceramic factories have organized controls of the income received from carbon credit sales through spreadsheets that demonstrate the entry of carbon credit revenues as well as the destination for proceeds. However, there is no future planning for investments in the factories or the community.					
The factory has no organized controls of the income received from carbon credit sales nor the destination for proceeds.	The factory has partial control of the income received from carbon credit sales and the destination for proceeds.	The factory has organized controls of the income received from carbon credit sales, but control of the destination for proceeds is partial.	The factory has organized controls of the income received from carbon credit sales, as well as of the destination for proceeds. However, the factory presents	The factory has organized controls of the income received from carbon credit sales, as well as of the destination for proceeds. However, the factory presents	The factory has organized controls of the income received from carbon credit sales, as well as of the destination for proceeds. The factory presents satisfactory future planning	

			no future planning.	incomplete future planning.	(timeline, budget, responsible involved and benefits).
Score	4 (four)				
Justification	The ceramic has records of the income received from carbon credit sales but has no plans in future investment.				
Evidence	Receipts of payment of the VCUs and interviews to the representatives.				

Indicator	9. Carbon credit investments				
Situation	100% of the income generated by carbon credit sales was invested in the factories and community development.				
The income generated by carbon credit sales was not invested in the factory nor in the community, or there are no organized controls of the allocation of proceeds.	Less than 20% of the income generated by carbon credit sales was invested the factory or in the community development.	Between 20 and 40% of the income generated by carbon credit sales was invested the factory or in the community development.	Between 40 and 60% of the income generated by carbon credit sales was invested the factory or in the community development.	Between 60 and 80% of the income generated by carbon credit sales was invested the factory or in the community development.	Between 80 and 100% of the income generated by carbon credit sales was invested the factory or in the community development.
Score	6 (six)				
Justification	The ceramic has records of the income received from carbon credit sales. It only has not organized the amount that goes to each beneficiary. However the amount received is invested either in the factory as in the community.				
Evidence	Receipts of payment of the VCUs and spreadsheet with total received and total invested.				

4.6.4 Natural Resource

Indicator	10. Environmental management
Situation	- Cenol and Telha Forte Ceramics present the following nature conservation initiatives to reduce the main environmental impacts: - Waste: selective collection campaigns, reuse of scrap in the facilities of the factories, and reuse of oil residues in the productive process; - Energy: use of LED lamps and translucent tiles favoring a well light environment; and - Nature conservation: degraded area recovery.

There are no environmental management initiatives.	There are up to two specific initiatives to prevent/reduce the main environmental impacts caused by the ceramic factory.	There are more than two initiatives to prevent / reduce the main environmental impacts caused by ceramic factory.	In addition the scenario 3, the factory is structuring an environmental management system in the company.	The factory has implemented a formal environmental management system.	The factory's environmental management system has been certified by a third party.
Score	3 (three)				
Justification	It was evidenced by the performed interviews with ceramic representatives and at the site visit that the ceramic has implemented some environmental management measures.				
Evidence	Interviews and site visit.				

Indicator	11. Brazilian environmental legislation
Situation	The ceramic factory possess all the mandatory licenses: Cenol - Operating License (LO): nº 010/2020 emitted by the Municipality Institute of Environment (SEMMA) valid until February 07th, 2026; - Clay Extraction License: nº 046/2020 emitted by the Municipality Institute of Environment (SEMMA) valid until December 01st, 2024; - Rural Activity License (LAR): nº 015/2019 emitted by the Municipality Institute of Environment (SEMMA) valid until August 30th, 2021; - Water Grant: nº 2725/2019 the factory has a dispensation statement to water grant. The document was emitted by the Municipality Institute of Environment (SEMMA) in June 2018 valid until October 27th, 2024; - Federal Technical Registry (CTF): Regular. The CTF is a document emitted by the Brazilian Institute of Environment and the Natural Renewable Resources valid until May, 09th 2022. Telha Forte - Operating License (LO): nº 29/2021 emitted by the Municipality Institute of Environment (SEMMA) valid until June 28th, 2024; - Water Grant: nº 3034/2021 the factory has a dispensation statement to water grant. The document was emitted by the Municipality Institute of Environment (SEMMA) in July, 2018 valid until January 03th, 2026;

	- Federal Technical Registry (CTF): Regular. The CTF is a document emitted by the Brazilian Institute of Environment and the Natural Renewable Resources valid until May, 09th 2022.				
The factory does not possess any of the following: -operating license -license for clay extraction -water grant - federal technical registry	The factory only posses two of the following: -operating license -license for clay extraction -water grant - federal technical registry	The factory only posses three of the following: -operating license -license for clay extraction -water grant - federal technical registry	The factory posses all of the following: -operating license -license for clay extraction -water grant - federal technical registry However, they do not meet all the conditions established by them.	All licenses are up to date and all conditions established by them are being met.	In addition to the previous scenario, the factory collaborates with public administration and/or civil society organizations for cooperation with environmental projects
Score	5 (five)				
Justification	All licenses are up to date and all conformity conditions to require their renovations are in place.				
Evidence	Licenses.				

Indicator	12. Voluntary environmental initiatives				
Situation	During the period analyzed the factory performed some voluntaries environmental initiatives such as: - Selective collection campaigns; - Signs are displayed around the Ceramic facility reminding of the environmental conservation importance; - Reuse of residues, as scrap, oil and broken bricks, in the production process; - Broken tiles or bricks are reutilized to repair potholes on roads				
The factory is not involved in voluntary environmental initiatives.	The factory has implemented only one internal environmental initiative. Example: Planting ten tree saplings on factory grounds.	The factory has implemented more than one internal initiative or is showing continuity for an existing Initiative. Example:	The factory has implemented more than one initiative or ongoing initiative whose benefits extend to workers families.	In addition to the previous scenario, the benefits of the initiatives also extend to community members.	In addition to the previous scenario, the factory promotes voluntary environmental initiatives with civil society organizations

		Periodic planting of saplings on factory grounds.			and/or public administration.
Score	5 (five)				
Justification	It was evidenced by the performed interviews with ceramic representatives and pictures that the company has implemented the mentioned systems.				
Evidence	Pictures, site visit and interviews.				

4.6.5 Biodiversity/Technology Resource

Indicator	13. Technological advances to improve efficiency of the production process				
Situation	The factory meets all of the characteristics described: - Brick drying methods: the factories possess in each ceramic factory a dryer that recycles the heat from kilns; - Kiln temperature control: the ceramic controls the temperature of the kilns in the firing process using an electronic thermometer on the kilns and by using temperature monitoring spreadsheets; - Efficiency of kilns: the factory uses intermittent kilns which are medium efficiency; - Kiln feeds: the factory utilizes semi-automatic equipment to feeds kilns; - Production: Cenol and Telha Forte factories record production at stages Maromba (clay mixture), Enforna (bricks that have entered the kiln), and Desenforna (fired bricks) using a notebook and an excel spreadsheet. - Infrastructure: improvements such as the renovation of toilets, shed expansion, and purchase of new Maromba equipment which enhances productivity combined with workers' well-being.				
The factory does not meet any of the characteristics described.	The factory meets one of the characteristics described.	The factory meets 2-3 of the characteristics described.	The factory meets 4 of the characteristics described.	The factory meets all of the characteristics described.	In addition to scenario 5, the factory has organized planning to improve general conditions of the production process.
Score	5 (five)				
Justification	It was evidenced by the performed interviews with ceramic representatives and during the site visit that the ceramic has several equipment that enables an improvement in the efficiency of the production process.				

Evidence	Interviews and site visit.					
Indicator	14. Technological advances to improve the general conditions of the working environment					
Situation	The factory meets all the characteristics: - Cleanliness: there is no excess of dust and debris around the ceramics factories; - Noise: Noise control programs according to legislation; - Heat: the ceramic factories use equipment to reduce employees’ exposure to furnace heat, such as semi-automatic feeds in kilns, temperature monitoring spreadsheets, and a ventilator to make the environment work better; - Lighting: the factories use translucent tiles and LED lamps to improve working environment; and - Appropriate signage: the factories use signing according to the applicable norms.					
The factory does not meet any of the characteristics described.	The factory meets one of the characteristics described.	The factory meets 2-3 of the characteristics described.	The factory meets 4 of the characteristics described.	The factory meets all of the characteristics described.	In addition to scenario 5, the factory has organized planning to improve general conditions of the working environment.	
Score	5 (five)					
Justification	It was evidenced by the performed interviews with ceramic employees and during the site visit that the ceramic has intention of hiring a professional for improving the working conditions at the ceramics.					
Evidence	Interviews and site visit.					

Indicator	15. Product quality					
Situation	The ceramics have no certification to evaluate its o products' quality.					
No efforts were made to analyze or improve product quality.	Samples of some products were evaluated by quality tests.	Samples of all products were evaluated by quality tests.	Some of the products have quality certification.	All products have quality certification.	In addition to scenario 5, the factory has an	

					in-house quality lab.
Score	1 (one)				
Justification	Analysis reports have been provided				
Evidence	Interviews and site visit.				

4.6.6 Carbon Resource

Indicator	16. Stakeholder consultation				
Situation	In a measure to avoid spreading the COVID-19, no stakeholder consultation took place since the pandemic. Yet, Cenol and Telha Forte ceramics conducted an informal stakeholder consultation informing the co-benefits implemented due to the carbon credits sale to employees and members of the local community positively affected by the carbon project, such as personnel from “Gente Livre” and “Raízes de Angola”. The employees and the community members demonstrate that they are pleased with the project, and no negative comments were made.				
During the time period analyzed, the factory did not conduct a stakeholder consultation.	During the time period analyzed, the factory conducted an informal (no record) stakeholder consultation.	During the time period analyzed, the factory conducted a formal (with records) stakeholder consultation; however negative comments were made regarding the project.	During the time period analyzed, the factory conducted a formal (with records) stakeholder consultation, and no negative comments were made regarding the project.	As well as the previous scenario, there are continuous means of communication with stakeholders.	As well as the previous scenario, the next consultation is being planned together with stakeholders.
Score	2 (two)				
Justification	No evidence has been provided				
Evidence	Interviews.				

Indicator	17. Green marketing
Situation	The factories make sure to display their environmental concerns by adding the Social Carbon logo on their business cards, walls on the ceramic factory, billboards in the municipality, and on employees' uniforms. Also, the manager has seen positive results from the green marketing strategy since it has amplified the factories' advertisements regarding socio-environmental practices.

The factory does not have marketing strategies based on their environmental practices.	The factory markets their environmental practices only using one means of communication. Example: magazine advertisement.	The factory markets their environmental practices using more than one means of communication. Example: magazine advertisement and billboard.	The factory has an established green marketing strategy, but still has not seen positive results.	The factory has an established green marketing strategy and sees positive results.	As well as the previous scenario, the factory has plans to invest in Green marketing.
Score	5 (five)				
Justification	Green marketing evidences have been presented to the verification team.				
Evidence	Interviews.				

Indicator	18. Project performance:				
Situation	The ceramic factories showed satisfaction with the carbon project and reported that the project does not only help the ceramic itself but the local community too. Also, developing the carbon project stimulated other ceramic factories in the region to adopt too.				
The factory is very dissatisfied and threatens to abandon the carbon project.	The factory is dissatisfied, but does not plan to abandon the carbon project.	The factory is indifferent about the carbon project.	The factory believes the carbon project is something positive but has complaints.	The factory is very satisfied with the carbon project.	In addition to the previous scenario, the factory considers the carbon project a competitive advantage for their business and encourages other factories to adopt similar practices.
Score	6 (six)				
Justification	The project representative is satisfied with the carbon project due to the organization generated in the factory, and he sees advantages in the business.				
Evidence	Interviews.				

5 ANALYSIS OF SOCIALCARBON RESULTS

5.1 Current Performance

Resource	Critical	Satisfactory	Sustainable	Average Score	Performance
Social	33.3%	66.7%	0.0%	2.7	Critical
Human	0.0%	33.3%	66.7%	5.0	Sustainable
Financial	0.0%	33.3%	66.7%	5.3	Sustainable
Natural	0.0%	33.3%	66.7%	4.3	Satisfactory
Biodiversity/Tech	33.3%	0.0%	66.7%	3.7	Satisfactory
Carbon	33.3%	0.0%	66.7%	4.3	Satisfactory

5.2 Historical Performance

Social	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
Score	2.3	2.7	2.1	3.1	3.3	3.0	2.7
Historic Analysis: For this monitoring period, the ceramic reduces its performance when compared to the previous one especially due to the lack of employees satisfaction surveys. The companies expect to return with their employees surveys when the Pandemic reduces its strength.							
Human	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
Score	1.7	2.5	3.3	5.0	4.7	4.7	5.0
Historic Analysis: during this monitoring period, the ceramic increased its score. The factory offered a lot of benefits and training courses for the employees, so they could improve their skills and performance.							
Financial	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
Score	3.5	3.8	3.7	4.7	5.3	5.3	5.3
Historic Analysis: This resource had a sustainable performance in this current period. The ceramic factory had complete control over the income and the investments made using the money from the carbon credit sales. Besides, the ceramics invested 100% of the total income from the carbon credits in improvements over the factory.							

Natural	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
Score	2.9	3.5	3.7	4.7	4.0	4.3	4.3

Historic Analysis: during this period, the ceramic maintained its score in this resource. Although the Ceramic factory have all the licenses required by the Brazilian legislation, the factory doesn't have an environmental management or voluntary initiatives, besides selective collection.

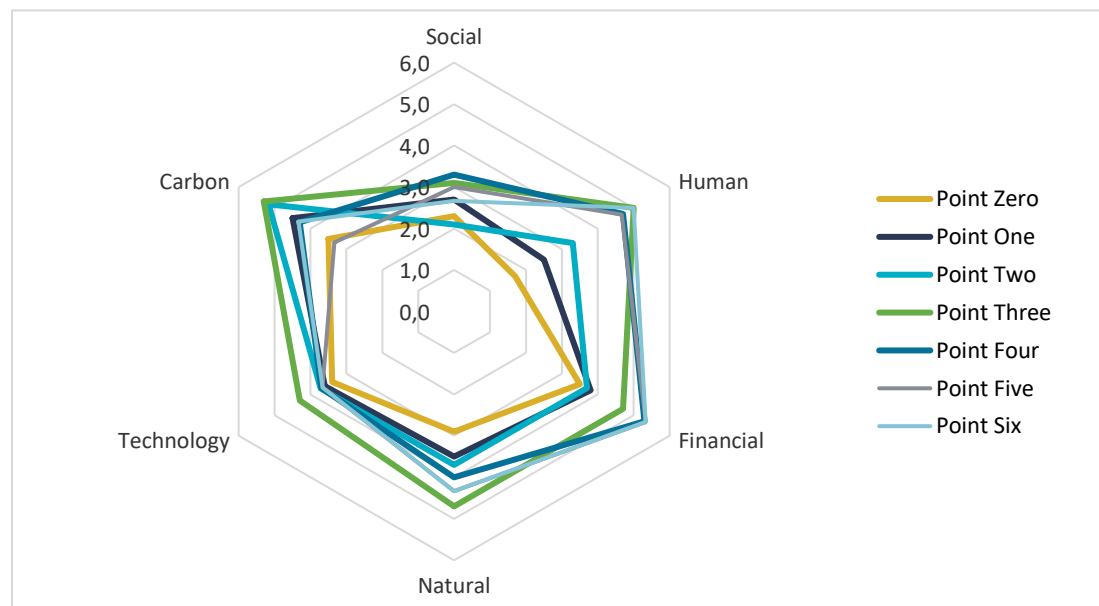
Biodiversity	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
Score	3.4	3.6	3.7	4.3	3.7	3.7	3.7

Historic Analysis: This resource maintained its score during this period. The lack of quality control of the products contributed to not increasing this score.

Carbon	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
Score	3.5	4.5	5.2	5.3	4.3	3.3	4.3

Historic Analysis: Cenol and Telha forte have increased the score from the previous report, especially due to the positive results from the green marketing plan which includes more than 3 means of communication. Also, there was an informal stakeholder consultation during this monitoring period. In addition, concerning the project performance indicator, the ceramic owner is pleased with the carbon project since it gave business advantage and increased awareness of socioenvironmental practices.

5.3 Performance Hexagon



6 VERIFICATION CONCLUSION

ESPL, contracted by Sustainable Carbon – Projetos Ambientais Ltda., has performed the independent verification of the emission reductions of the VCS project “Cenol and Telha Forte Ceramics Switching Fuel Project”, with VCS Project ID 54, for the period from 01/01/2021 to 31/12/2021 (both days included).

Sustainable Carbon – Projetos Ambientais Ltda. is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

ESPL commenced the verification based on the baseline and monitoring methodology AMS-I.E – version 07.0, the monitoring plan contained in the VCS-PD and draft Monitoring Report.

ESPL's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

The verification team confirms that:

- the project activity was found completely implemented as per the description given in the registered VCS-PD; and
- the actual operation conforms to the description in the VCS-PD.

Thus, the GHG emissions reductions reported for the project activity for the period above mentioned are fairly stated in the final version of the Monitoring Report. The GHG emission reductions were calculated correctly based on the approved baseline and monitoring methodology AMS-I.E – version 07.0 and the monitoring plan contained in the VCS-PD.

Therefore, ESPL is able to certify that the emission reductions from the VCS project “Cenol and Telha Forte Ceramics Switching Fuel Project”.

In addition, as a result of the SOCIALCARBON verification, the verifier confirms that:

- the indicators and reports are in accordance with SOCIALCARBON Standard and “Brazilian Red Ceramic factories Indicators” – version 1.1;
- the project is being periodically monitored and Point Zero is being used as the baseline;
- there are perspectives of improvement and the efforts to seek for this improvement are being done. However, a decrease in the performance have been verified in the Social resources for this monitoring period.
- the report has been validated by an accredited entity, an virtual on-site inspection has been carried out and this verification report has been issued.

In addition, the verifier confirms that the indicators for “Brazilian Red Ceramic factories Indicators” – version 1.1 are accurate and the calculations are correct. The SOCIALCARBON template and SOCIALCARBON Guidelines were correctly used.

ESPL herewith states that the project is in line with SOCIALCARBON requirements. All other applicable criteria for the verification are in accordance with applicable rules and requirement.

The characterization of the Point SIX for the project as “SATISFACTORY”, as described in the referenced documents, is accurate.

Verification period: From 01/01/2021 to 31/12/2021

SOCIALCARBON verification period: From 01/01/2021 to 31/12/2021

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

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2021	41,118	1,002	0	40,116
Total	41,118	1,002	0	40,116

Year	Net GHG ERs estimated in PD (tCO ₂ e)	Net GHG ERs achieved during this MP (tCO ₂ e)	% difference
Total	31,878	40,116	26

When comparing to the estimated values in the VCS-PD, the ERs achieved are 26% higher. This result is mainly due to two factors:

1. The factor f_{NRB} achieved during this period was 18 % higher than the factor applied in the ex-ante calculations. This factor is monitored ex-post based on public available data, and therefore not in control of PP. The verification team considers that the calculation has been carried out in accordance with applicable version of TOOL30.
2. An increase of 10% in the production of ceramic pieces when comparing to the estimated values. It is important to point out that this estimate in the PD took into account the 10 years of the previous crediting period. If only the last monitoring period is to be considered (evidences checked at file VCS PD_Calculation_Cenol and Telha Forte_v.8, which refers to estimation for this crediting period used during the renewal process) the amount of pieces

produced in tonnes during this monitoring period is even smaller than the previous monitoring period. It is important to point out that this value depends on market demand and therefore variations can occur. The verification team concludes that the amount of pieces produced is correctly set during this monitoring period as all information on production was duly provided to the verification team.

Therefore, although a difference in 26% of ERs has been achieved when comparing to estimated values, the higher portion depends on annually monitored parameter f_{NRB} which is based on public available data and therefore not within control of the project participants.

APPENDIX I: REFERENCES

No.	Title	References
1.	VCS Standard	V.4.3
2.	VCS Program Guide	V.4.2
3.	<u>Methodology</u> AMS-I.E – Switch from non-renewable biomass for thermal applications by the user	version 07.0
4.	SOCIALCARBON Standard	Version 5.0
5.	Brazilian Red Ceramic factories Indicators”	Version 1.1
6.	VCS-PD (Registered)	Version 08 – 20/06/2018
7.	MR – draft	version 01 – 24/02/2022
8.	MR + Social Carbon – revised / final	version 02 – 23/08/2022 version 03 – 16/09/2022 version 04 – 21/12/2022
9.	ER Spreadsheet – draft	version 1
10.	ER Spreadsheet – final	version 3
11.	Social Carbon Spreadsheet - Final	Version 2
12.	Pictures taken during the virtual on-site inspection depicting the applied technology, biomass consumed, operational procedures.	03/2022
13.	<u>Biomass</u> Records of biomass purchase from this monitoring period	2021
14.	<u>Production</u> Records of production by type of ceramic devices from this monitoring period	2021
15.	<u>Licenses</u> Cenol Ceramic - Environmental License # 46/2020 – Production of ceramic pieces – Municipality of São Miguel do Guamá. Environmental Secretariat - SEMMA - Environmental License # 02/2021 – extraction of clay – Municipality of São Miguel do Guamá. Environmental Secretariat - SEMMA - Dispense of water grant # 2725/2019 issued by Environment and Sustainability Secretariat from State of Para – SEMAS/PA. - Conformity License # 5242 – factory operation – City Hall of Sao Miguel do Guamá for the year 2021	Expire date: 01/12/2024 Expire date: 14/04/2023 Expire date: 27/10/2024 Expire date: 31/12/2021 Expire date: 30/08/2021

	- Pisciculture License # 015/2019, Issued by Municipality of São Miguel do Guamá. Environmental Secretariat - Federal Technical Register (CTF) # 27725 issued by Ministry of Environment (IBAMA/MMA) Telha Forte Ceramic - Environmental License # 29/2021 – Production of ceramic pieces – Municipality of São Miguel do Guamá. Environmental Secretariat - SEMMA - Dispense of water grant # 3034/2021 issued by Environment and Sustainability Secretariat from State of Para – SEMAS/PA. - Conformity License # 5436 – factory operation – City Hall of São Miguel do Guamá for the year 2021 - Federal Technical Register (CTF) # 27727 issued by Ministry of Environment (IBAMA/MMA)	Expire date: 09/05/2022 Expire date: 28/06/2024 Expire date: 03/01/2026 Expire date: 31/12/2021 Expire date: 09/05/2022
16.	<u>Licenses of biomass providers</u> 19. Operational license #0016/2021 of Beira Rio Indústria e Comércio de Mateiras Eirelli – Sawdust provider, issued by Santa Bárbara do Pará Cityhall. 20. Operational license # 360/2020 of Dittora Madeiras Ltda – Sawdust provider issued by Belém Cityhall	Expire date: 07/11/2022 Expire date: 12/11/2024
17.	<u>Parameter BF_v:</u> Registered VCS PD.	Version 08 – 20/06/2018
18.	<u>Information related to leakage</u> 21. IBGE. (wood fire production in state of Pará) -2009 to 2020. 22. Imazon Institute – information provided that 25% of forest residues are either burned or rubble 23. Technical article: Discarding and final destination of açaí in the Oriental Amazon – Brazil, written by Miranda, L, where it is stated that 53% of forest residues have incorrect disposal and destination	https://cidades.ibge.gov.br/brasil/pa/pesquisa/16/12705?tipo=grafico&indicador=12801 https://imazon.org.br/a-atividade-madeireira-na-amazonia-brasileira-producao-receita-e-mercados/amp/ https://www.scielo.br/j/asoc/a/xLtkfCv9jZpzyZyhbWsMwDv/?format=html
19.	<u>Social Resource:</u> - Human resources documents - New year's gifts 2021 - Pictures	2021

	- CIPA minutes - Controle_Funcionários_Menegalli (2018-2021) spreadsheet RAIS 2018 to 2021pdf	
20.	<u>Human Resource:</u> - Receipts of additional benefits to employees (breakfast, fathers day, Easter, gifts for both ceramics - Evidences of Pink October (related to Breast Cancer prevention) and Blue November (related to Prostate Cancer Prevention) events for both ceramics - Certificates of Personal Protection equipment for both ceramics - Pictures - Program of COVID-19 prevention for both ceramics - PCMSO (Program of Medical Control of Occupational Health) issued by Dr Vitor José Gonçalves Dias for both ceramics - PPRA (Program of Prevention of Environmental Risks) – issued by Jorgina José Vidal for both Ceramics	2021 2021 2021 2021 2021 2021
21.	<u>Financial Resource:</u> - Records of purchase of sawdust. - Records of purchase of açai pits - Environmental Licenses of sawdust providers (see ev. 16 above) - Report of daily production of ceramic device - Control and planning of carbon credits incomes (spreadsheet) - Receipts of payment of the VCUs	2021 for all evidences
22.	<u>Voluntary environmental initiatives</u> Solid waste management program (pictures)	2022
23.	<u>Natural Resource:</u> • Pictures <u>Licenses</u> - See ev. 15 above	-
24.	<u>Technological resource</u> - Pictures of driers, of kilns, of kiln temperature control, of semiautomatic biomass feeding equipment, and production control - Pictures of cleanliness, use of earplugs, ventilators translucent tiles and factory appropriate signage - Pictures of new toilets, Maromba Machinery and shed expansion	2021 2021 2021
25.	<u>Carbon Resource:</u> - Pictures - Evidence of public meetings (Gente Livee and Raízes de Angola) – Pictures - Evidences from green marketing – Pictures, t-shirts, receipts, company's facade, among others.	2021 2021 2021
26.	SOCIALCARBON	http://www.socialcarbon.org/
27.	IPCC publications	www.ipcc-nggip.iges.or.jp
28.	General guidance on leakage in biomass project activities” (attachment C of appendix B)	http://cdm.unfccc.int/methodologies/SSCmethodologies/AppB_SSC_AttachmentC.pdf

29.	<u>Evidences of calculation of parameter f_{NFB} in accordance with TOOL30 v.1</u> 1. Official statistics of total annual consumption of wood issued by Brazilian Geographic and Statistic Institute (Instituto Brasileiro de Geografia e Estatística - IBGE) - "Extração vegetal e Silvicultura" 2018. 2. Specific gravity of wood: According to IPCC. Mean average of all species in Tropical America. Available at 3. Values of MAI (tC/ha/y) - Mean Annual Increment of woody biomass: According to Brazilian DNA source, Third National Communication of Brazil to the United Nations Framework Convention on Climate Change. Available at: < >Volume III, page 180. Last visit: December/2022. 4. Carbon Ratio: Carbon Ratio of 47%. According to Brazilian DNA source, Third National Communication of Brazil to the United Nations Framework Convention on Climate Change. Volume III, page 240. Last visit: November 2022. 5. Forest areas - SNIF – Sistema Nacional de Informações Florestais. Os Biomas e Suas Florestas 6. Parameter $P_{forest,i}$ a. Protected areas in conservation units - 250,209,200 ha - According to Cadastro Nacional de Unidades de Conservação (CNUC).	https://cidades.ibge.gov.br/brasil/pesquisa/16/12705?ano=2018 - Last visit: December/2022. https://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf_files/GPG_LULUCF_FULL.pdf> Table 3A.1.9-2 https://antigo.mctic.gov.br/mctic/opencms/ciencia/SEPED/clima/Comunicacao_Nacional/Comunicacoes_Nacionais.html#:~:text=A%20submiss%C3%A3o%20da%20Comunica%C3%A7%C3%A3o%20Nacional,de%20feito%20estufa%20(GEE). <https://antigo.mctic.gov.br/mctic/opencms/ciencia/SEPED/clima/Comunicacao_Nacional/Comunicacoes_Nacionais.html#:~:text=A%20submiss%C3%A3o%20da%20Comunica%C3%A7%C3%A3o%20Nacional,de%20feito%20estufa%20(GEE). <https://snif.floresta.gov.br/pt-br/os-biomas-e-suas-florestas>Last visit: December/2022. https://repositorio.unb.br/bitstream/10482/37802/1/2019_
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	b. Permanent Preservation Areas (Areas de Preservação Permanente - APP) - 56,800,000 ha - According to Food and Agriculture Organization - FAO. Corresponds to extent of non-accessible area in private properties. c. Not designated public federal forests - 42,383,431 ha. d. Not designated public stadual forests - 22,187,596 ha. Available at topic b): e. Indigenous Lands - 114,883,420.2994 ha "Geoprocessamento e Mapas". (total indigenous land disconsidering delimited areas, because the latter has not been analysed by the Brazilian Justice Ministry, an therefore, have not been created and do not have their boundaries specified yet). According to National Indigenous Foundation (Fundação Nacional do Índio - FUNAI).	FernandoAlmeidaCos ta.pdf>page 46 <http://www.fao.org/3/a-az172e.pdf> page 72. topic a): <https://www.gov.br/agricultura/pt-br/assuntos/servico-florestal-brasileiro/cadastro-nacional-de-florestas-publicas/cadastro-nacional-de-florestas-publicas-atualizacao-2018> https://www.gov.br/agricultura/pt-br/assuntos/servico-florestal-brasileiro/cadastro-nacional-de-florestas-publicas/cadastro-nacional-de-florestas-publicas-atualizacao-2018 <http://www.funai.gov.br/index.php/indios-no-brasil/terras-indigenas>
30.	UNFCCC	http://cdm.unfccc.int
31.	VCS	http://www.vcs.org/

APPENDIX II: ABBREVIATIONS

Abbreviations	Full texts
BE	Baseline Emission
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CL	Clarification Request
DOE	Designated Operational Entity
DOF	Document of Forest Origin
ER	Emission Reduction
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse gas(es)
MP	Monitoring Plan
MR	Monitoring Report
PA	Project Activity
PCMSO	Program for Medical Control of Labour Health
PE	Project Emission
PP	Project Participant
PPE	Personal Protection Equipment
PPRA	Program for Prevention of Environmental Risks
QA/QC	Quality Assurance / Quality Control
SC	SOCIALCARBON
SCR	SOCIALCARBON Report
SEMAS	Secretariat of Environment of the State of Pará
SEMMA	Secretariat of Environment of Municipality of São Miguel do Guamá
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCS-PD	VCS – Project Description
VCU	Verified Carbon Unit
XLS	Emission Reduction Calculation Spread Sheet

APPENDIX III: FINDINGS

Table 1. CL from this verification

CL ID	01	Section no.	3.2	Date: 18/03/2022
Description of CL				
MR section 3.1: it has been observed in the MR, corroborated during the site visit, that Cenol Ceramic contains a total of 11 Paulista kilns currently installed. Nevertheless, in the valid version of the PDD, an amount of 13 kilns Paulista are being informed. It is not clear the reason for this change. Moreover it is not clear whether the change impacts the applicability of the methodology, additionality and/or the appropriateness of the baseline scenario.				
Project participant response				Date: 08/06/2022
The Cenol Ceramic factory has only operated with 11 out of 13 Paulista kilns in this monitoring period. This switching is due to two malfunctioned kilns that have not been operating as a result of natural damaged by the usage of the kilns. The decrease in the Paulista kilns does not impact the applicability of the methodology, nor impact the additionality, in the contrary, it makes the project more attractive, as it will have less revenue from the additional sale of bricks and tiles, expanding the necessity for carbon credits sales increase to compensate for the investment in renewable biomass. Moreover, the use of only 11 kilns does not impact the baseline scenario, as it was calculated by the efficiency of firewood consumption, in ton/thousand. Therefore, the reduction of Kilns also does not impact the adequacy of the baseline scenario. As previously addressed in the Monitoring Report section 3.2.2 Project Description Deviations.				
DOE assessment				Date: 28/06/2022
It is clear in the Monitoring report and as it has been duly evidenced during the interviews performed during the virtual site visit, that the plant Cenol operated only with 11 Paulista Kilns. This practice come since the 6 th monitoring period, started on March 2012. This information has been duly reflected in the MR, sections 3.1 and 3.2.2. No impact in additionality, methodology application, scale or monitoring plan is expected due to the decommissioning of kilns.				
The parameters continue to be monitored as per monitoring plan.				
<u>CL is closed</u>				

CL ID	02	Section no.	4.2.1	Date: 18/03/2022
Description of CL				
At Section 2.1 of the MR it is being said that the Ceramic donates the ashes for the employees. Nevertheless, its application use is not clear and no evidence has been provided in this regard.				
Project participant response				Date: 08/06/2022

The ashes usage description was added in section 2.1 of the MR. Moreover, the evidence (uso das cinzas folder) was made available to the verification team.

DOE assessment

Date: 28/06/2022

The information has been duly provided in the MR. The ashes are eventually donated to be used as fertilizer. This information has been corroborated with interviews performed during the virtual site visit.

CL is closed

CL ID	04	Section no.	4.3	Date: 18/03/2022
Description of CL				
Parameter fNRB - In the ER calculations spreadsheet, tab fNRB.y, Cell J46, it has been said that only eucalyptus and pinus have been considered as planted forests and the other species were not significant. Nevertheless, when checking the evidence provided (https://snif.florestal.gov.br/pt-br/florestas-plantadas/452-painel-interativo-1a) the other species represent close to 20% of all planted forest in states inside the Amazon				
Project participant response				Date: 08/06/2022
In order to filling the information gap, other species planted in the Amazon biome were also considered to calculate the fNRB. Thus, the value changed from 78.32% to 78.29%.				
DOE assessment				Date: 28/06/2022
The calculations are now in accordance with evidences provided. The verification team considers that the calculations are accurate.				
<u>CL is closed</u>				

CL ID	05	Section no.	4.3	Date: 18/03/2022
Description of CL				
At Section 4.2, for parameter <i>Renewable biomass surplus</i>, it is not clear why there are values from 2016 as, per the registered monitoring plan, the value shall be monitored annually.				
Project participant response				Date: 08/06/2022

According to the "General guidance on leakage in biomass project activities", the project participant shall evaluate ex ante if there is a biomass surplus in the region of the project activity, which is not utilized. If it is demonstrated (e.g., using published literature, official reports, surveys etc.) at the beginning of each crediting period that the quantity of available biomass in the region, is at least 25% larger than the quantity of biomass that is utilized including the project activity, then this source of leakage can be neglected; otherwise, this leakage shall be estimated and deducted from the emission reductions. During the monitoring period, Sustainable Carbon annually analysed if the quantity of available biomass in the region (which was determined ex ante), was at least 25% larger than the quantity of biomass that was utilized by the project activity during the monitoring period, as it was and as can be seen in Section 5.3 Leakage.

Available at:

<http://cdm.unfccc.int/methodologies/SSCmethodologies/AppB_SSC_AttachmentC.pdf>, paragraph 18.

DOE assessment

Date: 28/06/2022

As per "General guidance on leakage in biomass project activities", this leakage is to be determined based on the data available at the start of crediting period. Information has been given in section 5.3 of the MR. Nevertheless, it is still not clear how the project developer came into the conclusion that, by considering only the portion consumed by project activity, that there is a quantity of biomass in the region at least 25% larger than the quantity of biomass that is utilized including the project activity.

CL remains open

Project participant response

Date: 08/06/2022

In the project region, there is a higher amount of 25% of the biomass available in relation to the demand for the project activities as demonstrated in the Leakage section in the Monitoring Report.

DOE assessment

Date: 28/06/2022

Assessment has now been carried out for all biomass used in the project activity in accordance with applied methodologies and tools.

For forest residues, it has been observed that, according to evidences/^{11-2/}, 25% of all residues are disposed whereas the 75% are consumed. Therefore, in the ER calculations spreadsheet, tab Leakage, it could be observed that the amount of biomass available in the project region provides a surplus of around 30.87% of biomass when taking into account the amount of biomass consumed in the project region plus the amount consumed in the project activity represents. Therefore, no leakage is applicable to this biomass.

Regarding açai pits, it has been observed that, according to evidences/^{11-3/}, 53% of all residues are disposed whereas the 47% are consumed. Therefore, in the ER calculations spreadsheet, tab Leakage, it could be observed that the amount of biomass available in the project region provides a surplus of around 99.93% of biomass when taking into account the amount of biomass consumed in the project region plus the amount consumed in the project activity represents. Therefore, no leakage is applicable to this açai pits.

The assessment is now correct.

Moreover, considering that more recent information has been used for determining the surplus of wood residues, a deviation has been taken into account. The percentage of residues generated from wood stated on the PDD was not reliable nor traceable. Therefore, the information has been clarified and further evidence were provided. The deviation was requested in order to present current information and confirm that no leakage emissions are applicable to this project activity considering that there are a surplus of biomass available in the region.

CL is closed.

CL ID	06	Section no.	4.3	Date: 18/03/2022
Description of CL				

At Section 5.3 Leakage.

1. The PP has provided a leakage analysis stating that 22% of wood produced generates residue. Nevertheless, it is not clear how it can be concluded from that, that 22% of all wood produced is sawdust.
2. The evidence stated in the footnote 10 "Brito EO" has not been provided to the verification team.
3. The wood production analysis has taken into account the year 2016 which is not part of the monitoring period. Moreover, most recent information is available in the source mentioned.
4. The consumption of wood residues per year (17,221 m²) is not in accordance with the amount actually consumed during the MP.
5. Item B) leakage relating to non-renewable le biomass shall be assessed from ex-post surveys of users and areas where biomass is sourced: no information regarding ex-post surveys were provided to the verification team.
6. Regarding the justification of thermal energy the information is given per piece in the text, whereas in table 7 it is being given per tonne (1st paragraph below table 7).
7. Moreover, comparison taken into account thermal energy from both ceramics together has not been carried out in the MR, considering that all biomass is received by only one ceramic (Telha forte) and then transported to the other (Cenol).

Project participant response

Date: 08/06/2022

1. The reference used in the revalidation to assess the generation of forest residues is no longer available. Therefore, a new one was used. However, due to the change of values (22% to 15.7%), a deviation has been developed;
2. The article is partially available at <https://www.floram.org/article/588e2246e710ab87018b46f6/pdf/floram-2-%C3%BAnico-83.pdf>. However, in order to achieve a higher level of confidence and transparency, the PP chose to use for another reference (http://faef.revista.inf.br/imagens_arquivos/arquivos_destaque/7kc54tJmvt43dW_2013-4-25-14-47-28.pdf), which was also made available in the monitoring report;
3. According to the "General guidance on leakage in biomass project activities²", the project participant shall evaluate ex ante if there is a biomass surplus in the region of the project activity, which is not utilized. If it is demonstrated (e.g., using published literature, official reports, surveys etc.) at the beginning of each crediting period that the quantity of available biomass in the region, is at least 25% larger than the quantity of biomass that is utilized including the project activity, then this source of leakage can be neglected; otherwise, this leakage shall be estimated and deducted from the emission reductions. During the monitoring period, Sustainable Carbon annually analysed if the quantity of available biomass in the region (which was determined ex ante), was at least 25% larger than the quantity of biomass that was utilized by the project activity during the monitoring period, as it was and as can be seen in Section 5.3 Leakage.
4. The value was corrected in the monitoring report.
5. Not yet explained
6. The justification of thermal energy was corrected in section 5.3 Leakage (below table 7).
7. In section 5.3 Leakage, it was addressed a description relating to the thermal energy at both ceramic factories.

DOE assessment

Date: 29/06/2022

² Available at: http://cdm.unfccc.int/methodologies/SSCmethodologies/AppB_SSC_AttachmentC.pdf, paragraph 18.

1. The proportion of sawdust, based on evidences provided, has not been duly calculated. **Issue remains open**
2. New evidence has been made available to the verification team. This evidence refers to a study published in a Scientific Magazine (REVISTA CIENTÍFICA ELETRÔNICA DE ENGENHARIA FLORESTAL). Therefore information is reliable. **Issue closed**
3. It is clear now to the verification team that the values of biomass surplus are to be determined at the start date of the crediting period and then compared to the amount of biomass consumed during the monitoring period. Nevertheless, it is still not clear how the project developer came into the conclusion that, by considering only the portion consumed by project activity, that there is a quantity of biomass in the region at least 25% larger than the quantity of biomass that is utilized including the project activity. **Issue remains open**
4. The value has been duly corrected in the MR. **issue is closed**
5. This item has not been answered. **Issue remains open**
6. The information has been duly amended in the MR. **issue is closed**
7. It has been said that “the thermal energy generated per tonne of ceramic pieces produced at both ceramic factories had a lower performance than the estimated in the VCS PD”. Nevertheless, by checking the table 8 of the MR, while PD reported 0.005 TJ/ton of pieces, the monitoring period was more efficient with 0.004 TJ/ton. Therefore, the analysis is not accurate. **Issue remains open**

Due to issues 1, 3, 5 and 7 above, CL remains open

Project participant response

Date: 08/06/2022

- 1 – Updated evidence concerning forest residues generation and the corresponding calculus were revised in the Monitoring Report.
- 3 – In the project region, there is a higher amount of 25% of the biomass available in relation to the demand for the project activities as demonstrated in the Leakage section in the Monitoring Report.
- 5 – It was chosen to prove that the project does not have the potential to generate leakage by item A. This occurs due to item B is not applicable to assess the generation of leakage for this project since the use of renewable biomass does not imply shortages for others who also utilize renewable biomass in the region.
- 7 - The analysis was better described in section 5.3 Leakage (below table 8).

DOE assessment

Date: 29/06/2022

1. Information is now duly explained in the MR section 5.3. No leakage is applicable to the biomasses consumed in the Project activity.
3. Biomass surplus for açaí pits and forest residues have been duly justified in the MR and ER calculations spreadsheet. No Leakage is applicable.
5. Information is now correctly reported in the MR. Ex-post surveys have been carried out and evidences were duly provided^{/xx/}. No leakage is applicable.
7. Analysis carried out in the MR is now correct. The thermal energy required during the monitoring period was lower than the amount estimated in the PDD. Therefore, the project activity presented more efficient production.

CL is closed

Table 2. CAR from this verification

CAR ID	01	Section no.	4.3	Date:	18/03/2022
Description of CAR					
At Section 4.2, parameter PRy: The following inconsistencies were observed in the Ceramics production 1. Production of Cenol a. 02/01/2021 (sheet #1 with 12,680 bricks and 28,800 tiles) b. 04/06/2021: the bricks production is equal to 17,100 as per evidence provided c. 14/06/2021: the production of 7,440 bricks 19x29 is not reported in the "CER Cenol Planilha de monitoramento" unlike presented in the evidences. d. 15/06/2021: the evidence provided refer to an amount of 5,840 bricks 19x29 whereas the monitoring spreadsheet reported bricks type 19x19. 2. Production of Telha forte: a. March 2021: i. Bricks: values for 02, 03, 05, 09, 17, 19 and 26/03/2021 are not consistent with evidences provided ii. Tiles: value for 16/03/2021 is repeated and 23/03/2021 does not exist, b. August 2021: i. Bricks: the production of 02/08/2021 is not in accordance with evidence provided ii. Tiles: there is an amount equal to 91,350 tiles in the day 28/08/2021 which is not presented in the evidence provided. 3. Due to significant amount of wrong data in March/2021 (11 from 36), the verification team is requesting further sampling from April, June, October and December, whole months.					
Project participant response					Date:
1.a. The corrected value was applied and the spreadsheet <i>Cer Cenol planilha de monitoramento 2021-Revisada v.02</i> was made available to the verification team. 3) b. The corrected value was applied and the spreadsheet <i>Cer Cenol planilha de monitoramento 2021-Revisada v.02</i> was made available to the verification team. 4) c. The value reported in evidence was added in the spreadsheet <i>Cer Cenol planilha de monitoramento 2021-Revisada v.02</i> which was made available to the verification team. 5) d. The corrected type of ceramic piece was applied and the spreadsheet <i>Cer Cenol planilha de monitoramento 2021-Revisada v.02</i> was made available to the verification team 2. a. i. The corrected bricks values were applied and the spreadsheet <i>Cer Telha Forte planilha de monitoramento 2021-Revisada v.02</i> was made available to the verification team. a. ii. The corrected of titles were applied and the spreadsheet <i>Cer Telha Forte planilha de monitoramento 2021-Revisada v.02</i> was made available to the verification team.					

b. i. The corrected bricks values were applied and the spreadsheet *Cer Telha Forte planilha de monitoramento 2021-Revisada v.02* was made available to the verification team.

b. ii. The corrected of tiles were applied and the spreadsheet *Cer Telha Forte planilha de monitoramento 2021-Revisada v.02* was made available to the verification team.

3. New samplings were made available to the Verification team.

DOE assessment	Date:
1. Production of Cenol a. 02/01/2021: values have been duly corrected. b. 04/06/2021: values have been duly corrected. c. 14/06/2021: values have been duly corrected. d. 15/06/2021: values have been duly corrected. 2. Production of Telha forte: a. March 2021: i. Bricks: values have been duly corrected. ii. Tiles: value has been erased, b. August 2021: i. Bricks: values have been duly corrected. ii. Tiles: value has been erased. 3. A new sampling effort has been made which took into account further 142 manual data from months of April, June, October and December. No inconsistencies were found. Therefore, considering that all wrong data have been corrected and further sample was checked, a total of 76.5% of all manual data have been checked. Therefore, the results have reached materiality threshold lower than 5% as required by VCS Standard for small scale project activities. All corrections have been duly reflected in the ER calculations spreadsheet. <u>CAR is closed</u>	

CAR ID	02	Section no.	4.3	Date:	18/03/2022
Description of CAR					
At Section 4.2, parameter Qrenbiomass:					
1. The amount of biomass provided for Cenol Ceramic is not traceable: all receipts provided as evidence showed an amount of a. $5+2,43+1,13+13,72 \text{ m}^3 = 22,28 \text{ m}^3$. Nevertheless, each receipt reported a value of 27.44 m^2 (receipts from January 2021), b. $0,47+0,25+1,33+15,62 = 17,67 \text{ m}^3$. Nevertheless, each receipt reported a value of 27.44 m^2 (receipts from March 2021) c. May: the receipts presented are not in accordance with evidences provided: e.g. 03/05/2021 reported 27.44m^3 whereas the receipt 1220 reports 80m^3. Valid for all days of this month.					

d. The total amount of biomass blend received by Cenol Ceramic is not in accordance with the information provided in the monitoring spreadsheet "Cer CENOL Planilha Monitoramento 2021"	
Project participant response	Date: 08/06/2022
1. a. Each January's receipt was corrected in the spreadsheet <i>Cer Cenol planilha de monitoramento 2021-Revisada v.02</i> which also was made available to the verification team. 6) b. Each March's receipt was corrected in the spreadsheet <i>Cer Cenol planilha de monitoramento 2021-Revisada v.02</i> which also was made available to the verification team. 7) c. Each May's receipt was corrected in the spreadsheet <i>Cer Cenol planilha de monitoramento 2021-Revisada v.02</i> which also was made available to the verification team. 8) d. The correct values were now considered according to the evidence. Therefore, the total amount of biomass blend received by Cenol Ceramic is in accordance with the "Cer CENOL Planilha Monitoramento 2021" monitoring spreadsheet.	
DOE assessment	Date: 29/06/2022
1. Regarding the amount of biomass provided for Cenol Ceramic a. Values from January are in accordance with evidences provided, b. Values from March are in accordance with evidences provided, c. Values from May are in accordance with evidences provided,. d. The total amount of biomass blend received by Cenol Ceramic is now in accordance with the information provided in the monitoring spreadsheet "Cer CENOL Planilha Monitoramento 2021"	
CAR is closed	

CAR ID	03	Section no.	4.3	Date: 17/12/2022
Description of CAR				
The calculation of parameter f_{nrB} has not been carried out in accordance with TOOL30- Calculation of the fraction of non-renewable biomass v.01, unlike required by monitoring plan defined in the VCS-PD				
Project participant response				Date: 21/12/2022
Calculation has now been done in accordance with applied version of TOOL30, as required by monitoring plan.				
DOE assessment				Date: 21/12/2022
The project participants provided a spreadsheet with the complete calculation of the parameter f_{NRB} which has been determined in accordance with requirements of TOOL30 v.01, which is the correct version applied in the valid VCS-PD. The data from 2018 has been used for the calculations as it was the latest data available, consistently for all inputs used in the determination of the determination of the parameter. The application of this vintage was considered correct and consistent by the verification team. All evidences were provided and could be dully accessed^{/20/}.				

CAR is closed

Table 3. FAR from this verification

FAR ID	01	Section no.	4.3	Date: 18/03/2022
Description of FAR				
During the site visit carried out at Telha Forte Ceramic, it has been observed that two new Paulista Kilns are being installed which are not comprehended in the PDD description and have its start date estimated for the year 2022. Therefore, the impact in the additionality, applicability of methodology and baseline are to be carried out in the next verification.				
Project participant response				Date: 08/06/2022
During the next verification the impact in the additionality, applicability of methodology and baseline will be carried out.				
DOE assessment				Date: 29/06/2022
Assessment will be carried out during the next verification.				
<u>FAR will be checked during the next verification</u>				

Table 4. FAR from previous verification

Not applicable.

APPENDIX IV: FINDINGS – SC

Table 1. CL from this verification

CL ID	xx	Section no.	xx	Date: -
Description of CL				
Project participant response				Date: -
DOE assessment				Date: -

Table 2. CAR from this verification

CAR ID	01	Section no.	5.2	Date: 18/03/2022
Description of CAR				
The following issues were found during the social carbon assessment 1. Diversity: The information from 2021 it not yet available and therefore not all period has been taken into account 2. Indicator 2, community development: as per evidences provided, the company is not formally involved in the development and implementation of social and/or environmental projects and therefore the determined score is not coherent. 3. Indicator 3: the assessment is not coherent: it is said that the company does not use a suggestion box which has been corroborated during the interviews. Nevertheless, the score applied mentions the application of the suggestion box 4. Indicator 4: fixed salary cannot be considered additional employee benefit 5. Indicator 6: missing evidences of Training courses to some employees. Moreover, CIPA did not occur neither weekly training on labour health and safety, unlike stated in the SCR as per interviews performed during the site visit. 6. Indicator 8: no evidence of financial planning and controls regarding the carbon credits sold by the factory for the whole monitoring period has been provided. 7. Indicator 9: no evidences have been provided regarding the investment of the carbon credits income in the factory or community development 8. Indicator 12: missing evidences of donation of glass an plastics and selective collection campaigns. 9. Indicator 13: the final grade (score 5) is not in accordance with evidences provided (score 4) 10. Indicator 14: no evidence of improving working condition (monitoring of silica dust) have been evidenced to the verification team, unlike stated in the SC report.				
Project participant response				Date: 08/06/2022

- 1- The Diversity indicator was updated with the corresponding monitoring period (2021) as evidence (*Controle RAIS* folder) that were made available to the verification team.
- 2- The Community development indicator score was corrected according to the lack of evidence presented to the verification team during the remote site visit. Please, consult to the SCR_Cenol e Telha Forte_Point06_v2 section 4.1.2 and section 5 to access the corrected score.
- 3- The Employee satisfaction surveys indicator was updated in accordance with the site visit interview. Please, consult to the SCR_Cenol e Telha Forte_Point06_v2 section 4.1.2 and section 5 to access the corrected score.
- 4- The Additional employee benefits in the SCR_Cenol e Telha Forte_Point06_v2 section 4.2.1 was updated and corrected.
- 5- The training courses evidence (*13.12.21 - Treinamento Reginaldo Medicina do Trabalho*) were made available to the verification team. In addition, the Training and capacity building programs indicator description was updated in the SCR_Cenol e Telha Forte_Point06_v2 section 4.2.6. Moreover, the Health and safety practices indicator description (Section 4.2.5) was reviewed and corrected.
- 6- The corresponding evidence (*Planilha Carbono Despesas e Investimentos 2022*) for the indicator was made available to the Verification Team.
- 7- The corresponding evidence (*Planilha Carbono Despesas e Investimentos 2022* Folder) for the indicator were made available to the Verification Team.
- 8- evidences of donation of glass an plastics and selective collection campaigns.
- 9- The corresponding evidence for selective campaigns were made available to the Verification Team. Due to the absence of evidence regarding donation of glass, the description related to the donation was excluded from the Social Carbon Monitoring Report , in the SCR_Cenol e Telha Forte_Point06_v2 section 4.5.12.
- 10- The final grade of the Technological advances to improve efficiency of the production process was corrected, in the SCR_Cenol e Telha Forte_Point06_v2 section 4.5.13, according to the new evidence that was made available to the verification team (*13. Technological advances to improve efficiency of the production process* folder).
- 11- Due to the lack of evidence of the ceramic factories monitoring of silica dust plan, the Technological advances to improve efficiency of the production process indicator score was decreased in section 4.5.13 and section 5 in the SCR_Cenol e Telha Forte_Point06_v2 section 4.2.6.

DOE assessment

Date: 29/06/2022

1. Diversity: The information from 2021 have been made available and duly reported in the MR. information is accurate and in accordance with evidences provided.
2. Indicator 2, community development: the score of the indicator has been duly corrected.
3. Indicator 3: score of the indicator has been duly corrected and now reflect the correct information evidenced by project developer.
4. Indicator 4: fixed salary has been excluded from additional benefits
5. Indicator 6: Training evidences provided are from year 2022 (beyond monitoring period). **Issue remains open.**
6. Indicator 8: evidences of financial planning of resources obtained from VERs income have been duly provided to the verification team.
7. Indicator 9: evidences of income destination have also been provided to the verification team.
8. Indicator 12: evidences (pictures) of glass and plastic collection have been duly provided.
9. Indicator 13: the final grade has been duly evidenced in the SCR calculations and MR. Therefore, the score remained unaltered.
10. Indicator 14: the statement has been excluded.

Due to issue number 5 above, CAR remains open

Project participant response	Date: 07/07/2022
5 - The corresponding training courses evidence (ContratoTRON1167, E-mail Fw_ Convite_ TRON MT - seg. 13 dez. 2021 6_20pm - 7_20pm (BRT)) were provided to the verification team.	
DOE assessment	Date: xxx
Training carried out during monitoring period have been provided to the verification team.	
<u>CL is closed</u>	

Table 3. FAR from this verification

Not applicable.

APPENDIX V: TEAM COMPETENCE

Competence Statement			
Name	Marcelo Sebben		
Country	Brazil		
Education	M.Sc. (Sustainable Energy System) B. Eng. (Chemical Engineering)		
Experience	+12.5 Years		
Field	Chemical process industry, CDM, Energy, Climate Change		
Approved Roles			
Team Leader	Yes		
Validator	Yes		
Verifier	Yes		
Methodology Expert	Yes (ACM0001, ACM0002, ACM0006, AM0065, AMS ID, AMS-I.E, AMS-I.C, AM0026, AMS-I.A, AMS-I.F, GS: Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement, GS: Technologies and Practices to Displace Decentralized Thermal Energy Consumption)		
Local expert	Brazil, Chile, Honduras, Colombia		
Financial Expert	Yes		
Technical Reviewer	No		
TA Expert	Yes (TA 1.1, 1.2, 4.1, 5.1, 9.1, 13.1)		
Reviewed by	Shreya Garg	Date	02/09/2019
Approved by	Anshika Gupta	Date	02/09/2019

Competence Statement			
Name	Sergio Bonanno Cruz		
Country	Brazil		
Education	Post Graduate Diploma in Environment		
Experience	25 Years		
Field	Environmental Law, CDM, Energy, Climate Change		
Approved Roles			
Team Leader	Yes		
Validator	Yes		
Verifier	Yes		
Methodology Expert	Yes (ACM0001, ACM0002, AM0026, ACM0006, AMS ID)		
Local expert	Brazil, Chile, Colombia		
Financial Expert	Yes		
Technical Reviewer	No		
TA Expert	Yes (TA 1.2, 13.1)		
Reviewed by	Shreya Garg	Date	29/08/2019
Approved by	Anshika Gupta	Date	29/08/2019