

VERIFICATION REPORT

Kitambar Switching Fuel Project



Document Prepared by Earthood Services Private Limited

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Summary:

Brief summary of the project activity

The project activity involves fuel switching from native firewood from caatinga biome to several types of renewable biomasses. 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 01.

Scope of verification

Sustainable Carbon – Projetos Ambientais Ltda. has contracted ESPL to conduct the 7th verification of the project “Kitambar Switching Fuel Project” for the period from 01/04/2016 to 31/12/2016 (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, project equipment and monitoring and metering 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 VCS Version 3 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.

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

Conclusion

ESPL has performed the verification of the VCS project “Kitambar Switching Fuel Project”, with VCS Project ID 33, for the monitoring period from 01/04/2016 to 31/12/2016 (both days included).

During the present VCS verification, 02 CLs and 01 CAR were raised and successfully closed. For the SOCIALCARBON verification, no CL, CAR or FAR as raised.

The verification team has confirmed the implementation of the 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 01). 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 **32,562 tCO₂e** in the above mentioned monitoring period.

In addition, the verifier confirms that the project meets all relevant requirements established by the SOCIALCARBON Standard and its 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 verification of the 7th verification of the project “Kitambar Switching Fuel Project” for the period from 01/04/2016 to 31/12/2016 (both days included) according to the requirements of the Verified Carbon Standard Version 3.

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 Version 3 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 aims to achieve a reasonable level of assurance.

1.4 Summary Description of the Project

The project activity involves fuel switching from native firewood from caatinga biome to renewable biomasses in Kitambar Ceramic at the city of Caruaru, State of Pernambuco, Brazil. Thus, GHG emission reduction is achieved.

Cerâmica Kitambar Ltda - ME is the project owner.

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

http://vcsprojectdatabase.org/#/project_details/33

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 (including sampling approach to be applied);
- physical 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			
1.	Torres	Francisco	Kitambar	08/03/2018	Project activity management and monitoring	Sergio Cruz
2.	Gildásio	Dionas	Kitambar	08/03/2018	Ceramic operations	Sergio Cruz
3.	Barbosa	Antonio	Kitambar	08/03/2018	Ceramic management	Sergio Cruz
4.	Moura	Ayane	Kitambar	08/03/2018	SocialCarbon monitoring	Sergio Cruz
5.	Demier	Lívia	Sustainable Carbon	08/03/2018	Project activity monitoring Excel calculations	Sergio Cruz
6.	Prado	Guilherme	Sustainable Carbon	08/03/2018	Project activity monitoring Excel calculations	Sergio Cruz
7.	Silva	Aílton	SETEC	08/03/2018	Ceramic operations	Sergio Cruz

2.4 Site Inspections

Duration of on-site inspection: 08/03/2018				
#	Activity performed on-site	Site location	Date	Team member
1.	Opening Meeting	Caruaru	08/03/2018	Sergio Cruz
2.	Implementation and operation of project activity as per registered PD/previous verifications.	Caruaru	08/03/2018	Sergio Cruz
3.	Management and monitoring procedures followed at project site.	Caruaru	08/03/2018	Sergio Cruz
4.	Physical inspection of the project activity: site visit and interview of monitoring personnel.	Caruaru	08/03/2018	Sergio Cruz
5.	Verification checklist: compliance of monitoring procedures followed at project site with registered PD and monitoring methodology.	Caruaru	08/03/2018	Sergio Cruz
6.	Management and operational system: documentation, allocation of responsibilities, qualification and training, data recording & archiving, internal audit and management review and emergency procedures.	Caruaru	08/03/2018	Sergio Cruz
7.	Review of ER calculations in accordance with applied methodology and relevant tools.	Caruaru	08/03/2018	Sergio Cruz

8.	Review of monitored data and relevant document in accordance with registered monitoring plan and applied monitoring methodology.	Caruaru	08/03/2018	Sergio Cruz
9.	Presentation of findings	Caruaru	08/03/2018	Sergio Cruz
10.	Closing meeting	Caruaru	08/03/2018	Sergio Cruz

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, 02 CLs and 01 CAR were raised and successfully closed. No FAR has been raised.

For the SOCIALCARBON verification, no CL, CAR or FAR as raised.

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

2.5.1 Forward Action Requests

No FAR were raised.

2.6 Eligibility for Validation Activities

ESPL holds the accreditation for validation 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 01.

No deviations were observed.

3.3 Project Description Deviations

According to information gathered during the site visit, the verification team has to confirm that all physical features (technology, project equipment, monitoring and biomasses) of the registered VCS project activity were in place and that the project participants have been operating the project activity as per the approved VCS-PD during the monitoring period.

The project has been implemented and operated as described in the VCS-PD, with the corrections already implemented at previous monitoring periods and accepted by VCS. They are:

- the registered VCS-PD sets that the project proponent (meaning the ceramic owner) would measure the amount of renewable biomasses used (parameter $Q_{renbiomass}$). However, the

parameter is monitored through the receipts and invoices of biomass received by the ceramic company. This means that the amount of renewable biomass is measured by the supplier and controlled by the ceramic owner by the receipts and invoices. This approach considers that it is the responsibility of the provider to measure the amount of biomass, since this information needs to be available in the sale invoice or receipt. As this information is used for commercial purposes, it is considered that data from the suppliers are a reliable source for this parameter;

- b. the registered VCS-PD did not consider the conversion factor from stereo meter (m^3 stereo) to cubic meter (m^3) for the amount of renewable biomass that arrives in volume units (parameter $Q_{\text{renbiomass}}$). Therefore, the values presented were corrected in accordance to the conversion factors presented in the section 3.2 of the Monitoring Report.

3.4 Grouped Project

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 caatinga biome to renewable biomass. During this monitoring period, Kitambar Ceramic used sawdust and algaroba wood as fuel.

As per the 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.

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: Kitambar Ceramic and Sustainable Carbon – Projetos Ambientais Ltda.;
- Project Category: project ($\leq 300,000 \text{ t CO}_2\text{e/y}$);
- Methodology: AMS-I.E – Switch from non-renewable biomass for thermal applications by the user – version 01;
- Start Date: 01/01/2006 – date on which the project proponent began employing renewable biomass as fuel;
- Crediting Period: from 01/01/2007 to 31/12/2016 – 10 years – renewable;

- Project Location: Kitambar Ceramic – Rodovia BR 232 – km 136 – Distrito Industrial – City of Caruaru – State of Pernambuco – Brazil – geographical coordinates are 08° 16' 58" S and 35° 58' 33" W;
- Technical Data: 08 round kilns.

The main sustainable development contributions are:

- a. use of clean and efficient technologies through the use of renewable biomass as fuel;
- b. pioneer initiative that encourages the development of new technologies throughout the country;
- c. use of renewable biomasses resulting in GHG emission reductions.

4.2 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 01 is applied to the project activity. GHG emission reduction is calculated as baseline emissions;
- no project emissions are considered for the project activity, in accordance with the applied methodology;
- no leakage is considered for this kind of project, in accordance with the applied methodology and “General guidance on leakage in biomass project activities”, as all possible sources of leakage are demonstrated at the MR as:
 - o there is no transference of equipment;
 - 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:

- $EF_{projected\ fossil\ fuel}$ – CO₂ Emission factor of residual fuel oil: 77.4 tCO₂/TJ (as per Section 3.3 of VCS-PD);
- $NCV_{biomass}$ – Net calorific value of non-renewable wood: 0.019 TJ/ton (as per Section 3.3 of VCS-PD);
- ρ_{wood} – Specific gravity of non-renewable wood: 0.88 ton/m³ (as per Section 3.3 of VCS-PD);
- BF_y – Consumption of non-renewable biomass per tons of ceramic devices produced per year: 2.28 ton of wood / thousands of devices (as per Section 3.3 of VCS-PD).

Monitored parameters:

- $Q_{renbiomass}$ – Amount of renewable biomasses (refer to Section 3.2 of the MR);
- PR_y – Production of ceramic pieces (refer to Section 3.2 of the MR);
- *Origin of Renewable Biomass* – Renewable origin of the biomass: all biomasses used at the project activity are renewable and from a legalized source;
- *Renewable biomass surplus* – Amount of renewable biomass available (refer to Sections 3.2 and 4.3 of the MR);
- *Leakage of non-renewable biomass* – Leakage resulted from the non-renewable biomass: 0 tCO₂e (as per Section 3.2 of the MR);
- $f_{NRB,y}$: Fraction of biomass (wood) used in the absence of the project activity in year y that can be established as non-renewable biomass using survey methods: 99.3% (as per Section 3.2 of the MR).

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.

So, $BE_y = 32,562$ tCO₂e.

Project emissions (PE_y)

No project emissions are considered for the project activity. Thus, $PE_y = 0$ tCO₂e.

Leakage emissions (LE_y)

No leakage is considered for this kind of project. Thus, $LE_y = 0$ tCO₂e.

Emission Reductions

Therefore, according to the applied methodology, as PE_y and $LE_y = 0$ tCO₂e, $ER_y = BE_y$.

Where:

- ER_y : Emissions reductions during the year y;

BE_y : Baseline emissions during the year y ;
 PE_y : Project reductions in year y ;
 LE_y : Leakage reductions in year y .

Thus, $ER_y = BE_y$. So, $ER_y = 32,562 \text{ tCO}_2\text{e}$.

4.3 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 were found of adequate level by the verification team to ensure an accurate quantification of the emission reductions.

4.4 SOCIALCARBON Results

4.4.1 Social Resource

Indicator	1. Diversity				
Situation	At the present date, there were 34 employees working on Kitambar ceramic factory, among them, 24% are from minority 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	4 (four)				
Justification	It was verified by the performed interviews that the ceramic has a social inclusion policy. In addition, it was possible to check during the site visit that some of the employees from minority groups are indeed working at Kitambar and that the educational program is indeed in place.				
Evidence	Interviews performed with ceramic representatives and human resources documents				

Indicator	2. Community development
Situation	Kitambar has a formal partnership golden label with ICIA (Agreste Children's Cancer Institute), meaning it's a top donator. The ICIA is a non-profit organization that provides treatment, support and free multidisciplinary care for patients and their families. The factory does monthly donations to the institute, and also helps them with construction materials. During this monitoring period, it was donated R\$ 3,150.00 to ICIA. In 2016, ICIA has a total of 57,053 calls

attended, performing over than 27,129 medical exams since the beginning of the institute activities. It is a main hospital in Northeast, with a monthly average expenditure of R\$ 120,000.00. Therefore, it is essential for community that this partnership be maintained. To know more about ICIA and its activities, please accesses http://www.icia.org.br/ Kitambar also plays an important role regarding the educational development in Pernambuco. The factory has a partnership with three Educational Institutions: The Federal Institution of Education, Science and Technology of Pernambuco – IFPE, Centro Universitário DeVry Unifavip and Centro Universitário Tabosa de Almeida – ASCES UNITA. The partnership was established to provide supervised visit to students from engineering courses, which aims to show the factory productive process, its safety practices and its quality performance. This kind of action is very important for the improvement of academic and technical knowledge. The factory and the university have structured a partnership to develop together environmental projects: - rain water capture in the factory; - research in order to optimize the production process, reduce the residue generation, as well as the sustainable use of resources. - clay is designated to soil correction in agricultural production. - broken pieces are used to cover roads. These projects will benefit the environment, at the same time providing even more opportunity for educational development among the students. Kitambar was also part of a group of volunteers aimed to finish the construction of an old people's home, in a neighbour city, Bezerros city, called "Associação dos Idosos Nossa Senhora do Rosario". Kitambar donated 8,000 bricks to the institution.					
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 partnerships, etc.
Score	5 (five)				
Justification	It was verified by the performed interviews, pictures and websites that the ceramic has acted in order to improve the community development. There is an intention to start a social project in in a neighbourhood community in order to contribute to local community development.				
Evidence	Pictures, interviews and ICIA's website.				
Indicator	3. Employee satisfaction surveys				
Situation	The ceramic factory promotes meetings with the employees every three months. During the meetings, Mr. Antonio Marcos, the ceramic owner, talks about the updates in the ceramic sector, about the carbon project and about the new activities promoted by the factory. Ms. Ayane, the health and safety technician,				

	<i>talks about the issues related to the health and safety practices, among others thing. They always ask for the employees' opinions. The factory has a schedule of the meetings, indicating the date and the topics that will be discussed in the next meetings.</i> <i>However, the company believes that only the meetings are not sufficient to evaluate the employees' opinion, so it has started a questionnaire application with each employee.</i> <i>The questionnaire aims to evaluate the employee's opinion about the company, their jobs and the activities developed in the factory, such as labour gymnastic and the literacy classes.</i> <i>The ceramic factory owner started this questionnaire especially after he had realized that the employees' frequency in such activities has been decreased. Worried about these, the company started the questionnaire, asking, among others things, the reasons for the absence and also asking for suggestions to improve such activities. The owner believes that it is important that the employees participate in activities that improve physical exercises.</i> <i>The health and safety technician is also in touch with the employees, looking for their opinion. The factory has a notice board, where new activities and programs are regularly announced. During the monitoring period, the employees suggested for the company to provide H1N1 vaccines. In April, the factory provided the vaccines for all the employees.</i>				
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 complaints.
Score	6 (six)				
Justification	It was verified by the performed interviews and visit that the ceramic that the ceramic has several actions towards employees.				
Evidence	Interviews and site visit.				

4.4.2 Human Resource

Indicator	4. Additional employee benefits
Situation	<i>Beside the fixed salary, the company offers some benefits employees, such as:</i> <i>- Saturday Off: The company granted the employee's request of having the Saturdays off;</i> <i>- Health insurance: the company pays 50% of the employee Health Insurance;</i> <i>- Life Insurance for all employees;</i> <i>- Commission based on production: except for the administration, cleaning and maintenance staffs, all employees receive commission for every thousand pieces produced;</i> <i>- Transportation: the company provides round trip transportation for employees between the city of São Caetano and the work. São Caetano is the city where almost all employees live; this place was chosen by the employees.</i>

	- <i>Meals: currently the company can't provide meals to all employees, due to the high value of these meals. Therefore, the company offers lunch to some of the employees, such as office workers, maintenance workers, machine operators and managers. For the others employees, the factory provides the place to have the meals and also provides one employee to cook and prepare the meals.</i> - <i>H1N1 vaccination to employees.</i>				
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 the benefits as Saturdays off, health insurance to part of the employees, life insurance to all employees, commission based on production and vaccination. In addition, the verification team had the chance to visit the premises where lunch is provided to some employees. In addition, the bus that is used for the employee transportation was also checked.				
Evidence	Interviews and site visit.				

Indicator	5. Health and safety practices				
Situation	<i>The ceramic factory has CIPA. During the CIPA, the company promotes speeches, training programs and internal communication about health and safety practices.</i> <i>The ceramic has PCMSO and PPRA. It also has a health and safety technician, who is responsible for all the health and security issues. Kitambar Ceramic Factory also has LTCAT, which is a "Technical Report on Working Environment Conditions".</i> <i>The company offers all the personal protective equipment necessary for the workers to carry on their activities with safety and there is internal control of the PPEs use. There are signs encouraging the PPEs use in the factory.</i> <i>Besides that, Kitambar provides labour gymnastics to employees, three times per week, as a form to encourage physical activity. In addition Kitambar gave H1N1 vaccination to employees.</i>				
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	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.

			(c) The factory promotes lectures and events 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.				
Evidence	Pictures, interviews, PCMSO and PPRA.				

Indicator	6. Training and capacity building programs				
Situation	<i>During the period analysed Kitambar offered several courses and lectures to employees, such as:</i> - <i>“Oficina Esocial na Prática” – FIEPE</i> - o Severino Francisco Torres - o Crislayne Gleice dos Santos - <i>“Oficina Descomplicando o direito trabalhista” – FIEPE</i> - o Crislayne Gleice dos Santos - <i>“Como evitar problemas trabalhistas?”</i> - o Crislayne Gleice dos Santos - <i>How to sell ceramic products – roof tiles and bricks Kitambar</i> - <i>Use, responsibility and conservation of PPE</i> - <i>Job accidents – How to avoid</i> - <i>Sustainable Production – Kitambar Ceramic</i> - <i>Success case – Kitambar Artefatos de Cerâmica Ltda</i> - o Edvaldo Costa Maia - <i>NR 12 on Red Ceramic Industry</i> - o Edvaldo Costa Maia - <i>Quality System Management, health and job security</i> - o Antonio Marcos Tavares Barbosa - <i>Production Process and Roof Tile Fabrication</i> - o Antonio Marcos Tavares Barbosa - <i>Engineering and environmental technologies Workshop: Sustainable Production and Carbon Credits</i> - o Antonio Marcos Tavares Barbosa <i>Kitambar has a planning control spreadsheet where is established the next capacity building programs that the factory intends to participate.</i>				
The company has not invested in lectures nor professional training	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	In addition to scenario 4, the factory has an internal campaign to encourage employees to complete their high school	In addition to scenario 5, the Ceramic factory has established a strategic plan regarding training and capacity building programs.

courses for staff.			knowledge via lectures to other employees; and/or Regular lectures were offered to employees (at least two per semester).	education; and/or The factory promotes a literacy program for youth and adults.	
Score	6 (six)				
Justification	It was verified by the performed interviews that Kitambar provides capacity-building courses to several employees. Certificates and attendance list were presented. In addition, during the site visit, the verification team could verify that the employees are being trained in 5S principles. There is an intention to continue investing on training and capacity building programs.				
Evidence	Certificates of training courses and attendance lists.				

4.4.3 Financial Resource

Indicator	7. Biomass supply				
Situation	Currently the ceramic factory uses two types of biomass: algaroba wood and sawdust. The factory has total control of the source and 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	4 (four)				
Justification	It was verified by the performed interviews that Kitambar has control of the suppliers and accounts for 100% of the used biomass, which less than 50% are from agro-industrial waste. The verification team checked the records of purchase of biomass. In addition, the ceramic has total control of its production in order to analyse the relationship of biomass and ceramic devices. The factory intends to use more fuel that comes from agro-industrial waste.				
Evidence	Records of purchase of sawdust and algaroba wood and Report of daily production of ceramic device.				

Indicator	8. Planning and control				
Situation	The factory has organized controls of the income received from carbon credit sales, as well as of the destination for proceeds. The factory also presents a future planning, with timeline, budget, and benefits.				
The factory has no organized controls of the income received	The factory has partial control of the income received from	The factory has organized controls of the income received	The factory has organized controls of the income received	The factory has organized controls of the income received	The factory has organized controls of the income received

from carbon credit sales nor the destination for proceeds.	carbon credit sales and the destination for proceeds.	from carbon credit sales, but control of the destination for proceeds is partial.	from carbon credit sales, as well as of the destination for proceeds. However, the factory presents no future planning.	from carbon credit sales, as well as of the destination for proceeds. However, the factory presents incomplete future planning.	from carbon credit sales, as well as of the destination for proceeds. The factory presents satisfactory future planning (timeline, budget, responsible involved and benefits).
Score	6 (six)				
Justification	The ceramic has records of the income received from carbon credit sales. In addition, by the performed interviews, it was evidenced that Kitambar has plans for the upcoming benefits.				
Evidence	Receipts of payment of the VCUs.				

Indicator	9. Carbon credit investments				
Situation	100% of the income generated by carbon credit sales was invested in the factory and in 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. In addition, by the performed interviews, it was evidenced that Kitambar spends more than the income received from carbon credit sales in the factory improvements and community development.				
Evidence	Receipts of payment of the VCUs.				

4.4.4 Natural Resource

Indicator	10. Environmental management
Situation	The ceramic factory shows some initiatives regarding environmental management: - <u>Waste</u>: the factory generates a small quantity of waste. The unburnt residues are returned into the clay mixture and reused in the production process. The discarded ceramic goods are reused to repair roads; the ashes generated by Kitambar's production are used as agriculture fertilizer; - The materials, such gloves and EPIs, contaminated with oil are collected by a company who treats these materials. - <u>Air</u>: Kitambar has annual reports that monitor the atmospheric emissions, in 2016 it was done by SETEC Controle tecnológico.

	- Water: The factory implemented a system to collect rainwater to use in the process, as a manner to reduce public water consumption. Also, Kitambar ceramic factory is participating in a program called “Cerâmica Sustentável é + vida” (Sustainable Ceramic Factory is more life) developed by Anicer (National Ceramics Factories Association) in partnership with Sebrae (Brazilian Service in support of Micro and Small Enterprises). This program was created to promote sustainability in the red ceramics factories through a set of actions. For more information please access: http://www.anicer.com.br/index.asp?pg=institucional_direita.asp&secao=17&ex=3				
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 Kitambar representatives and at the site visit that Kitambar has implemented procedures to reuse unburned residues and to use the discarded ceramic devices in repairing of roads. In addition, contaminated items are separately collected in order to be sent to a specialized company. Moreover, the atmospheric emissions are regularly monitored by an external party and a rainwater collecting system has been constructed.				
Evidence	Pictures, interviews and Anicer's website.				

Indicator	11. Brazilian environmental legislation				
Situation	The ceramic is in conformity with the environmental laws and posses: - License for clay extraction nº 05.13.02.000410-6, issued by the CPRH the Environmental Agency of Pernambuco, expiring on February, 2014. The new operation license is in renovation process nº 010988/2014. - The ceramic also buys clay from a company that has the operational license nº 05.15.08.003942-5 issued by the CPRH and valid until August 17th, 2018. - License from the DNPM nº 840.089/2002, valid until July 23rd, 2022. - Operation License nº 05.16.08.003514-1, issued by the CPRH, expiring on September 16th, 2018. - Federal Technical Registry issued by IBAMA, valid until February 02, 2017. - The ceramic uses water from the public supply and also buys water from a company that has the operational license nº 03.16.02.000621-3 issued by the CPRH and valid until February 23rd, 2019. The water is transported by trucks.				
The factory does not possess any of the following: -operating license	The factory only posses two of the following: -operating license	The factory only posses three of the following: -operating license	The factory posses all of the following: -operating license	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

-license for clay extraction -water grant - federal technical registry	-license for clay extraction -water grant - federal technical registry	-license for clay extraction -water grant - federal technical registry	-license for clay extraction -water grant - federal technical registry However, they do not meet all the conditions established by them.		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	<i>Kitambar has a partnership with the Rural Federal University of Pernambuco (UFRPE), to develop together two environmental projects:</i> - <i>a rain water capture in the factory: Kitambar implemented a rainwater collect at the factory, to reduce the public water consumption, thus avoiding the use of drinking water where it is not necessary.</i> - <i>research in order to optimize the production process, reduce the residues generation, as well as the sustainable use of resources.</i> - <i>the factory and the University believe that the project will benefit the environment, and at the same time will provide even more opportunity for educational development among the students.</i>				
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: Periodic planting of saplings on factory grounds.	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 and/or public administration.
Score	6 (six)				
Justification	A rainwater collecting system has been constructed. There is an intention to make a planting of native trees into the ceramic property.				
Evidence	Pictures and interviews.				

4.4.5 Biodiversity/Technology Resource

Indicator	13. Technological advances to improve efficiency of the production process
Situation	<i>The factory meets the following aspects:</i> - <i>possess a dryer that recycles the heat from the kilns;</i> - <i>the factory has eight round kilns, considered intermittent kilns; however, it was explained that the round kiln is the most suitable kiln to produce the</i>

	roof tiles. Therefore, it was considered that the factory has an efficient kiln for its production; - controls the kiln temperature: the factory keeps a record of thermocouples and the data is registered in a computer system; - the factory feeds kilns using a semi-automatic equipment; - the factory control and records production at different stages of the production process: molding machine, kiln loading and kiln unloading; - during the period analysed there was no need for infrastructural improvements in the factory, since it had recently carried out the renovation of toilets and purchased new equipment in the last monitoring periods - a wood shredder and a dosing machine, to improve the factory efficiency.				
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 Kitambar representatives and during the site visit that the ceramic has several equipment that enables an improvement in the efficiency of the production process. There is an intention to improve the efficiency by the duplication of the number of outputs of kilns, and consequently decreasing the energy use.				
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: - there is no excess of dust and debris – there is an employee in charge of cleaning. He cleans the factory every day; - the factory is a well-ventilated place, with ventilators and exhausters to reduce the employees exposure to the heat; - the factory has translucent tiles, which provides a well-lit working environment; - the noise in the ceramic factory does not exceed those established by law. - the factory uses signing according to the applicable norms. Besides that, the factory has an organized planning to improve the general conditions described above. The health and safety technician has a work spreadsheet, where she controls the cleaning and its frequency, the noise control and the PPE usage, the signs and its conservation, among others characteristics to maintain a good environment. The factory is also applying the 5S Methodology, in order to maintain the organization and the cleanliness in the factory. During the 5S training the employees were instructed to keep the equipment and machines in their right place; to check preventive needs for maintenance in each sector; to check the documentation for each area, such as reports, schedules, maintenance report, among others; to make the disposal of each type of waste, etc.

	<i>In order to increase the organization and the efficiency at the factory, Kitambar has signals on each equipment, to inform about the procedures regarding its operation and maintenance.</i>				
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	6 (six)				
Justification	It was evidenced by the performed interviews with Kitambar employees and during the site visit that the ceramic has several features that improve the general conditions of the working environment.				
Evidence	Interviews and site visit.				

Indicator	15. Product quality				
Situation	<i>The enterprise has quality control of its products, including tests for the raw material and final product. The ceramic has a quality control center inside the company, where employees are trained to evaluate the quality control of the ceramic products. Besides that, the factory has PSQ certification (Quality Program) for the all types of tiles that are produced in the factory.</i>				
No efforts were made to analyse 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	6 (six)				
Justification	The verification team had access to the entire operation process since the clay inspection until the final product to verify the tests performed during the process. In addition, the verification team visited the internal lab and received the basic information about the tests performed with the tiles. Moreover, it was evidenced by the performed interviews with the ceramic representatives that Kitambar participates in the quality program PSQ certification.				
Evidence	Interviews and site visit.				

4.4.6 Carbon Resource

Indicator	16. Stakeholder consultation
Situation	<i>Kitambar ceramic factory is always participating in events and meetings, where discloses about the carbon project. The ceramic provided a lecture about the project: Engineering and environmental technologies Workshop: Sustainable Production and Carbon Credits. It was given by Edvaldo Costa Maia which is a consultant of Kitambar Ceramic.</i> <i>During this monitoring period, the factory has conducted a formal stakeholder consultation and Mr. Antonio Marcos noticed that people were very interested about the carbon project. During the consultation, a questionnaire was forwarded to evaluate the participants' opinion, and no negative comments were registered. The factory has informed its telephone and email address as a continuous mean of communication with the stakeholders.</i>

During the time period analysed, the factory did not conduct a stakeholder consultation.	During the time period analysed, the factory conducted an informal (no record) stakeholder consultation.	During the time period analysed, the factory conducted a formal (with records) stakeholder consultation; however negative comments were made regarding the project.	During the time period analysed, 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	5 (five)				
Justification	It was evidenced by the performed interviews with the ceramic representatives and by presented pictures that Kitambar promotes events and meetings with stakeholders and provides communication channels with the local community. There is an intention to conduct another formal stakeholder consultation during the next monitoring period.				
Evidence	Pictures, interviews and Kitambar's website.				

Indicator	17. Green marketing				
Situation	<i>The factory has an established plan to invest in green marketing. The ceramic factory hired an advertising company to help with the green marketing strategies. Currently Kitambar markets their environmental practices on its website (http://www.kitambar.com.br/?pagina=meioambiente), on Facebook (https://pt-br.facebook.com/kitambar.pe), Twitter (https://twitter.com/kitambar), Instagram (https://www.instagram.com/kitambar/), YouTube (http://ow.ly/u1QqL) and also at the local radio.</i> <i>The factory sees positive results with these marketing strategies</i> <i>To evaluate its environmental practices, Kitambar has won the FIEPE Sustainability Prize 2016. It was the sixth edition of the Prize, which evaluates environmental themes: water, waste, air emissions and energy efficiency. Winners were judged by representatives of the Environmental and Sustainability State Department of Pernambuco, the Environmental Agency of Pernambuco – CPRH, the Brazilian Institute of Environment and Natural Resources – IBAMA, the Technological Research Institute of Pernambuco – ITEP, among others. Kitambar own the air emission category, with its Fuel Switching Project.</i>				
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	6 (six)				
Justification	It was evidenced by the performed interviews with the representatives that the ceramic has an implemented green marketing and intends to continue to invest, as it is a differential issue among its competitors. There is an intention to continue investing on green marketing strategies.				
Evidence	Interviews and Kitambar's website.				

Indicator	18. Project performance				
Situation	The owner states that he is very satisfied with the carbon project, and the project helps him to improve the social and environmental benefits that he provides to community. He also says that he is positively surprised with results. Besides that, the ceramic factory has always been invited to participate in meetings to explain about its practices and has won prizes as FIEPE Sustainability Prize 2016. Mr. Antonio Marcos considers that the carbon project brought a competitive advantage for his business, as the company became a reference of environmental actions.				
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	It was evidenced by the performed interviews with the representatives that the ceramic sees several advantages and promotes the practice.				
Evidence	Interviews and Kitambar's website.				

4.5 Analysis of SOCIALCARBON Results

4.5.1 Current Performance

Resource	Critical	Satisfactory	Sustainable	Average Score	Performance
Social	0.0%	33.3%	66.7%	5.0	Sustainable
Human	0.0%	0.0%	100.0%	6.0	Sustainable
Financial	0.0%	33.3%	66.7%	5.3	Sustainable
Natural	0.0%	33.3%	66.7%	4.7	Satisfactory
Biodiversity / Technology	0.0%	0.0%	100.0%	5.7	Sustainable
Carbon	0.0%	0.0%	100.0%	5.7	Sustainable

4.5.2 Historical Performance

Social	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
	3.3	2.1	2.9	4.3	5.0	4.7	5.0
Historic Analysis: the Social resource increased in comparison with the previous reports. The main social contribution is to ICIA. The factory has a formal partnership golden label with the institute, meaning it's a top donator. The factory contributes with monthly financial donations and construction materials when it's necessary.							

The factory maintains its partnership with the Federal Institution of Education, Science and Technology of Pernambuco – IFPE, to provide supervised internship to students from this institution, showing that the factory is formally involved and contributes with the development and implementation of social benefits for the community.

The factory has also a good relationship with the Rural Federal University of Pernambuco (UFRPE), which visited Kitambar in 2014, 2015 and 2016 as a part of their educational schedule. This visit aimed to show the factory productive process, its safety practices and its quality performance. This kind of action is very important for the improvement of academic and technical knowledge

The factory and the University structured a partnership to develop together environmental projects:

- A rain water capture in the factory;
- Research in order to optimize the production process, reduce the residues generation, as well as the sustainable use of resources.

The factory has a partnership with the NGO Habitat for Humanity. Kitambar is participating in the program called “Water for Lives”, which repairs and expands the roofs for families in rural areas of Pernambuco State. Kitambar donated 2,300 tiles. Kitambar also donated 8,000 bricks to an old house called “Associação dos Idosos Nossa Senhora do Rosario”

In 2016 Kitambar was part of a group of volunteers aimed to finish the construction of an old people’s home, in a neighbour city, Afogados city. Kitambar has also donated tiles to ICIA.

The Employee satisfaction surveys has also maintained in comparison with the previous reports, the ceramic factory still promotes meetings with the employees every three months, and still applies questionnaire with the employees. Besides that the factory has a notice board, where new activities and programs are regularly announced.

Human	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
	2.2	2.8	2.7	5.3	6.0	6.0	6.0

Historic Analysis: the performance of the Human resource also maintained. The factory continued to improve its training and capacity building programs indicator, offering a significant amount of training courses to employees. The factory also organized a planning control spreadsheet, where it is established the next capacity building programs that the factory intends to participate.

The company meets all legal requirements regarding health and safety practices and also has a safety engineer to ensure best practices in the company. During this monitoring period, Kitambar started to provide labour gymnastics to its employees, three times per week, as a form to encourage physical activities.

Regarding the additional employee’s benefits indicators, all employees receive more than one benefit, such as life insurance and transportation to work. In addition in this monitoring period the ceramic promoted a H1N1 vaccination to employees.

Financial	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
	4.0	3.7	4.3	4.3	4.3	5.3	5.3

Historic Analysis: the Financial Resource remained the same at this point; Kitambar presented an organized financial control of its investments and also presented a future planning, with timeline, budget, and benefits.

Besides that, up 100% of the income generated by the carbon credit sales were invested.

Natural	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
	3.0	2.4	3.4	4.3	4.3	4.7	4.7

Historic Analysis: the Natural resource remained the same at this point, although new activities and partnerships are being set.

Regarding the environmental management practices, the ceramic showed commitment with two aspects: monitoring the air emissions, waste practices and The factory has implemented a system to collect rainwater to use in the process, as a manner to reduce public water consumption.

Regarding the voluntary environmental initiative indicator, Kitambar is now initiating another partnership to develop a new environmental project in Northeast. This partnership, with the UFRPE, will develop a reforestation project to recover riparian forest in Tacaimbó city. The factory knows the value of river conservation for the quality of the water and intends to initiate the activities during the next monitoring period.

Biodiversity / Technology	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
	3.0	3.1	3.7	5.3	5.7	5.7	5.7

Historic Analysis: the general condition of infrastructure and machinery/equipment used in the production process meets all of the characteristics described in the indicator.

The ceramic factory has also achieved all of the aspects in the working environment indicator, providing well working environment for the employees. The health and safety technician has a work spreadsheet, where she controls the cleaning and its frequency, the noise control and the PPE usage, the signs and its conservation, among others characteristics to maintain a good environment.

The factory is also applying the 5S Methodology, in order to maintain the organization and the cleanliness in the factory. During the 5S training the employees were instructed to keep the equipment and machines in their right place; to check preventive needs for maintenance in each sector; to check the documentation for each area, such as reports, schedules, maintenance report, among others; to make the disposal of each type of waste, etc.

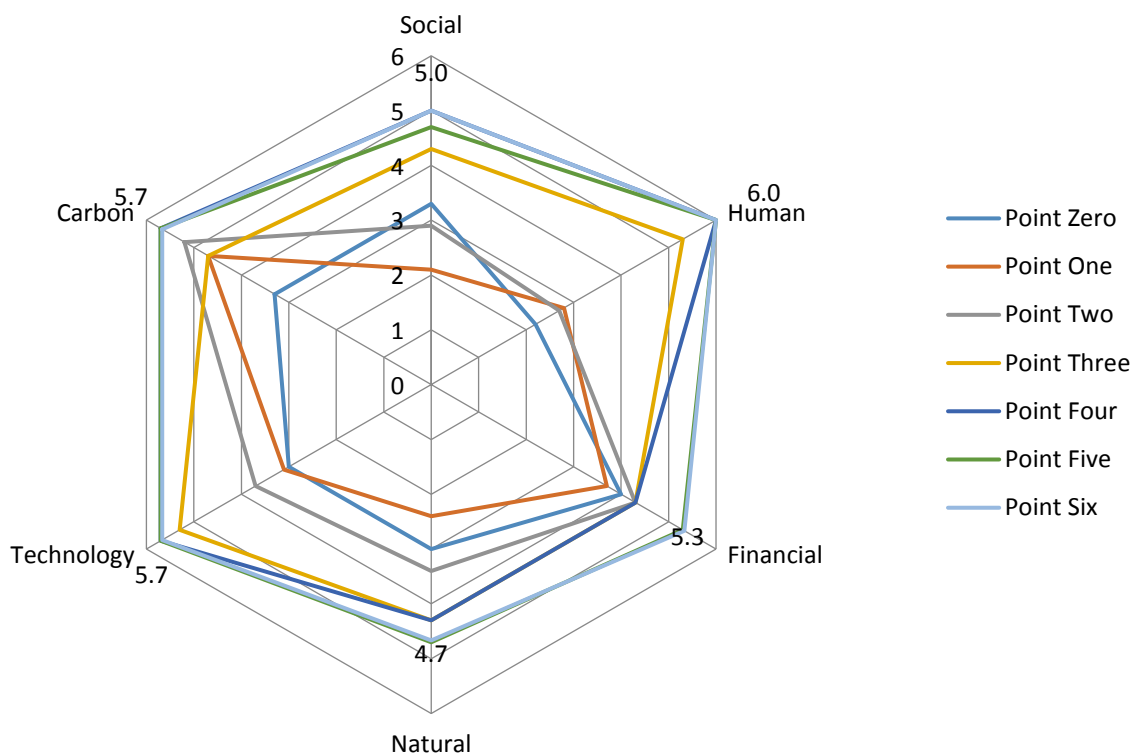
Regarding the production quality indicator, Kitambar has quality control of its products, including tests for the raw material and final product. The ceramic has a quality control center inside the company, where employees are trained to evaluate the quality control of the ceramic products. The factory also has PSQ certification (Quality Program) for the tiles.

Carbon	Point Zero	Point One	Point Two	Point Three	Point Four	Point Five	Point Six
	3.3	4.7	5.2	4.7	5.7	5.7	5.7

Historic Analysis: the Carbon resource remained the same at this Point, especially because the factory has conducted a formal stakeholder consultation, where a questionnaire was forwarded to evaluate the participants' opinion, and no negative comments had been registered.

Regarding the green marketing indicator, the factory established plans to invest in green marketing and also had an advertising company to help with the marketing strategies.

4.5.3 Performance Hexagon



4.6 Non-Permanence Risk Analysis

Not applicable.

5 SAFEGUARDS

5.1 Social, Economic and Environmental Impacts

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 used as fertilizer.

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

5.2 Local Stakeholder Consultation

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 local stakeholder consultation access in place and working.

No comments/complaints have been observed during the monitoring period.

6 VERIFICATION CONCLUSION

ESPL, contracted by Sustainable Carbon – Projetos Ambientais Ltda., has performed the independent verification of the emission reductions of the VCS project “Kitambar Switching Fuel Project”, with VCS Project ID 33, for the monitoring period from 01/04/2016 to 31/12/2016 (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 01, the monitoring plan contained in the VCS-PD – version 02 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 from 01/04/2016 to 31/12/2016 (including both days) 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 01 and the monitoring plan contained in the VCS-PD.

Therefore, ESPL is able to certify that the emission reductions from the VCS project “Kitambar 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. No decrease in the performance of any resource has been verified for this monitoring period;
- the report has been validated by an accredited entity, an on-site visit 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 confirms that the project is in line with all applicable criteria for the verification.

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

Verification period: From 01-April-2016 to 31-December-2016.

SOCIALCARBON verification period: From 01-April-2016 to 31-December-2016.

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)
2016	32,562	0	0	32,562
Total	32,562	0	0	32,562



Kaviraj Singh
Managing Director

Dated- 06/09/2018

APPENDIX I: references

No.	Title	References
1.	<u>Methodology</u> AMS-I.E – Switch from non-renewable biomass for thermal applications by the user	version 01
2.	<u>Biomass</u> Records of biomass purchase	2016
3.	<u>Production</u> Records of production by type of ceramic devices	2016
4.	<u>Licenses</u> - Renewal of Operation License # 05.16.08.003514-1 – factory operation – CPRH – valid until 16/09/2018 - Renewal of the Operation License # 05.15.08.003942-5 – extraction of clay of E J de França – CPRH – valid until 17/08/2018	16/09/2016 18/08/2015
5.	MR – draft/revised	version 1 – 23/02/2018 version 2 – 28/04/2018
6.	MR – final	version 3 – 05/09/2018
7.	ER Spreadsheet – draft	version 1
8.	ER Spreadsheet – final	version 2
9.	VCS-PD (Registered)	version 02 – 17/12/2008
10.	IPCC publications	www.ipcc-nggip.iges.or.jp
11.	UNFCCC	http://cdm.unfccc.int
12.	VCS	http://www.v-c-s.org/

APPENDIX II: REFERENCES – SOCIALCARBON

No.	Title	References
1.	SOCIALCARBON Report – draft	version 01 – 27/02/2018
2.	SOCIALCARBON Report – final	version 2 – 05/09/2018
3.	<u>Social Resource:</u> - Human resources documents - Pictures - CIPA minutes - ICIA's website: http://www.icia.org.br/o-icia/parceiros - Kitambar's website: http://www.kitambar.com.br/	2016 2016
4.	<u>Human Resource:</u> - Pictures - Attendance lists of courses performed by the employees - Certificates of training courses - PCMSO (Program of Medical Control of Occupational Health) SESI - PPRA (Program of Prevention of Environmental Risks) – SESI	2016 2016 22/03/2016 24/05/2016
5.	<u>Financial Resource:</u> - Records of purchase of sawdust and algaroba wood - Report of daily production of ceramic device - Receipts of payment of the VCU's	2016 2016 2016
6.	<u>Natural Resource:</u> - Pictures - Anicer's website: http://www.anicer.com.br/index.asp?pg=institucional_direita.asp&secao=17&ex=3 - Licenses: - o Renewal of Operation License # 05.16.08.003514-1 – factory operation – CPRH – valid until 16/09/2018 - o Renewal of the Operation License # 05.15.08.003942-5 – extraction of clay of E J de França – CPRH – valid until 17/08/2018	16/09/2016 18/08/2015
7.	<u>Carbon Resource:</u> - Pictures - Kitambar's website: http://www.kitambar.com.br/	2016
8.	Brazilian Red Ceramic factories Indicators	version 1.1
9.	Guidance for Completing SOCIALCARBON Reports	version 4.0
10.	SOCIALCARBON Standard	version 5.0
11.	SOCIALCARBON	http://www.socialcarbon.org/

APPENDIX III: ABBREVIATIONS

Abbreviations	Full texts
BE	Baseline Emission
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CIPA	Internal Commission of Labour Accidents Prevention
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CPRH	Environmental Agency of the State of Pernambuco
CL	Clarification Request
DNPM	National Department of Mineral Protection
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)
IBAMA	Brazilian Institute of the Environment and Renewable Natural Resources
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
SESI	Social Service of the Industry
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 IV: FINDINGS

Table 1. CL from this verification

CL ID	01	Section no.	3.3	Date: 08/03/2018
Description of CL				
At Section 2.2.2, not all project description deviations have been listed.				
Project participant response				Date: 28/04/2018
The project description deviations were described at Section 2.2.2.				
DOE assessment				Date: 15/05/2018
All project description deviations are now listed at Section 2.2.2.				

CL ID	02	Section no.	5.2	Date: 08/03/2018
Description of CL				
At Section 2.4.2 of the MR, it is not clear if there were any comments during the present monitoring period.				
Project participant response				Date: 28/04/2018
The information was updated at Section 2.4.2, there was no negative comments during the				
DOE assessment				Date: 15/05/2018
It is clear that there were no comments during the present monitoring period, which is in accordance with the interviews performed during the site visit.				

Table 2. CAR from this verification

CAR ID	03	Section no.	4.2	Date: 08/03/2018
Description of CAR				
The values of PR_y for the months of May and July/2016 are not in accordance with presented evidences.				
Project participant response				Date: 28/04/2018
The values of PR_y from May and July/2016 were corrected.				
DOE assessment				Date: 15/05/2018
All values of PR_y are now in accordance with evidences presented to the verification team.				

Table 3. FAR from this verification

Not applicable

APPENDIX V: FINDINGS – SOCIALCARBON

Table 1. CL from this verification

Not applicable

Table 2. CAR from this verification

Not applicable

Table 3. FAR from this verification

Not applicable.

APPENDIX VI: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWERS

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		
Financial Expert	Yes		
Technical Reviewer	Yes		
TA Expert	Yes (TA 1.2, 13.1)		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Kumar Gautam	Date	01/03/2018

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)		
Local expert	Brazil, Chile, Honduras		
Financial Expert	Yes		
Technical Reviewer	Yes		
TA Expert	Yes (TA 1.1, 1.2, 5.1, 13.1)		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Kumar Gautam	Date	01/03/2018