



**Verification and certification report form for
GS4SS project activities
(Version 03.0)**

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title and GS reference number of the project activity	Buenos Aires Renewable Energy Project Ref.: GS2290
Scale of the project activity	<input type="checkbox"/> Large-scale <input checked="" type="checkbox"/> Small-scale
Version number of the verification and certification report	3.0
Completion date of the verification and certification report	17/09/2021
Monitoring period number and duration of this monitoring period	Monitoring Period No: 3 (2 nd MP as a GS project activity) 01/09/2017 – 31/12/2019 (including both days)
Version number of the monitoring report to which this report applies	06
Crediting period of the project activity corresponding to this monitoring period	Fixed – 10 years 01/03/2012 – 31/12/2019 (including both days) – <i>the total 10 years period includes the crediting period under VCS</i>
Project participants	- Sustainable Carbon - Projetos Ambientais Ltda - Patrícia Mattos de Cunha – EPP (Buenos Aires Ceramic)
Host Party	Brazil
Applied methodologies and standardized baselines	AMS-I.E: Switch from Non-Renewable Biomass for Thermal Applications by the User – version 5.0
Mandatory sectoral scopes	Sectoral Scope: 1
Conditional sectoral scopes, if applicable	-
Estimated amount of certified SDG impacts for this monitoring duration in the registered PDD	SDG 7: 106.30 TJ SDG 8: 03 health and safety trainings SDG 13: 63,053 tCO ₂ e
Certified amount of SDG impacts for this monitoring period	SDG 7: 241.62 TJ SDG 8: 07 health and safety trainings SDG 13: 30,550 tCO ₂ e (<i>the calculated ERs for the period is 49,612 tCO₂e. Nevertheless, due to a FAR raised by GS at the previous monitoring period, an amount of 19,062 tCO₂e was deducted from the verified amount</i>)
Name and UNFCCC reference number of the DOE	Earthood Services Private Limited
Name, position and signature of the approver of the verification and certification report	Dr. Kaviraj Singh – Managing Director

SECTION A. Executive summary

Brief summary of the project activity

The project activity consists in one red ceramic factory located in the municipality of Buenos Aires, State of Pernambuco, Brazil.

The project activity reduces GHG emissions by the substitution of non-renewable biomass for renewable biomasses to generate thermal energy. As renewable biomasses, the project uses algarroba wood, wood residues, eucalyptus and native wood with sustainable management plan, which are used to feed the ceramic kilns.

Scope of verification

Sustainable Carbon - Projetos Ambientais Ltda has contracted ESPL to conduct the verification and certification of emission reductions reported for the GS project activity “Buenos Aires Renewable Energy Project” for the period from 01/09/2017 to 31/12/2019 (including both days).

The verification is the periodic independent review and *ex post* determination of the certified SDG impacts that have occurred due to the registered GS project activity during the defined monitoring period.

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

- i. the project activity has been implemented and operated as per the registered PDD or any approved revised PDD, and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- ii. the provided monitoring report and other supporting documents are complete, in accordance with the latest applicable version of the completeness checklist for requests for issuance of VERs, verifiable, and in accordance with applicable CDM and GS requirements;
- iii. the actual monitoring system and procedures comply with the monitoring system and procedures described in the monitoring plan, any revised approved monitoring plan, the approved methodology including applicable tool(s) and/or, where applicable, the approved standardized baseline;
- iv. the data are recorded and stored as per the monitoring methodology, including applicable tool(s) and, where applicable, the standardized baseline.

Verification process

The verification process is conducted as per internal CDM Quality Manual, which includes the following steps:

- a. contract with Sustainable Carbon - Projetos Ambientais Ltda and appointment of verification team and technical review team;
- b. completeness check of monitoring report;
- c. desk review;
- d. physical on-site inspection;
- e. issuance of verification findings;
- f. reporting, calculation checks, QA/QC and resolution of findings;
- g. issuance of draft verification report;
- h. independent technical review of the project documentation;
- i. issuance of the final verification report;
- j. submission of the request for issuance, as appropriate.

Conclusion

ESPL has performed the verification of the GS PA “Buenos Aires Renewable Energy Project”, with GS Ref. Number 2290 for the monitoring period from 01/09/2017 to 31/12/2019. The verification team has confirmed the implementation of the project as per description in the PDD, the monitoring plan of the PDD and the application of the monitoring methodology (AMS-I.E – version 5.0).

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 49,612 tCO₂e in the above-mentioned monitoring period. Nevertheless, due to a FAR raised by GS at the previous monitoring period, an amount of 19,062 tCO₂e shall be deducted from the verified amount (refer to Section E.2 below). Therefore, the verified emission reductions amount to be issued for this monitoring period is **30,550 tCO₂e**.

The verification team concluded that the registered GS PA complies with all relevant CDM and GS procedures/standards/guidance and, therefore, the request for issuance is being submitted in accordance with the GS procedures.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader	OR	Cruz	Sergio	Verifit	Y	Y	Y	Y
2.	Local Expert	OR	Cruz	Sergio	Verifit	Y	Y	Y	Y
3.	Methodological Expert	OR	Cruz	Sergio	Verifit	Y	Y	Y	Y
4.	Technical Expert	OR	Cruz	Sergio	Verifit	Y	Y	Y	Y

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	OR	Sebben	Marcelo	Verifit
2.	Technical Expert	OR	Sebben	Marcelo	Verifit
3.	Approver	IR	Singh	Kaviraj	Central Office

SECTION C. Application of materiality

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Internal control sheet monitored by employees	Medium	Manual counting of produced devices	The production is crosschecked with records of consumed biomass.
2.	Error in transferring the data to ER sheet	Medium	Transfer of data from source to ER calculation involve human intervention and might lead to inconsistencies.	The values reported in ER sheet to be crosschecked with their respective source data. The first value, last value and the total of the columns for all parameters reported at the interval of were verified from the source data.
3.	Calculation of some parameters	Low	Human errors entering formulas and data.	All formulas are checked and compared to applied

				<i>methodology and tools. In addition, entry data are crosschecked with raw data.</i>
--	--	--	--	---

C.2. Consideration of materiality in conducting the verification

In accordance with CDM VVS for project activities – version 02.0 – para. 326, the prescribed threshold for materiality for the project activity is 5.0%, as it is a small scale project.

SECTION D. Means of verification

D.1. Desk/document review

The verification is performed primarily as a desk review of the documents submitted at various stages of assessments. The review is performed by assessment team using dedicated protocols (checklists). The assessment team cross checks the information provided in the documents (MR) and information from sources other than those used, if available, and conducts independent background investigations.

ESPL conducted a desk review, as under:

- a review of the data and information presented to verify their completeness
- a review of the monitoring plan (as described in VCS-PD, GS Gap Analysis and Passport), 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
- a review of calculations and assumptions made in determining the GHG data and emission reductions;
- 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.

A complete list of documents/evidences reviewed is included as Appendix 3.

D.2. On-site inspection

Duration of on-site inspection: 15/01/2020				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening meeting at the Ceramic	Buenos Aires	15/01/2020	Sergio Cruz
2.	Implementation and operation of project activity	Buenos Aires	15/01/2020	Sergio Cruz
3.	Physical inspection of the project activity	Buenos Aires	15/01/2020	Sergio Cruz
4.	Management and operational system	Buenos Aires	15/01/2020	Sergio Cruz
5.	Review of ER calculations in accordance with applied methodology and relevant tools Review of monitored data and relevant document	Buenos Aires	15/01/2020	Sergio Cruz
6.	Interview with the local stakeholder	Buenos Aires	15/01/2020	Sergio Cruz
7.	Presentation of findings	Buenos Aires	15/01/2020	Sergio Cruz
8.	Closing meeting	Buenos Aires	15/01/2020	Sergio Cruz

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Felipe	Elleny	Buenos Aires Ceramic	15/01/2020	Monitoring of production, biomass and SD Indicators	Sergio Cruz
2.	Fernandes	Yara	Sustainable Carbon	15/01/2020	Monitoring of project activity and Review of monitored data ER calculations	Sergio Cruz

3.	Prado	Guilherme	Sustainable Carbon	15/01/2020	Monitoring of project activity and Review of monitored data ER calculations	Sergio Cruz
4.	Cunha	Rodolfo	Buenos Aires Ceramic	15/01/2020	Management of the project activity; management of ceramic and market conditions	Sergio Cruz
5.	Cardoso Soares	Márcio	Buenos Aires Ceramic	15/01/2020	Biomass supplier (algaroba)	Sergio Cruz
6.	Araújo	Edmilson	Buenos Aires Ceramic	15/01/2020	Ceramic operations	Sergio Cruz
7.	Silva	José Roberto	Buenos Aires Ceramic	15/01/2020	Employees' working conditions	Sergio Cruz
8.	Pereira	Edmilson	Buenos Aires Ceramic	15/01/2020	Employees' working conditions	Sergio Cruz

D.4. Sampling approach

Not applicable, as no sampling approach was used during the present verification.

D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	1	-	-
Compliance of the project implementation and operation with the registered PDD	-	-	-
Post-registration changes	-	-	1
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	2	2	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	2	1	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)			
Total	5	3	1

SECTION E. Verification findings

E.1. Compliance of the monitoring report with the monitoring report form

Means of verification	The MR was crosschecked with the Gold Standard for the Global Goals Monitoring report available at the GS website and with the instructions for filling it out.
Findings	CL 01
Conclusion	A valid version of the monitoring report template (version 1) available at the GS website has been used.

	It has been filled out in accordance with the instructions for filling out the monitoring report form.
--	--

E.2. Remaining forward action requests from validation and/or previous verifications

The following FAR was raised at the previous verification: as the site visit of the previous verification did not follow GS guidelines of a default site visit once every three years and as the PP will claim the issuance of the total amount of VERs of the entire monitoring period (i.e. 01/03/2012 – 31/08/2017), the verified ERs from 01/03/2012 to 27/09/2012 will have to be deducted from the total ERs of the next monitoring period.

Therefore, the amount of 19,062 tCO_{2e} is being deducted from the total verified amount of the present monitoring period, referring to the VERs accounted for the period from 01/03/2012 to 27/09/2012. Refer to FAR 01 in Appendix 4.

E.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	During the on-site visit, the verification team checked the implementation status of the project activity as well as the monitoring equipment. In addition, interviews with personnel and PP's representatives were also performed. The project activity consists in one red ceramic factory located in the municipality of Buenos Aires, State of Pernambuco, Brazil. This project activity reduces the greenhouse gases emissions by the substitution of non-renewable biomass for renewable biomasses to generate thermal energy. As renewable biomasses, the project uses algarroba wood, wood residues, eucalyptus and native wood with sustainable management plan, which are used to feed the three Hoffmann kilns of the ceramic. The geographical coordinates of the ceramic are: 7° 58' 00" S and 37° 37' 59" W.
Findings	-
Conclusion	According to the information verified during the site visit, the verification team could confirm that all physical features (technology, project equipment, monitoring equipment and biomasses) of the registered GS project activity are in place and that the project participants have operated the project activity as per the approved VCS-PD during the present monitoring period. There are no actual or proposed deviations or changes in the implementation of the registered project activity.

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents¹

No temporary deviations from the registered monitoring plan or from monitoring methodology have been submitted prior and/or during the current monitoring period.

E.4.2. Corrections

No corrections have been identified prior and/or during the present monitoring period.

E.4.3. Changes to the start date of the crediting period

Not applicable, as there was no change in the start date of the crediting period.

E.4.4. Inclusion of a monitoring plan

Not applicable, as monitoring plan is part of the registered PD.

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

¹ Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

As per the registered GS Passport, the monitoring of Indicator 1 – Air Quality – of the Sustainability Monitoring Plan was supposed to be done by Ringelmann smoke charts.

Nevertheless, the Air Quality is being monitored by a more complex and efficient method for the monitoring of atmospheric emissions, with specific equipment (gas measurement equipment) for this task and with the issuance of an atmospheric emissions report. This monitoring is a more trustable and traceable method and it is a requirement of the local environmental agency (CPRH) to issue the operation license of the ceramic.

This approach has already been used in the previous monitoring period and accepted by The Gold Standard.

In addition, the PPs are submitting along with this verification a request for a Permanent change from registered monitoring plan of parameters Emissions to the atmosphere; Procedures related to the control and disposal of ashes; and Number of Health and Security trainings and campaigns conducted. By the proposed monitoring, the parameters are no longer assessed based on SocialCarbon monitoring indicators, but by objective results.

Therefore, the assessments are as follows:

- a. Emissions to the atmosphere: the parameter is assessed according to three reference scores, according to the actual scenario of the project activity;
- b. Procedures related to the control and disposal of ashes: the parameter is assessed by number of 40 kg storage bags of ashes, which is the way the ashes are collected;
- c. Number of Health and Security trainings and campaigns conducted: number of trainings and campaigns conducted.

The revised monitoring plan clearly describes the permanent change to the registered monitoring plan.

The change does not reduce the level of accuracy of the monitoring compared with the requirements contained in the registered monitoring plan.

E.4.6. Changes to the project design

No changes to the project design of the registered project activity took place prior and/or during the current monitoring period.

E.4.7. Changes specific to afforestation and reforestation project activities

Not applicable, as it is not an afforestation or reforestation PA.

E.5. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents

Means of verification	The MP of the approved VCS-PD was reviewed against the monitoring requirements of the applied methodology and applicable tools.
Findings	-
Conclusion	The MP of the project activity is totally in accordance with the applied methodology (AMS-I.E – version 5.0 – Switch from Non-Renewable Biomass for Thermal Applications by the User).

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	<p>All ex-ante parameters listed in MR used to calculate baseline, project, and leakage GHG emissions of the PA were checked against the registered VCS-PD. The ex-ante parameters of the registered VCS-PD were verified in order to check its consistency with CDM tools and guidance to calculate the ex-ante value and methodological requirements for the baseline, project and leakage emission calculations.</p> <p>All the fixed parameters refer to indicator SDG 13 and their values are:</p> <ul style="list-style-type: none"> - <i>EF_{projected_fossilfuel}</i>: 81.6 tCO₂/TJ (as per Section 3 of the Gap Analysis Report); - <i>NCV_{biomass}</i>: 0.015 TJ/ton (as per Section 3 of the Gap Analysis Report); - <i>ρ_{biomass}</i>: 0.8072 ton/m³ (as per Section 3 of the Gap Analysis Report); - <i>BF_y</i>: 0.7904 ton of wood per thousand of ceramic pieces (a as per Section 3 of the Gap Analysis Report).
Findings	-

Conclusion	The values in the MR and corresponding emission reduction calculations spreadsheet are consistent with the registered Gap Analysis Report. The applied values are correct.
-------------------	--

E.6.2. Data and parameters monitored

Means of verification	<p>All monitored parameters listed in MR used to calculate baseline, project, and leakage GHG emissions of the PA were checked against the registered VCS-PD. The parameters of the registered VCS-PD were verified in order to check its consistency with CDM tools and guidance to ER calculations.</p> <p>The monitored parameters and their values are:</p>	
	<p>1. SDG 13 – PR_y: Amount of products produced in year y</p>	
	Criteria/Requirements	Assessment Observation
	Measuring / Reading / Recording frequency	<p>Manual control of devices burnt in the kiln. Measurements are done by an internal control sheet monitored by employees on daily basis by operating oven.</p> <p>The production by year (in thousands of pieces) is:</p> <ul style="list-style-type: none"> - 2017: 6,674; - 2018: 23,220; - 2019: 29,484.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	N/A
	Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
	Calibration frequency / interval	N/A
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
	Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
	Is(are) the calibration(s) valid for the entire reporting period?	N/A

Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A																				
How were the values in the monitoring report verified?	The values of the MR were verified their consistency with internal control sheet																				
If applicable, has the reported data been crosschecked with other available data?	The values were crosschecked with records of the amount of consumed biomass																				
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate.																				
In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 of the CDM Project Standard for project activities – version 02.0?	N/A																				
2. SDG 13 – $Q_{renbiomass}$: Amount of renewable biomass used during year y of the crediting period																					
Criteria/Requirements	Assessment Observation																				
Measuring / Reading / Recording frequency	Purchase invoice, delivery notes or other documents concerning the acquisition of renewable biomasses, whenever biomass is delivered. The amounts of used renewable biomass by year (in tons) are: <table border="1"> <thead> <tr> <th></th> <th>2017</th> <th>2018</th> <th>2019</th> </tr> </thead> <tbody> <tr> <td>Wood from forest mgt</td> <td>81.60</td> <td>379.38</td> <td>24.22</td> </tr> <tr> <td>Algaroba</td> <td>2,318.00</td> <td>12,070.70</td> <td>8,905.30</td> </tr> <tr> <td>Wood residues</td> <td>0.00</td> <td>0.00</td> <td>4,692.31</td> </tr> <tr> <td>Eucalyptus</td> <td>204.00</td> <td>0.00</td> <td>0.00</td> </tr> </tbody> </table>		2017	2018	2019	Wood from forest mgt	81.60	379.38	24.22	Algaroba	2,318.00	12,070.70	8,905.30	Wood residues	0.00	0.00	4,692.31	Eucalyptus	204.00	0.00	0.00
	2017	2018	2019																		
Wood from forest mgt	81.60	379.38	24.22																		
Algaroba	2,318.00	12,070.70	8,905.30																		
Wood residues	0.00	0.00	4,692.31																		
Eucalyptus	204.00	0.00	0.00																		
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes																				
Monitoring equipment	N/A																				
Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A																				

	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A			
	Calibration frequency / interval	N/A			
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A			
	Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A			
	Is(are) the calibration(s) valid for the entire reporting period?	N/A			
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A			
	How were the values in the monitoring report verified?	The values of the MR were verified their consistency with invoices and delivery notes			
	If applicable, has the reported data been crosschecked with other available data?	The values were crosschecked with production output			
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate			
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 of the CDM Project Standard for project activities – version 02.0?	N/A			
	<p>3. SDG 13 – $f_{NRB,y}$: Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable using survey methods</p> <table border="1"> <thead> <tr> <th>Criteria/Requirements</th> <th>Assessment Observation</th> </tr> </thead> <tbody> <tr> <td>Measuring / Reading / Recording frequency</td> <td>National and international articles, databases and data monitored by the project developer such as project activities about the availability of woody biomass in the Caatinga biome, done for each monitoring period. Nevertheless, as at the previous verification, it was used the value given at the Gap Analysis Report of the project, which presented a more</td> </tr> </tbody> </table>		Criteria/Requirements	Assessment Observation	Measuring / Reading / Recording frequency
Criteria/Requirements	Assessment Observation				
Measuring / Reading / Recording frequency	National and international articles, databases and data monitored by the project developer such as project activities about the availability of woody biomass in the Caatinga biome, done for each monitoring period. Nevertheless, as at the previous verification, it was used the value given at the Gap Analysis Report of the project, which presented a more				

		conservative value. Therefore, this value was used again to provide a more conservative calculation. The calculated value is 90.93%.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	N/A
	Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
	Calibration frequency / interval	N/A
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
	Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
	Is(are) the calibration(s) valid for the entire reporting period?	N/A
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
	How were the values in the monitoring report verified?	The values of the MR were verified their consistency calculations done according to data about the availability of woody biomass in the Caatinga biome
	If applicable, has the reported data been crosschecked with other available data?	N/A
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate

<p>In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 of the CDM Project Standard for project activities – version 02.0?</p>	<p>N/A</p>
<p>4. SDG 13 – Origin of Renewable Biomass: Renewable origin of the biomass</p>	
<p>Criteria/Requirements</p>	<p>Assessment Observation</p>
<p>Measuring / Reading / Recording frequency</p>	<p>Purchase invoice, delivery notes or other documents concerning the acquisition of renewable biomasses, whenever biomass is delivered. Those documents concerning the acquisition of biomasses, which are controlled, and they evidence the origin of each biomass. By the origin of the biomass, it is possible to check if it is a renewable biomass, as per the applied methodology.</p>
<p>Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?</p>	<p>Yes</p>
<p>Monitoring equipment</p>	<p>N/A</p>
<p>Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?</p>	<p>N/A</p>
<p>Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?</p>	<p>N/A</p>
<p>Calibration frequency / interval</p>	<p>N/A</p>
<p>Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?</p>	<p>N/A</p>
<p>Is the calibration of measuring equipment carried out by an accredited person or institution?</p>	<p>N/A</p>
<p>Is(are) the calibration(s) valid for the entire reporting period?</p>	<p>N/A</p>
<p>Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?</p>	<p>N/A</p>

How were the values in the monitoring report verified?	N/A
If applicable, has the reported data been crosschecked with other available data?	Interviews with biomass suppliers
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate
In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 of the CDM Project Standard for project activities – version 02.0?	N/A
5. SDG 13 – Leakage due to competing uses of biomass	
Criteria/Requirements	Assessment Observation
Measuring / Reading / Recording frequency	Annually calculated based on the surplus of each biomass. Although monitored annually by the PP, the value given is the ex-ante calculated (2012), according to the CDM General Guidance on Leakage in Biomass Project Activities – version 03 – Section 18, as the PP shall evaluate ex-ante if there is a surplus of the biomass in the region of the project activity, which is not utilized. Thus, the leakage is 0 (zero).
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
Monitoring equipment	N/A
Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
Calibration frequency / interval	N/A
Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A

	Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A																																
	Is(are) the calibration(s) valid for the entire reporting period?	N/A																																
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A																																
	How were the values in the monitoring report verified?	The values of the MR were verified against surplus calculations according to PP's methodology developed for other similar projects																																
	If applicable, has the reported data been crosschecked with other available data?	N/A																																
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate																																
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 of the CDM Project Standard for project activities – version 02.0?	N/A																																
<p>6. SDG 13 – Leakage of non-renewable woody biomass</p>																																		
	<table border="1"> <thead> <tr> <th>Criteria/Requirements</th> <th>Assessment Observation</th> </tr> </thead> <tbody> <tr> <td>Measuring / Reading / Recording frequency</td> <td> Annually monitored according to applied methodology. The value was calculated in accordance with applied methodology, where B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which cases, surveys are not required. The value of leakage by year is as follows: <table border="1"> <tr> <td>2017</td> <td>294 tCO₂e</td> </tr> <tr> <td>2018</td> <td>1,022 tCO₂e</td> </tr> <tr> <td>2019</td> <td>1,297 tCO₂e</td> </tr> </table> </td> </tr> <tr> <td>Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?</td> <td>Yes</td> </tr> <tr> <td>Monitoring equipment</td> <td>N/A</td> </tr> <tr> <td>Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?</td> <td>N/A</td> </tr> </tbody> </table>	Criteria/Requirements	Assessment Observation	Measuring / Reading / Recording frequency	Annually monitored according to applied methodology. The value was calculated in accordance with applied methodology, where B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which cases, surveys are not required. The value of leakage by year is as follows: <table border="1"> <tr> <td>2017</td> <td>294 tCO₂e</td> </tr> <tr> <td>2018</td> <td>1,022 tCO₂e</td> </tr> <tr> <td>2019</td> <td>1,297 tCO₂e</td> </tr> </table>	2017	294 tCO ₂ e	2018	1,022 tCO ₂ e	2019	1,297 tCO ₂ e	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes	Monitoring equipment	N/A	Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A	<table border="1"> <thead> <tr> <th>Criteria/Requirements</th> <th>Assessment Observation</th> </tr> </thead> <tbody> <tr> <td>Measuring / Reading / Recording frequency</td> <td> Annually monitored according to applied methodology. The value was calculated in accordance with applied methodology, where B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which cases, surveys are not required. The value of leakage by year is as follows: <table border="1"> <tr> <td>2017</td> <td>294 tCO₂e</td> </tr> <tr> <td>2018</td> <td>1,022 tCO₂e</td> </tr> <tr> <td>2019</td> <td>1,297 tCO₂e</td> </tr> </table> </td> </tr> <tr> <td>Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?</td> <td>Yes</td> </tr> <tr> <td>Monitoring equipment</td> <td>N/A</td> </tr> <tr> <td>Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?</td> <td>N/A</td> </tr> </tbody> </table>	Criteria/Requirements	Assessment Observation	Measuring / Reading / Recording frequency	Annually monitored according to applied methodology. The value was calculated in accordance with applied methodology, where B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which cases, surveys are not required. The value of leakage by year is as follows: <table border="1"> <tr> <td>2017</td> <td>294 tCO₂e</td> </tr> <tr> <td>2018</td> <td>1,022 tCO₂e</td> </tr> <tr> <td>2019</td> <td>1,297 tCO₂e</td> </tr> </table>	2017	294 tCO ₂ e	2018	1,022 tCO ₂ e	2019	1,297 tCO ₂ e	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes	Monitoring equipment	N/A	Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A
Criteria/Requirements	Assessment Observation																																	
Measuring / Reading / Recording frequency	Annually monitored according to applied methodology. The value was calculated in accordance with applied methodology, where B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which cases, surveys are not required. The value of leakage by year is as follows: <table border="1"> <tr> <td>2017</td> <td>294 tCO₂e</td> </tr> <tr> <td>2018</td> <td>1,022 tCO₂e</td> </tr> <tr> <td>2019</td> <td>1,297 tCO₂e</td> </tr> </table>	2017	294 tCO ₂ e	2018	1,022 tCO ₂ e	2019	1,297 tCO ₂ e																											
2017	294 tCO ₂ e																																	
2018	1,022 tCO ₂ e																																	
2019	1,297 tCO ₂ e																																	
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes																																	
Monitoring equipment	N/A																																	
Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A																																	
Criteria/Requirements	Assessment Observation																																	
Measuring / Reading / Recording frequency	Annually monitored according to applied methodology. The value was calculated in accordance with applied methodology, where B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which cases, surveys are not required. The value of leakage by year is as follows: <table border="1"> <tr> <td>2017</td> <td>294 tCO₂e</td> </tr> <tr> <td>2018</td> <td>1,022 tCO₂e</td> </tr> <tr> <td>2019</td> <td>1,297 tCO₂e</td> </tr> </table>	2017	294 tCO ₂ e	2018	1,022 tCO ₂ e	2019	1,297 tCO ₂ e																											
2017	294 tCO ₂ e																																	
2018	1,022 tCO ₂ e																																	
2019	1,297 tCO ₂ e																																	
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes																																	
Monitoring equipment	N/A																																	
Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A																																	
Measuring / Reading / Recording frequency	Annually monitored according to applied methodology. The value was calculated in accordance with applied methodology, where B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which cases, surveys are not required. The value of leakage by year is as follows: <table border="1"> <tr> <td>2017</td> <td>294 tCO₂e</td> </tr> <tr> <td>2018</td> <td>1,022 tCO₂e</td> </tr> <tr> <td>2019</td> <td>1,297 tCO₂e</td> </tr> </table>	2017	294 tCO ₂ e	2018	1,022 tCO ₂ e	2019	1,297 tCO ₂ e																											
2017	294 tCO ₂ e																																	
2018	1,022 tCO ₂ e																																	
2019	1,297 tCO ₂ e																																	
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes																																	
Monitoring equipment	N/A																																	
Is the accuracy of the monitoring equipment as stated in the monitoring plan? If the monitoring plan does not specify the accuracy of the monitoring equipment, does the accuracy of the monitoring equipment comply with local/national standards, or as per the manufacturer's specification?	N/A																																	

	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	N/A
	Calibration frequency / interval	N/A
	Is the calibration interval in line with the monitoring plan and/or methodology? If the monitoring plan does not specify the frequency of calibration, is the selected frequency in accordance with the local/national standards, or as per the manufacturer's specifications?	N/A
	Is the calibration of measuring equipment carried out by an accredited person or institution?	N/A
	Is(are) the calibration(s) valid for the entire reporting period?	N/A
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	N/A
	How were the values in the monitoring report verified?	The values of the MR were verified against biomass consumption of the ceramic, where the leakage is conservatively calculated in accordance with applied methodology, in which cases, surveys are not required.
	If applicable, has the reported data been crosschecked with other available data?	N/A
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by paragraph 231 of the CDM Project Standard for project activities – version 02.0?	N/A
7. SDG 13 – Emissions to the atmosphere		
Criteria/Requirements		Assessment Observation
Measuring / Reading / Recording frequency		Annually monitoring using evaluations through annual reports as recommended by CPRH. Thus, this monitoring is in accordance with environmental requirements of the local authority and approved with the issuance of environmental license. The value is: Score 3 - There is an emission measurement report, and the parameters are within the limit defined by the legislation.

	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	How were the values in the monitoring report verified?	Annual reports were checked.
	If applicable, has the reported data been cross-checked with other available data?	N/A
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate.
8. SDG 13 – Procedures related to the control and disposal of ashes		
Criteria/Requirements		Assessment Observation
Measuring / Reading / Recording frequency		The ashes are collected and used as fertilizer for a eucalyptus plantation. They are monitored whenever they are collected, which is done in storage bags of 40 kg (each). The value is: 742 storage bags of 40 kg.
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?		Yes
How were the values in the monitoring report verified?		The report of control was checked and during the site visit, the procedures were identified
If applicable, has the reported data been cross-checked with other available data?		N/A
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?		Data management system was found to be reliable and appropriate
9. SDG 8 – Number of Health and Security trainings and campaigns conducted		
Criteria/Requirements		Assessment Observation
Measuring / Reading / Recording frequency		The parameter is monitored at each monitoring period. Monthly monitoring control of distribution and use of IPEs. In addition, the ceramic has PPRA and PCMSO to assess better working conditions to the employees. Moreover, the operational equipment presents security items, which provide a safer operation. The value is: 07 trainings and campaigns conducted.
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?		Yes

How were the values in the monitoring report verified?	Record of distribution of IPEs, PPRA, PCMSO, site visit and interviews	
If applicable, has the reported data been cross-checked with other available data?	N/A	
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate	
10. SDG 13 – Voluntary Emission Reductions issued		
Criteria/Requirements	Assessment Observation	
Measuring / Reading / Recording frequency	The parameter is monitored at each monitoring period. The value is 132,953 tCO _{2e} .	
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes	
How were the values in the monitoring report verified?	By previous VERs issuances (VCS and GS). The value is presented at https://registry.goldstandard.org/projects/details/309	
If applicable, has the reported data been cross-checked with other available data?	N/A	
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate	
11. SDG 13 – Revenues for biomass suppliers		
Criteria/Requirements	Assessment Observation	
Measuring / Reading / Recording frequency	Annually. The values are:	
	Wood from forest mgt	R\$ 1.22/ton
	Algaroba	R\$ 58.77/ton
	Wood residues	R\$ 11.84/ton
Eucalyptus	R\$ 0.51/ton	
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes	
How were the values in the monitoring report verified?	During the site visit, a biomass supplier was interviewed in order to assess the indicator.	
If applicable, has the reported data been cross-checked with other available data?	It was crosschecked with available biomass invoices.	
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate	
12. SDG 7 – Total energy produced from renewable sources		
Criteria/Requirements	Assessment Observation	

	Measuring / Reading / Recording frequency	Monthly and consolidated yearly calculating the total thermal energy produced with purchased biomasses. The value is 100%.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	How were the values in the monitoring report verified?	The values of the MR were verified against calculations total thermal energy produced with purchased biomasses
	If applicable, has the reported data been cross-checked with other available data?	N/A
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Data management system was found to be reliable and appropriate
Findings	CL 02; CL 04; CAR 01; CAR 02	
Conclusion	<p>The registered monitoring plan has been properly implemented and followed by the project participants.</p> <p>In addition, the parameters have been monitored in a correct and conservative way.</p> <p>Quality assurance and quality control procedures are in place.</p> <p>Therefore, the VT has concluded that the monitoring of the project activity is in accordance with the registered monitoring plan.</p> <p>It is important to note that the ceramic has a good relationship with local community and has open channels for this contact. In addition, the grievance mechanism is in place, with a responsible ceramic representative, telephone and e-mail public available and a formal record book for registration for any comment and/or complaints. For the present monitoring period, no grievances were received.</p>	

E.6.3. Implementation of sampling plan

Means of verification	Documents were checked and interviews with PP’s representatives and personnel were performed in order check if a sampling plan was used.
Findings	-
Conclusion	Not applicable as no sampling plan was used.

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	There are no instruments that require calibration within the operation and monitoring of the ceramic.
Findings	-
Conclusion	Not applicable

E.8. Assessment of data and calculation of emission reductions or net removals

E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	<p>The calculations of baseline emission have been done in accordance with registered monitoring plan and applied methodology. The equation used is as follows:</p> $BE_y = B_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossilfuel}$ <p>Where:</p> <ul style="list-style-type: none"> - BE_y: emissions reductions in year y; - B_y: quantity of woody biomass that was substituted or displaced;
------------------------------	--

	<ul style="list-style-type: none"> - $f_{NRB,y}$: fraction of woody biomass used in the absence of the project activity in year y that was established as non-renewable biomass using survey methods; - $NCV_{biomass}$: Net calorific value of non-renewable biomass that was substituted; - $EF_{projected_fossilfuel}$: emission factor for substitution of non-renewable woody biomass by similar consumers. <p style="text-align: center;">$BE_y = 52,225 \text{ tCO}_2\text{e}$</p>
Findings	CAR 03; CL 05
Conclusion	<p>The verification team confirms that:</p> <ol style="list-style-type: none"> a. the monitored data was available in accordance with the registered monitoring plan; b. the reported data were crosschecked, as prescribed in the revised approved VCS-PD, with the relevant supporting and were found consistent; c. appropriate methods and formulae for calculating baseline GHG emissions have been followed; d. the assumptions, emission factors and default values that were applied in the calculations are correct and evidenced; e. the calculations are transparent, consistent, correct and complete.

E.8.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	<p>Project emission estimation has been done in accordance with registered monitoring plan, applied methodology and tool.</p> <p>As the applied methodology does not include any source of project emission, $PE_y = 0 \text{ tCO}_2\text{e}$</p>
Findings	-
Conclusion	The verification team confirms that the project emissions are in accordance with the applied methodology.

E.8.3. Calculation of leakage GHG emissions

Means of verification	<p>Leakage relating to non-renewable woody biomass has been accounted in accordance applied methodology AMS I.E, where B_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which cases surveys are not required.</p> <p>Therefore, the leakage for the entire period is:</p> <p style="text-align: center;">$LE_y = 2,613 \text{ tCO}_2\text{e}$</p>
Findings	-
Conclusion	<p>The verification team confirms that:</p> <ol style="list-style-type: none"> a. the monitored data was available in accordance with the registered monitoring plan; b. the reported data were crosschecked, as prescribed in the revised approved VCS-PD, with the relevant supporting and were found consistent; c. appropriate methods and formulae for calculating baseline GHG emissions have been followed; d. the assumptions, emission factors and default values that were applied in the calculations are correct and evidenced.

E.8.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	<p>The emission reductions from the project activity are based on baseline and project emissions only.</p> <p>The calculations presented at the final MR and corresponding ER calculation spreadsheet were found to be appropriate and in compliance with the provisions of the registered monitoring plan of the approved VCS-PD and applied methodology.</p>
------------------------------	--

	<p>The verification team confirms an audit trail that contains the evidences and records of validated figures. It is calculated as follows: $ER_y = BE_y - PE_y - LE_y$</p> <p>Thus, $ER_y = 49,612 \text{ tCO}_2\text{e}$</p> <p>Nevertheless, due to a FAR raised by GS at the previous monitoring period, an amount of 19,062 tCO₂e was deducted from the verified amount. Therefore, the certified ERs for the present monitoring period is 30,550 tCO₂e.</p>
Findings	CAR 01; CAR 02
Conclusion	The verification team confirms that appropriate methods and formulae for calculating baseline GHG emissions reductions have been followed. The summary table has been correctly presented at the MR and the figures are correct and justified.

E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	The actual emission reductions were checked against the estimates of the validation. The actual values are a little bit less than the estimated during validation.
Findings	-
Conclusion	The comparison of actual values of the monitoring period with the estimates in the registered VCS-PD is properly presented at the MR.

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	The actual ERs are lower to the estimated at the validation.
Findings	CL 03
Conclusion	No justification is required.

E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification	<p>Earthood Services Private Limited is able to certify that the emission reductions from the GS project activity "Buenos Aires Renewable Energy Project" – GS2290 for the monitoring period from 01/09/2017 to 31/12/2019 (including both days) is 49,612 tCO₂.</p> <p>Verified and certified emission reductions as per commitment period:</p> <table border="1"> <thead> <tr> <th>Commitment period</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>Up to 31/12/2012 (1st commitment period)</td> <td>0 tCO₂e</td> </tr> <tr> <td>From 01/01/2013</td> <td>49,612 tCO₂</td> </tr> </tbody> </table> <p>Nevertheless, it is important to note that due to a FAR raised by GS at the previous monitoring period, an amount of 19,062 tCO₂e was deducted from the verified amount. Therefore, the certified ERs for the present monitoring period is 30,550 tCO₂e.</p>	Commitment period	Amount	Up to 31/12/2012 (1 st commitment period)	0 tCO ₂ e	From 01/01/2013	49,612 tCO ₂
Commitment period	Amount						
Up to 31/12/2012 (1 st commitment period)	0 tCO ₂ e						
From 01/01/2013	49,612 tCO ₂						
Findings	-						
Conclusion	The total amount of GHG emissions reductions have been generated from 01/01/2013 onwards.						

E.9. Assessment of reported sustainable development co-benefits

Means of verification	Documents were checked and interviews with PP's representatives and personnel were performed in order assess if there are sustainable development co-benefits with the project activity.
Findings	-
Conclusion	The project activity promotes sustainable development by the use renewable energy, mitigating atmospheric pollution and improving the quality of employment for workers

E.10. Global stakeholder consultation

Means of verification	There were no comments for the period covered on this second monitoring report.
Findings	-
Conclusion	Not applicable as no comments have been observed.

SECTION F. Internal quality control

The draft verification report prepared by assessment team is reviewed by an independent Technical Review team (one or more members) to confirm if the internal procedures established and implemented by ESPL were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable GS and CDM requirements.

The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team are independent of the verification team.

During the technical review process, additional findings may be identified or the closed-out findings may be opened, which needs to be satisfactorily resolved before the request for issuance is submitted to GS. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that needs to be resolved by the verification team. The decision taken by the technical reviewer is final and is authorized on behalf of ESPL.

SECTION G. Verification opinion

ESPL, contracted by Sustainable Carbon - Projetos Ambientais Ltda, has performed the independent verification of the emission reductions for the GS Project “Buenos Aires Renewable Energy Project”, in Brazil, for the monitoring period from 01/09/2017 to 31/12/2019, as reported in the final version of the Monitoring Report.

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 against the baseline and monitoring methodology AMS-I.E – version 5.0, the monitoring plan contained in the Registered Gap Analysis Report – version 1.2, GS Passport – version 01.1 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 SDG impacts are fairly stated.

The verification team confirms that:

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

SECTION H. Certification statement

ESPL, contracted by Sustainable Carbon - Projetos Ambientais Ltda, has performed the independent verification of the emission reductions for the GS Project “Buenos Aires Renewable Energy Project” – Ref.: GS2290 – in Brazil, for the monitoring period from 01/09/2017 to 31/12/2019, as reported in the final version of the Monitoring Report.

It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity.

In our opinion, the GHG emissions reductions reported for the project activity for the monitoring period are fairly stated in the final version of the Monitoring Report. The GHG emission reductions were correctly calculated based on the approved baseline and monitoring methodology AMS-I.E – version 5.0 and the monitoring plan contained in the Registered Gap Analysis Report – version 1.2, GS Passport – version 01.1.

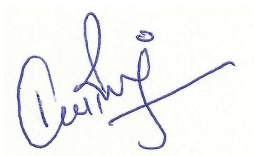
ESPL is able to certify that the emission reductions of GS project activity “Buenos Aires Renewable Energy Project”, during the present monitoring period, totalize the amount of **49,612 tCO₂e**.

Nevertheless, as stated before, due to a FAR raised by GS at the previous monitoring period, an amount of **19,062 tCO₂e** was deducted from the verified amount.

Therefore, the certified ERs for the present monitoring period is **30,550 tCO₂e**.

The certified ERs per year are presented below:

Year	Calculated ERs tCO₂e	Amount to be deducted (FAR) tCO₂e	ERs to be issued tCO₂e
01/09/2017 to 31/12/2017	5,576	2,142	3,434
01/01/2018 to 31/12/2018	19,399	7,454	11,945
01/01/2019 to 31/12/2019	24,637	9,466	15,171
Total	49,612	19,062	30,550



Approved by

Dr. Kaviraj Singh

Managing Director

Earthood Services Privated Limited

Date: 17-09-2021

Place: Gurugram, Haryana

Appendix 1. Abbreviations

Abbreviations	Full texts
ACM	Approved Consolidated Methodology
BE	Baseline Emission
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CP	Crediting Period
CPRH	Environmental Agency of the State of Pernambuco
DNA	Designated National Authority
DNPM	National Department of Mineral Production
DOE	Designated Operational Entity
DOF	Document of Forest Origin
ESPL	Earthhood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse Gas
GS	Gold Standard Foundation
GSC/GSP	Global Stakeholder Consultation Process
IPE	Individual Protective Equipment
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
kW	kilo Watt
kWh	kilo Watt hour
MoV	Means of Validation
MP	Monitoring Plan
MW	Mega Watt
MWh	Mega Watt hour
PA	Project Activity
PCP	Project Cycle Procedure
PE	Project Emission
PP	Project Participant
PS	Project Standard
SD	Sustainable Development
SDM	Sustainable Development Matrix
SENAI	National Industry Service
tCO ₂ e	Tonnes of Carbon di oxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCS-PD	Project Design Document
VT	Verification Team
VVS	Validation and Verification Standard

Appendix 2. 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-I.D)		
Local expert	Brazil, Chile, Colombia		
Financial Expert	Yes		
Technical Reviewer	No		
TA Expert	Yes (1.2, 13.1)		
Reviewed by	Shreya Garg	Date	29/08/2019
Approved by	Anshika Gupta	Date	29/08/2019

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, AM0026, AM0065, AMS-I.A, AMS-I.C, AMS-I.D, AMS-I.E, 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		
Financial Expert	Yes		
Technical Reviewer	No		
TA Expert	Yes (1.1, 1.2, 5.1, 9.1, 13.1)		
Reviewed by	Shreya Garg	Date	04/06/2019
Approved by	Anshika Gupta	Date	04/06/2019

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	UNFCCC	Standard: CDM PS for Project Activity	version 02.0	Other
2.	UNFCCC	Standard: CDM PCP for Project Activity	version 02.0	Other
3.	UNFCCC	Standard: CDM VVS for Project Activity	version 02.0	Other
4.	GS	GS4GG – Principles and Requirements	version 1.2	Other

5.	GS	MR template	June 2017 – version 1	Other
6.	PP	Monitoring Report (draft)	version 01 – 06/01/2020	PP
7.	PP	Monitoring Report (revised)	version 02 – 05/02/2020 version 03 – 29/06/2020 version 04 – 22/10/2020 version 05 – 20/05/2021	PP
8.	PP	Monitoring Report (final)	version 06 – 03/09/2021	PP
9.	PP	ER Spreadsheet (draft)	version 01	PP
10.	PP	ER Spreadsheet (revised)	version 02 version 03	PP
11.	PP	ER Spreadsheet (final)	version 04	PP
12.	PP	Registered VCS-PD	version 8 – 23/04/2010	PP
13.	PP	Registered Gap Analysis Report	version 6.0 – 10/08/2014	Other
14.	PP	Registered GS Passport	version 05 – 18/11/2013	Other
15.	UNFCCC	Methodology: AMS-I.E – Switch from Non-Renewable Biomass for Thermal Applications by the User	version 5.0	Other
16.	PP	<u>Biomass:</u> DOFs	2017 / 2018 / 2019	PP
		Purchase invoices	2017 / 2018 / 2019	
		Sales invoices	2017 / 2018 / 2019	
		Excel files with annual control of purchase of biomass by type and ceramic	2017 / 2018 / 2019	
17.	CPRH	<u>License:</u> Operation license # 03.16.10.004922-2	16/02/2017 – valid until 16/02/2020	PP
18.	DNPM	<u>Clay Extraction:</u> - Authorization # 291/2013	05/03/2013 – valid until 03/01/2023	PP
	CPRH	- Operation license # 18.17.03.000744-7	10/03/2017 – valid until 09/03/2022	PP
19.	PP	<u>Production:</u> - Handwritten report of daily production of ceramic devices	2017 / 2018 / 2019	PP
		- Excel files with annual control of production by kiln	2017 / 2018 / 2019	
20.	PP	<u>SD Indicators:</u> - Record of use of ashes	2017 / 2018 / 2019	PP
	PP	- Record of distribution of IPEs	2017 / 2018 / 2019	
	Dr. Iraldo Guerra	- Occupational Health and Medical Control Program	2017 / 2018 / 2019	
	PP	- Environmental Risk Prevention Program	2017 / 2018 / 2019	
	SENAI	- Atmospheric emissions report	2017 / 2018 / 2019	
	Geração Vapor SETEC	- Monitoring Report of Pollutant Gases Emissions	2017 / 2018 / 2019	
	PP	- Partial payment of professional courses for employees	2017 / 2018 / 2019	
	PP	- Record of payment of bonus to the employees due to production	2017 / 2018 / 2019	
21.	GS	3-Week Issuance Review Period under GS Version 2.2 VER – 3 rd round	29/04/2018	PP

22.	-	Brazilian Institute for the Environment	http://www.ibama.gov.br/	Other
23.	-	The Gold Standard Foundation	http://www.goldstandard.org/	Other
24.	-	IPCC publications	www.ipcc-nggip.iges.or.jp	Other
25.	-	Environmental Agency of the State of Pernambuco (CPRH)	www.cprh.pe.gov.br/	Other
26.	-	UNFCCC	http://cdm.unfccc.int	Other
27.	GS	GS4GG Performance Review_GS2290	-	PP

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 1. Remaining FAR from validation and/or previous verifications

FAR ID	01	Section no.	E.2	Date: 15/01/2020
Description of FAR				
<i>As the site visit of the previous verification did not follow GS guidelines of a default site visit once every three years and as the PP will claim the issuance of the total amount of VERs of the entire monitoring period (i.e. 01/03/2012 – 31/08/2017), the verified ERs from 01/03/2012 to 27/09/2012 will have to be deducted from the total ERs of the next monitoring period.</i>				
Project participant response				Date: 27/01/2020
Following the FAR opened for this monitoring period, the VERs generated during the period of 01/03/2012 to 27/09/2012 (totalling 19,062 tCO ₂ e) were deducted from the total to be issued.				
Documentation provided by project participant				
Tab ERs to be deducted from GS MR Calculation Buenos Aires_01_09_2017_31_12_2019_v.02				
DOE assessment				Date: 29/02/2020
In accordance with the FAR raised during the last verification, the ERs generated during the period from 01/03/2012 to 27/09/2012, with a total of 19,062 tCO ₂ e are being deducted from the total ERs calculated for the present monitoring period.				

Table 2. CL from this verification

CL ID	01	Section no.	E.1	Date: 15/01/2020
Description of CL				
<i>At the front page, cells of <u>Estimated amount</u> and <u>Total amount</u>, not all certified SDG impacts related to the project activity were described. In addition, the cell of <u>Estimated amount of annual average certified SDG impact</u> is filled up with the estimated amount for the entire monitoring period.</i>				
Project participant response				Date: 27/01/2020
Values for SDGs 7 and 8 have been included. In addition, the <u>Estimated amount of annual average certified SDG impact</u> has been rectified and now contains the annual estimate. The estimated ERs for this monitoring period was placed as a footnote.				
Documentation provided by project participant				
MR – v. 02				
DOE assessment				Date: 29/02/2020
All certified SDG impacts related to the project activity are now described. In addition, the cell of <u>Estimated amount of annual average certified SDG impact</u> was correctly filled up with the annual estimated value				

CL ID	02	Section no.	E.6.2	Date: 15/01/2020
Description of CL				

<i>In Section D.2, the values of the following parameters are not quantified and/or given:</i>	
<ul style="list-style-type: none"> - SDG 13 – Emissions to the atmosphere; - SDG 13 – Procedures related to the control and disposal of ashes; - SDG 8 – Number of Health and Security trainings and campaigns conducted during monitoring period; - SDG 13 – Voluntary Emission Reductions issued; - SDG 13 – Revenues for biomass suppliers; - SDG 7 – Total energy produced from renewable sources. 	
Project participant response	Date: 27/01/2020
All mentioned parameters had their values calculated and are now included in Monitoring Report v.02.	
Documentation provided by project participant	
MR – v. 02	
DOE assessment	Date: 29/02/2020
The values for all monitored SDGs are given in Section D.2 of the MR.	

CL ID	03	Section no.	E.1	Date: 15/01/2020
Description of CL				
<i>Section E.6 is not correctly filled up as it does not provide any remarks on difference of estimated and actual values of certified SDG impacts.</i>				
Project participant response				Date: 27/01/2020
The information, tables and explanations in Section E.6 have been relocated to Section E.4. Section E.6 now contains comparisons between the estimative and actual values regarding the SDGs.				
Documentation provided by project participant				
MR – v. 02				
DOE assessment				Date: 29/02/2020
Section E.6 is now correctly filled up. Nevertheless, there is no explanation for the increase in thermal energy generation in the period, as the production has decreased. CL remains open.				
Project participant response #2				Date: 10/03/2020
During this monitoring period, Buenos Aires Ceramic Factory signed a contract with a car factory to supply renewable biomass (wood residues). Due to the favourable price, the ceramic factory started to store a large amount of biomass. The increase in thermal energy generated is explained by the large amount of biomass that was purchased in the monitored period, therefore the increase in thermal energy occurred due to the purchase of biomass that is available in stock and not by the biomass that was effectively burned.				
Documentation provided by project participant				
-				
DOE assessment #2				Date: 15/04/2020
It was explained that due to a commercial opportunity the ceramic received much more biomass than the one necessary for its regular operation. Nevertheless, as per the applied monitoring plan, the biomass is monitored by the purchase of biomass and not by the used biomass. Therefore, the calculated thermal energy has a distortion, as not all biomass used for the calculations is indeed the biomass used to burn the ceramic devices.				

CL ID	04	Section no.	E.6.2	Date: 20/07/2020
Description of CL				
<i>In Section D.2:</i>				
<ul style="list-style-type: none"> a. <i>parameter f_{NRB}: as per last performance review carried out in the previous MP, the GS required the application of the conservative value between value calculated and provided by the gap analysis report. It is not clear if the parameter is now being determined in accordance with monitoring plan and applied methodology;</i> b. <i>parameter Leakage due to competing uses of biomass: according to explanation provided in the parameter, surveys were carried out in 2012. Nevertheless, the monitoring frequency of the parameter is annual;</i> c. <i>parameter Revenues for biomass suppliers: the cross-check measures were not demonstrated, as required.</i> 				
Project participant response				Date: 03/09/2020

a. The value of the parameter was revised, and the value of the gap analysis report is being used.
b. According to CDM General guidance on leakage in biomass project activities v.03 (http://cdm.unfccc.int/methodologies/SSCmethodologies/approved/history/c_leak_biomass/guid_biomass_v03.pdf), section 18, the project participant shall evaluate ex ante if there is a surplus of the biomass in the region of the project activity, which is not utilized. Therefore, the renewable biomass surplus values were not updated from the values presented in the Gold Standard PDD v.03.
c. Available at: Spreadsheet GS MR Calculation Buenos Aires_01 09 2017_31 12 2019_v.4, Revenues to suppliers.

Documentation provided by project participant

MR – v. 04

DOE assessment**Date:** 16/09/2020

- | |
|---|
| a. as the value of the gap analysis report is more conservative, the same approach used for the last verification was used for the present monitoring period; |
| b. the value of the PDD was used in accordance with CDM General guidance on leakage in biomass project activities v.03; |
| c. the cross-check is presented at the Excel spreadsheet (tab “Revenues to suppliers”) using the invoices of each biomass. |

CL ID	05	Section no.	E.8.1	Date:	20/07/2020
Description of CL					
<i>In Section E.1 – Total energy produced from renewable sources: as f_{NRB} differs from 100%, even in the baseline, it is not clear if the renewable biomass in the baseline can be considered equal to 0%.</i>					
Project participant response					Date: 03/09/2020
As the f_{NRB} is 90.93% the value of 9.07% was considered.					
Documentation provided by project participant					
MR – v. 04					
DOE assessment					Date: 16/09/2020
Based on the value of f_{NRB} , as it is more conservative, the value of 9.07% is being used for the <i>Total energy produced from renewable sources.</i>					

Table 3. CAR from this verification

CAR ID	01	Section no.	E.6.2	Date:	15/01/2020
Description of CAR					
<i>In Section D.2, the values for parameter PR_y are not consistent with presented evidences for the months: 2017 – September, October and December; 2018 – April, May, October, November and December; 2019 – May, July, August and September.</i>					
<i>In addition, the production values are not the ones referring to the pieces entering the kilns.</i>					
Project participant response					Date: 27/01/2020
The production data were corrected in the mentioned months according to the evidence and the entering values were inputted.					
Documentation provided by project participant					
<i>Cer Buenos Aires planilha de monitoramento 2017; Cer Buenos Aires planilha de monitoramento 2018; Cer Buenos Aires planilha de monitoramento 2019 and GS MR Calculation Buenos Aires_01 09 2017_31 12 2019_v.02.</i>					
DOE assessment					Date: 29/02/2020
All values for parameter PR_y are now consistent with evidences presented to the verification team.					

CAR ID	02	Section no.	E.6.2	Date:	15/01/2020
Description of CAR					
<i>In Section D.2, the values for parameter $Q_{renbiomass}$ are not consistent with presented evidences for the months: 2017 – September and October (type of biomass); 2018 – January, February, July, August, October and December (Algaroba); 2019 – July (Algaroba) and from July to December (wood residues).</i>					
Project participant response					Date: 27/01/2020
The biomass data were corrected in the mentioned months according to the evidence.					
Documentation provided by project participant					
<i>Cer Buenos Aires planilha de monitoramento 2017; Cer Buenos Aires planilha de monitoramento 2018; Cer Buenos Aires planilha de monitoramento 2019 and GS MR Calculation Buenos Aires_01 09 2017_31 12 2019_v.02.</i>					
DOE assessment					Date: 29/02/2020
All values for parameter $Q_{renbiomass}$ are now consistent with evidences presented to the verification team.					

CAR ID	03	Section no.		Date: 15/01/2020
Description of CAR				
<i>In Section E.3 – Table 6 and E.5, the values of GHG emission reductions is not in accordance with ER calculations.</i>				
Project participant response				Date: 27/01/2020
The values were corrected according to calculation spreadsheet.				
Documentation provided by project participant				
MR – v. 02				
DOE assessment				Date: 29/02/2020
Sections E.3 and E.5 are now consistent with Excel calculations.				

Table 4. FAR from this verification

Not applicable

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none">• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN);• Make structural and editorial improvements.
02.1	11 January 2018	Editorial revision to correct the numbering of appendices in the instructions.
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.

Decision Class: Regulatory
Document Type: Form
Business Function: Issuance
Keywords: project activities, verifying and certifying
