



Verification and certification report form for CDM project activities

(Version 04.0)

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

BASIC INFORMATION

Title and UNFCCC reference number of the project activity	Santander and Las Tapias Renewable Energy Project GS ID: GS 1074		
Scale of the project activity	☐ Large-scale ☒ Small-scale		
Version number of the verification and certification report	4.1		
Completion date of the verification and certification report	02/08/2024		
Monitoring period number and duration of this monitoring period	3 rd monitoring period (01/01/2019 to 31/03/2020) 3 rd of 1 st CP.		
Version number of the monitoring report to which this report applies	3 rd monitoring report (version 07)		
Crediting period of the project activity corresponding to this monitoring period	1 st crediting period		
Project participants	Sustainable Carbon - Projetos Ambientais Ltda. Ladrillera Santander Diaz Muñoz S en C Ruiz Moreno y Cia S en C		
Host Party	Colombia		
Applied methodologies and standardized baselines	Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement, version 1.0		
Mandatory sectoral scopes	Sectoral Scope 1 – Energy Industries (Renewable / Non-renewable Sources)		
Conditional sectoral scopes, if applicable	NA		
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	3 rd MP: 29,586 tCO ₂ e		
Certified amount of GHG emission reductions or GHG removals for this monitoring period	Amount before 1 January 2013	Amount from 1 January 2013 until 31 December 2020	Amount from 1 January 2021
	0	22,985 tCO ₂ e	0
Name and UNFCCC reference number of the DOE	Earthood Services Private Limited (ESPL) (ref E- 0066)		
Name, position and signature of the approver of the verification and certification report	 Dr. Kaviraj Singh Managing Director		

SECTION A. Executive summary

The project activity involves partial fuel switching from mineral coal to renewable biomasses such as sawdust, wood residues and pulp and paper sludge sawdust in two ceramic companies installed in the State of Cundinamarca, Colombia. Thus, GHG emission reduction is achieved.

The project applies the methodology approved under the Gold Standard for Voluntary small-scale projects: “Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement”, Version 1.0.

The PA contributes to the following SDGs:

1. Goal 7: Affordable and clean energy.
2. Goal 8: Decent work and economic growth.
3. Goal 13: Climate action.

This verification is an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the DOE. The verification addresses the implementation and operation of the GS PA and tests the data and assertions set out in the monitoring report based on the following:

- The registered PDD and GS Passport.
- The approved methodology mention in the PDD and GS Passport.
- The registered monitoring plans.
- UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords.
- Gold Standard for the Global Goals.
- Relevant decisions, guidance and clarifications of the CMP, GS Secretariat and CDM Executive Board and any other information and references relevant to the reported emission reductions of the project activities.

The verification has considered both quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report and corresponding supporting documentation was assessed in accordance with the rules defined by UNFCCC and GS, as appropriate to the PA. The verification is not meant to provide any consulting or recommendations to the PP/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

The verification process involved following:

- Contract with Sustainable Carbon – Projetos Ambientais Ltda. for the scope of verification.
- Desk review.
- Physical on-site inspection.
- Issuance of verification findings.
- Reporting, calculation checks, QA/QC and resolution of findings.
- Issuance of draft verification report.
- Independent technical review of the project documentation.
- Issuance of the final verification report.
- Submission of the request for issuance, as appropriate.

Conclusion

Earthood Services Private Limited (ESPL) has performed the verification of the GS PA “Santander and Las Tapias Renewable Energy Project”, having GS Ref. Number GS1074 for the monitoring periods:

- 3rd MP of the 1st CP:01/01/2019 to 31/03/2020.

The verification team has confirmed the implementation of the project as per description in the applicable version of the PDD (version 07, dated on 05/11/2013), the monitoring plan of the PDD and GS Passport and the application of the monitoring methodology (Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement). In addition, it was confirmed that the monitoring system is in place and the emission reductions and SDGs are calculated without material misstatements.

The verified emission reductions amount to 22,985 tCO₂e for the 3rd monitoring period. The 3rd MP is the last verification done to the project during the 1st crediting period. The verification team concluded that the registered GS project activity complies with all relevant CDM and GS procedures/standards/guidance and therefore request for issuance is being submitted in accordance with the GS procedures.

SECTION B. Verification team, technical reviewer and approver**B.1. Verification team member¹**

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 ² (GS approved Auditor) (until April 2024 and then, kept as Team member for the 2nd response to GS findings)	OR	Sebben	Marcelo	Verifit	Y	Y ³	Y	Y
2	Team leader from May/2024 onwards (2nd round GS findings)	IR	Mahala	Deepika	Earthood	N	N	N	Y
3.	Verifier	OR	Grisales	Cristian	Verifit	Y	Y	Y	Y
4.	Technical Expert	OR	Sebben	Marcelo	Verifit	Y	N	Y	Y
5.	Methodological Expert	OR	Sebben	Marcelo	Verifit	Y	N	Y	Y

¹ In order to comply with the GS rules and requirements, the same VVB conducted CP renewal validation with a different audit team.

² Marcelo Sebben was the GS approved lead auditor until the first response to GS findings. Later on, Earthood has ended its cooperation with VERIFIT (outsourced Entity) and therefore, a new approved team leader has been included from the 2nd round responses onwards. Marcelo Sebben has been kept as Team member for this 2nd round responses as well as all other team members.

³ Remotely

Note: It is important to mention that at the time of the on-site assessment of the project, COVID 19 restrictions continued to be very strict and particularly for Colombia for any visitors coming from countries with significant COVID 19 outbreaks. Given the abovementioned, and also with intent to contribute not to the cross border spread of COVID 19 and to the control of the pandemic, ESPL approach was to send an available verifier⁴ based on Colombia to visit the project, always supported by the TL and TE through the IC technologies approved by GS when performing the audit. Audit was performed by one verifier on-site and one TL/TE supporting the assessment remotely. Similarly to the response given above, at the time of the on-site assessment of the project, COVID 19 restrictions continued to be very strict and particularly for Colombia, where authorities did not allow to perform any kind of face-to-face meeting/interview. Given that nearby residents are mainly ones dedicated to farming and livestock, it was not possible to use IC technologies to interview them.

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	IR	Garg	Shreya	Central Office
2.	Technical Expert	IR	Garg	Shreya	Central Office
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.	Human error in recording the readings	Low	Recording of readings for most of the parameters is automated and electronic and there is limited human intervention. Therefore, chances of possible human errors, in recording and archiving, are minimised.	Electronic records used for ER calculation to be checked with the source data available as plant records.
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 checked 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 methodology and tools. In addition, entry data are crosschecked with raw data.

C.2. Consideration of materiality in conducting the verification

In accordance with CDM VVS for project activities – version 03.0, the prescribed threshold for materiality for project activities is 5% as it is a small-scale project activity.

⁴ Mr. Grisales is authorized by ESPL as Team Leader. However, he was not approved as GS team leader, hence Mr. Sebben was appointed team leader of this verification

Emission Reductions (tCO₂e)/year	500,000 or more	300,001 to 499,999	300,000 or less	Small Scale CDM PAs	Micro Scale CDM PAs
Materiality Threshold	0.5%	1%	2%	5%	10%

Particulars / Monitoring Report	MR (version public)	MR (revised)
Emission Reductions Achieved (tCO₂e) in this monitoring period	22,985	22,985
Applicable Threshold (%) as per CDM VVS for PA– version 03.0	1,149 (5%)	1,149 (5%)

ESPL has identified the impact of errors observed and those were corrected by PP during verification for all monitoring parameter at individual level. Only parameters that will be sampled are subject to consideration of materiality.

Parameter	Monitoring frequency	Number of Discrete Data (Total)	Sample selected for verification	Type of error identified	Materiality threshold
Q_y	Monthly and yearly aggregated from daily monitoring and reported every work shift	455 records of daily production	46 records of daily production	NA	NA
FC_y	Monitored every fossil fuel delivery and recorded monthly	15 monthly records of coal consumption	15 records of coal consumption	CAR 01	Under the materiality threshold
$NCV_{Biomass}$	Monitored every year through available and updated bibliography	3 figures (TJ/tonne)	3 figures (TJ/tonne)	CL 01	NA
$Q_{renbiomass}$	Quantity of renewable biomass combusted during the year y	45 figures	12 figures (4 per type of biomass)	NA	NA
Origin of renewable Biomass	Renewable origin of the biomass	15 monthly records of biomass purchases	15 monthly records of biomass purchases	CAR 02	NA
Leakage due to competing uses of biomass	tCO ₂ e monitored each year	Three sources of information	Three sources of information	CL 02	NA

Based on the above table it can be confirmed that the materiality threshold was not surpassed for the ERs claimed during the 3rd MP.

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 the latest version of the PDD), the monitoring methodology, paying particular attention to the frequency of tests, the quality of monitoring, 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 / evidence reviewed is included as Appendix 3.

D.2. On-site inspection

Duration of on-site inspection: 26/11/2022				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening Meeting	Headquarters and producing facilities of Santander Ceramic in Cundinamarca, Bogotá, Republic of Colombia	26/11/2022	Marcelo Sebben ⁵ Cristian Grisales
2.	Management and operational system			Cristian Grisales
3.	Review of ER calculations			
4.	Interviews with beneficiaries			
5.	Review of monitored data			
6.	Closing Meeting			Marcelo Sebben Cristian Grisales

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Costa	Aline	Sustainable Carbon	26/11/2022	▪ Management and operational system ▪ Review of ER calculations ▪ Interviews with beneficiaries ▪ Review of monitored data	Cristian Grisales
2.	Díaz	Miguel	Santander Ceramics			
3.	Mayorga	Sonia				
4.	García	Hector				
5.	Palacios	Jesus				

D.4. Sampling approach

The project participants did not apply sampling approach as they took into consideration all data to measure the monitoring parameters and calculate the ERs. The verification team proposed a sampling plan to conduct the assessment of monitored parameters during the site visit due to the amount of available data. The proposed sampling process has been defined as follows, in accordance with CDM Standard "Sampling and surveys for CDM project activities and programmes of activities" version 09.0:

The following parameters (at least) must be sampled during the site visit:

- Q_y – Thousands of ceramic units
- FC_y - Amount of fossil fuel consumed for captive energy generation in the project activity in year y
- Q_{renbiomass} - Quantity of renewable biomass combusted during the year y

The simple random sampling was conducted for each parameter. As per information provided to the verification team, the sample for each parameter was determined by applying paragraph 29 - 32:

For Q_y: AQL of 0.5%, UQL of 10%, sample size of 46. For Q_{renbiomass}: AQL of 0.5%, UQL of 15%, sample size of 10 (12 figures were cross checked). Remaining parameters were fully reviewed (no sample approach was done).

⁵ Remotely.

Producer risk		5%		5%	
Consumer risk		5%		20%	
AQL	UQL	Sample size (n)	Acceptance number (c)	Sample size (n)	Acceptance number (c)
0.5%	10%	46	1	29	1
0.5%	15%	30	1	10	0
0.5%	20%	22	1	8	0
1.0%	10%	61	2	29	1
1.0%	15%	30	1	19	1
1.0%	20%	22	1	14	1

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	-	-	-
Compliance of the project implementation and operation with the registered PDD	-	-	-
Post-registration changes	-	-	-
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	CL 01	CAR 01 CAR 02 CAR 03	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
Total	1	3	0

SECTION E. Verification findings

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

Means of verification	The MR for the 3 rd MP was crosschecked against the Gold Standard for the Global Goals requirements and the instructions for filling out.
Findings	No findings were raised
Conclusion	Updated version of the monitoring report was filled out as per the latest version of the template. ESPL confirms that latest version of the MR is in accordance with the instructions for filling out the monitoring report form and applicable GS Guidelines.

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

Means of verification	ESPL reviewed the verification report for the 2 nd MP and did find any FAR to be conducted during the 3 rd MP.
Findings	No findings were raised.
Conclusion	No FARs are pending for closing during the 3 rd MP.

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

Means of verification	The project activity involves partial fuel switching from mineral coal to renewable biomasses such as sawdust, wood residues and pulp and paper sludge sawdust in ceramic industry located in the State of Cundinamarca, Colombia.
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	During the on-site visit, ESPL checked the implementation status of the project activity as well as the monitoring equipment and confirm that project implementation was running properly for Santander Ceramic during the 3rd MP. For Las Tapias 3 Ceramic Industry, continuity of the monitoring deviation requested during the 2nd MP and the fact of the financial affectation to this industry by circumstances unknown by the audit team (sensible information) made it unable to provide the necessary monitoring information and supporting documents for any ERs verification and voluntary withdrawal of Las Tapias facility for the 2nd crediting period was requested in April 2020 (as per latest version 16 of the PDD). Thus, according to what was agreed between Sustainable Carbon and Las Tapias 3 Ceramic, GHG ERs generated by Las Tapias 3 Ceramic Industry during the 3rd MP were not considered (accounted as zero for the MP) and won't be claimed in the future. ESPL considered appropriated this approach and aligned with the GS requirements.
Findings	No findings were raised.
Conclusion	According to the information verified during the site visit, ESPL has confirmed that all physical features (technology, project equipment, and monitoring and metering equipment) of the Santander Ceramic were in place and are in accordance with the PDD (version 07) for the 3rd MP. The following physical features of Santander Ceramic were confirmed during the site visit: ▪ The facilities are in the municipality of Soacha, in the Department of Cundinamarca, in the Republic of Colombia. ▪ The project scenario involves biomass residues, such as sawdust, wood residues, and pulp and paper sludge, which are used to feed the ceramic's kilns, replacing the use of fossil fuel. ▪ Kilns under operation are the ones type Hoffman and Camara ▪ There are under operation three (3) coal fired dryers with a capacity of 24,000 pieces. ▪ The average brick production of the facility is around of 14M units/year. ▪ The average consumption of renewable biomass is around 9,677 tons/year. ▪ The average consumption of non-renewable biomass (i.e coal) is around 2,563 tons/year. <i>Las Tapias 3 Ceramic</i> Industry is no longer part of this project activity (at the time of the verification in Nov 2022) as their parameters were not monitored and a voluntary withdrawal was requested for the 2nd crediting period; approved and recorded in the latest version 16 of the PDD, thus, no ERs will be claimed for this facility during 3rd MP (last MP of the 1st crediting period) and 4th MP (1st MP of the 2nd crediting period).

E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents⁶

Means of verification	During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic <i>Las Tapias 3</i> could not provide monitoring information and supporting documents during that period. So, its emission reductions for the period were considered as 0 (zero). In April 2020 <i>Las Tapias 3</i> Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period (with first verification during the 4th MP). Given the abovementioned, for the entire 3rd MP no ERs were accounted for this ceramic facility (ERs were declared equal to zero). ESPL deemed conservative this approach.
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⁶ 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).

Findings	No findings were raised.
Conclusion	ESPL confirms that no ERs have been requested for the facilities withdraw in April 2020 during the 3 rd MP.

E.4.2. Corrections

Means of verification	In order to confirm that no PRC happened during the MP, ESPL visited the facilities of the project and confirmed the alignment of the project activity with the description given in latest version 7 of the PDD. No corrections were identified.
Findings	No findings were raised.
Conclusion	ESPL confirms that no corrections were requested or were identified during the 3 rd MP.

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

Means of verification	In order to confirm that no PRC happened during the MP, ESPL reviewed the verification report for the 2 nd MP and confirmed that project's revalidation was submitted on 07/10/2020, for a crediting period from 01/04/2020 to 31/03/2027. ESPL reviewed all the due diligence done by PP during the pandemic as well as confirmed the lack of capability to perform the revalidation on time and agreed the conservative approach followed (no ERs claimed).
Findings	No findings were raised
Conclusion	ESPL confirmed that no changes to the start date of the crediting period have happened during the 3 rd monitoring period.

E.4.4. Inclusion of a monitoring plan

Not applicable as any inclusion of a monitoring plan has been requested during the 3rd MP.

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

Means of verification	In order to confirm that no PRC happened during the MP, ESPL reviewed the applicable version 07 of the PDD and compared the technical and monitoring arrangements depicted in this document, against the ones under operation in Santander Ceramic Facility during the 3 rd MP. No material differences or permanent changes were identified.
Findings	No findings were raised.
Conclusion	ESPL confirms that no permanent changes to the project activity have been requested and/or identified during the 3 rd monitoring period.

E.4.6. Changes to the project design

Means of verification	In order to confirm that no PRC happened during the MP, ESPL reviewed the applicable version 07 of the PDD and compared the technical and monitoring arrangements depicted in this document, against the ones under operation in Santander Ceramic Facility during the 3 rd MP. No material differences or changes to the project design were identified.
Findings	No findings were raised.
Conclusion	ESPL confirms that no changes to the project design have been requested and/or identified during the 3 rd monitoring period.

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

Means of verification	In order to confirm that no PRC happened during the MP, The MP of the applicable version 07 of the PDD was reviewed against the monitoring requirements of the applied methodology and applicable tools. No material deviations were found
Findings	No findings were raised.
Conclusion	ESPL confirms that MP followed by the project activity during the 3 rd MP is totally in accordance with the applied methodology (Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement – version 1.0) and applicable guidance.

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	According to the applicable version 07 of the PDD, the following parameters are fixed for the 1st crediting period (with last verification during the 3rd MP): ▪ EF_{CO2}: CO₂ Emission factor of baseline fossil fuel (coal): 94.6 tCO₂/TJ ▪ NCV_{coal}: Net calorific value of baseline fossil fuel (coal): 0.0282 TJ/ton ▪ ρ_{biomass}: Specific gravity of renewable biomass type j: ○ Sawdust: 0.190 ton/m³ ○ Wood residues: 0.423 ton/m³ ▪ EF_{BSL}: Emission factor for the baseline situation ○ <i>Santander Ceramic</i>: 1.84 tCO₂e/thousands of bricks produced
Findings	No findings were raised
Conclusion	ESPL confirms that all fixed ex-ante parameters were included in the MR for the 3 rd MP in section D.1 and are in accordance with the latest version of the PDD and have been applied properly.

E.6.2. Data and parameters monitored

Means of verification	All monitored parameters listed in 3rd MR used to calculate GHG emission reductions of the project activity were checked against the requirements established in the applicable version 07 of the PDD. Monitoring parameters were verified to check its consistency with GS Guidelines. Eligibility Criteria for Specific Project Types (Project activity using biomass resources) are included in Appendix 5 of this report. <table border="1"> <tr> <th colspan="2">1. SDG 13 - Q_y: Thousands of ceramic units</th></tr> <tr> <th>Criteria</th><th>Assessment by ESPL</th></tr> <tr> <td>Measuring / Reading / Recording frequency</td><td> Parameter is determined by the number of ceramic units cooked in the kilns. The parameter takes into consideration the number of devices set inside the kiln. The records are made manually during the production phase and are aggregated per shift, daily and monthly. Figures of production of ceramic units (Q_y in thousands of bricks produced) were cross checked against the records of production located in each of the kilns (one operational logbook for Hoffman kiln and another for the Cámaras kiln). Those logbooks/12/ (cuaderno de control de horno) are filled in a daily basis by the operational staff and aggregated in a Production Excel /13/ file on a monthly basis (ENDAGUE HORNOS 2019, 2020 and 2021.xls). ESPL cross checked the figures of ceramic units produced for a sample in 2019, 2020 and 2021 recorded in the operational logbooks /14/ and the Production Excel file (Ladrillera Santander cuadro de monitoreo 2019, 2020, 2021.xls) and did not identify any material misstatement. </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>NA</td></tr> <tr> <td>Is the accuracy of the monitoring equipment as stated in the monitoring plan?</td><td>NA</td></tr> </table>	1. SDG 13 - Q _y : Thousands of ceramic units		Criteria	Assessment by ESPL	Measuring / Reading / Recording frequency	Parameter is determined by the number of ceramic units cooked in the kilns. The parameter takes into consideration the number of devices set inside the kiln. The records are made manually during the production phase and are aggregated per shift, daily and monthly. Figures of production of ceramic units (Q_y in thousands of bricks produced) were cross checked against the records of production located in each of the kilns (one operational logbook for Hoffman kiln and another for the Cámaras kiln). Those logbooks/12/ (cuaderno de control de horno) are filled in a daily basis by the operational staff and aggregated in a Production Excel /13/ file on a monthly basis (ENDAGUE HORNOS 2019, 2020 and 2021.xls). ESPL cross checked the figures of ceramic units produced for a sample in 2019, 2020 and 2021 recorded in the operational logbooks /14/ and the Production Excel file (Ladrillera Santander cuadro de monitoreo 2019, 2020, 2021.xls) and did not identify any material misstatement.	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes	Monitoring equipment	NA	Is the accuracy of the monitoring equipment as stated in the monitoring plan?	NA
1. SDG 13 - Q _y : Thousands of ceramic units													
Criteria	Assessment by ESPL												
Measuring / Reading / Recording frequency	Parameter is determined by the number of ceramic units cooked in the kilns. The parameter takes into consideration the number of devices set inside the kiln. The records are made manually during the production phase and are aggregated per shift, daily and monthly. Figures of production of ceramic units (Q_y in thousands of bricks produced) were cross checked against the records of production located in each of the kilns (one operational logbook for Hoffman kiln and another for the Cámaras kiln). Those logbooks/12/ (cuaderno de control de horno) are filled in a daily basis by the operational staff and aggregated in a Production Excel /13/ file on a monthly basis (ENDAGUE HORNOS 2019, 2020 and 2021.xls). ESPL cross checked the figures of ceramic units produced for a sample in 2019, 2020 and 2021 recorded in the operational logbooks /14/ and the Production Excel file (Ladrillera Santander cuadro de monitoreo 2019, 2020, 2021.xls) and did not identify any material misstatement.												
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes												
Monitoring equipment	NA												
Is the accuracy of the monitoring equipment as stated in the monitoring plan?	NA												

	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?	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
	Calibration frequency / interval	NA
	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?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	A sampling was conducted to the manual records and to the electronic spreadsheets. For further details on the sampling conducted, refer to section D.4 above.
	If applicable, has the reported data been crosschecked with other available data?	As per monitoring plan, the monitored values are to be cross-checked the amount of fuel consumed.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Figures of pieces cooked are of great importance in the financial sustainability of the ceramic. Thus, we understand that the management does ensure the correct transfer of data to the ER calculations.
	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 the CDM Project Standard for Project Activities.	NA. Not project deviations were declared or identified by the audit team during the MP. During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic <i>Las Tapias 3</i> could not provide monitoring information and supporting documents during that period. So, its emission reductions for the period were considered as 0 (zero). In April 2020 <i>Las Tapias 3</i> Ceramic

		Facility was voluntary withdraw of the project for the 2nd crediting period (with first verification during the 4th MP). Given the abovementioned, for the entire 3rd MP no ERs were accounted for this ceramic facility (ERs were declared equal to zero). ESPL deemed conservative this approach.
	2. SDG 13 – FC_y: Amount of fossil fuel consumed for captive energy generation in the project activity in year y	
	Criteria	Assessment by ESPL
	Measuring / Reading / Recording frequency	Parameter corresponds to the amount of fossil fuel combusted in the kilns. The parameter is measured by the amount of fuel delivered to each ceramic and it is controlled by the ceramic owner. The data is controlled by purchase invoices, delivery notes or other documents related. During the onsite visit ESPL check the fuel purchase invoices (compras de carbon y energia. docx) /15/ available at the project site. Coal purchasing is done each week to different suppliers dully registered in the Colombian Chamber of Commerce, with environmental license for exploitation and commercialization of coal and registered in the national mining agency (ANM as per its acronym in Spanish). A sample of invoices for 2019, 2020 and 2021 (reference to the physical invoices) was cross checked against the database of coal purchasing (Ladrillera Santander cuadro de monitoreo 2020, 2021 and 2022.xls 48, 69 and 143 respectively)/16/.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	NA
	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?	NA
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
Calibration frequency / interval	NA	

	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?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	A sampling was conducted to the manual records and to the electronic spreadsheets. For further details on the sampling conducted, refer to section D.4 above.
	If applicable, has the reported data been crosschecked with other available data?	As per monitoring plan, the monitored values are to be cross-checked against the production output.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	All delivery notes, invoices or receipts are available to the verification team. A sampling was conducted to ensure the correct transfer of data to the base spreadsheet and later to the ER calculations.
	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 the CDM Project Standard for Project Activities.	During the 2 nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic <i>Las Tapias 3</i> could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3 rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 <i>Las Tapias 3</i> Ceramic Facility was voluntary withdraw of the project for the 2 nd crediting period. No VERs were claimed by <i>Las Tapias 3 Ceramic</i> neither for the 3 rd nor for the 4 th MPs.
3. SDG 13 – $NCV_{biomass}$: Net calorific value for the renewable biomass		
Criteria	Assessment by ESPL	
Measuring / Reading / Recording frequency	Parameter is obtained from available bibliography or laboratory analysis, and it is updated when new data is released. For Sawdust and wood residues, data from Aalborg Industries ⁷ was used /17/. For pulp and paper, a lab analysis of Fuel Combustion Laboratory of	

⁷ <https://www.europages.co.uk/CARL-P-AALBORG-AS/DNK036779-00101.html>

		<i>Universidad del Valle / Cali, Colombia</i> was conducted as requested by Santander Ceramic.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	NA
	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?	NA
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
	Calibration frequency / interval	NA
	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?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	ESPL reviewed the lab analysis report issued by accredited Laboratory of <i>Universidad del Valle / Cali, Colombia</i> /17/.
	If applicable, has the reported data been crosschecked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are	ESPL confirms that all data can be checked and compared to values applied in the ER spreadsheets.

	necessary QA/QC processes in place?	
	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 the CDM Project Standard for Project Activities.	During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3rd MP (mainly by financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3rd MP.
	4. SDG 13, SDG 7 – $Q_{\text{renbiomass}}$: Quantity of renewable biomass combusted during the year y.	
	Criteria	Assessment by ESPL
	Measuring / Reading / Recording frequency	Parameter corresponds to the amount of renewable biomass combusted in the kilns. The parameter is measured by the amount of fuel delivered to each ceramic and it is controlled by the ceramic owner. The data is controlled by purchase invoices, delivery notes or other documents related. During the onsite visit, ESPL checked the figures of renewable biomass used for brick production during the 3rd MP depicted in the ER's spreadsheet and compared them with the ones in the operational logbooks and the Production Excel file (Ladrillera Santander cuadro de monitoreo 2019, 2020, 2021.xls)/13/ and did not identify any material misstatement.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	NA
	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?	NA
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
	Calibration frequency / interval	NA

	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?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	A sampling was conducted to the manual records and to the electronic spreadsheets. For further details on the sampling conducted, refer to section D.4 above.
	If applicable, has the reported data been crosschecked with other available data?	As per monitoring plan, the monitored values are to be cross-checked with the production output /13/ and receipts of delivery.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	All delivery notes, invoices or receipts are available to the verification team. A sampling was conducted to ensure the correct transfer of data to the ER spreadsheet.
	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 the CDM Project Standard for Project Activities.	During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3rd MP.
5. SDG 13 – SDG 7 - Origin of renewable biomass		
Criteria	Assessment by ESPL	
Measuring / Reading / Recording frequency	The biomass delivered will be compared to the renewable biomass definitions under Annex 18 of the 23rd meeting report of the CDM Executive Board. Its traceability will be evidenced with purchase receipts, invoices, etc. To confirm the Renewable Energy Activity Requirements applicable to the project (section	

		4, annex A, 1.2 “Project activity using biomass resources”), ESPL checked the tickets of biomass purchased from ENEL Green Power (Local Grid Operator)/15/ and received as donation from local tree pruning associations. The origin in both cases was from local sawmills and as result of prune by maintenance activities in the transmission and distribution power lines (making use of surplus biomass). Both sources are considered traceable and aligned with the requirements in the registered PDD and GS rules (Renewable Energy Activity Requirements). Detailed analysis of the Energy Activity Requirements is depicted in the Appendix 5.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	NA
	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?	NA
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
	Calibration frequency / interval	NA
	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?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for	NA

	which measurements have been carried out?	
	How were the values in the monitoring report verified?	The source was checked against invoices from biomass providers.
	If applicable, has the reported data been crosschecked with other available data?	As per monitoring plan, the monitored values are cross-checked with the receipts of delivery, invoices, etc.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. All biomass invoices were available for the verification team.
	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 the CDM Project Standard for Project Activities.	During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3rd MP.
6. SDG 13 – SDG 7: Leakage due to competing use of biomass		
Criteria	Assessment by ESPL	
Measuring / Reading / Recording frequency	This parameter is to be accounted if the renewable biomass consumed in the project activity has any other competing use. Leakage is not to be accounted if there is a surplus of at least 25% of the considered biomass in the region. This survey was carried out in the revalidation phase (for the renewal of the CP in April 2020), and it was concluded that there is a biomass surplus in the region (aligned with the GS4GG - Renewable Energy Activity Requirements, annex A, section 1.2 - Project activity using biomass resources). Moreover, the same analysis was conducted in the 2nd and 3rd monitoring periods regarding the new renewable biomass (pulp and paper sludge). The same conclusion was obtained. During the onsite visit ESPL check the validation report the renewal, issued in 2020, where it was established that percentage of available biomass in the region is over 25%, hence, no leakage related to competing uses of biomass must be accounted for the 3rd MP. Also, has part of the assessment to the findings raised by GS, ESPL reviewed the latest version of the MR as well as the updated version 04 of the spreadsheet and found consistent and correct the approach followed by the client to estimate the surplus of biomass for 2019 and 2020 (projections that have replaced the ones previously mentioned by PP as per the PDD).	
Is the measuring and reporting frequency in	Yes	

	accordance with the monitoring plan and monitoring methodology?	
	Monitoring equipment	NA
	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?	NA
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
	Calibration frequency / interval	NA
	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?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	Data was verified in the applicable version 07 of the PDD and previous monitoring and verification reports (2 nd MP).
	If applicable, has the reported data been crosschecked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are	Data management system was found to be reliable and appropriate for the 3 rd monitoring period (last one of the 1 st CP).

	necessary QA/QC processes in place?	
	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 the CDM Project Standard for Project Activities.	During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3rd MP.
Findings	See CL 01 and CAR 02	
Conclusion	ESPL confirms that PP has followed properly the monitoring plan established in the applicable version 07 of the PDD during the 3 rd monitoring period.	

E.6.3. Sustainable development parameters

Means of verification	SDG alignment (as per the requirements of the GS4GG) of parameters listed in the 3 rd MR used to calculate GHG emission reductions of the project activity was checked against the requirements established in the applicable version 07 of the PDD and GS Guidelines.																																																										
	SDG 8 – Actions of health and security - Number of Health and Security trainings and campaigns conducted during monitoring period																																																										
	Criteria	Assessment by ESPL																																																									
	Measuring / Reading / Recording frequency	This parameter corresponds to evaluate the existence and performance of campaigns, leisure and goal and plans regarding health and security. The events were recorded as they occur. During the onsite visit, ESPL checked the records of training in HSE for the internal staff of the project, where 16 were done during 2019 and 2 during 2020 /20/. ESPL agrees on the correct approach for the monitoring of this parameter as per the guidelines in the registered PDD. In the table below are summarized the dates, places and participants that attended the HSE trainings performed during the MP: <table border="1"> <thead> <tr> <th>Date</th><th>Place</th><th>Nº of participants</th></tr> </thead> <tbody> <tr><td>25/01/2019</td><td>Ceramic Factory</td><td>14</td></tr> <tr><td>25/01/2019</td><td>Ceramic Factory</td><td>3</td></tr> <tr><td>25/01/2019</td><td>Ceramic Factory</td><td>1</td></tr> <tr><td>25/01/2019</td><td>Ceramic Factory</td><td>9</td></tr> <tr><td>25/01/2019</td><td>Ceramic Factory</td><td>14</td></tr> <tr><td>18/03/2019</td><td>Ceramic Factory</td><td>44</td></tr> <tr><td>29/03/2019</td><td>Ceramic Factory</td><td>19</td></tr> <tr><td>10/04/2019</td><td>Ceramic Factory</td><td>39</td></tr> <tr><td>22/03/2019</td><td>Ceramic Factory</td><td>15</td></tr> <tr><td>21/06/2019</td><td>Ceramic Factory</td><td>20</td></tr> <tr><td>05/07/2019</td><td>Ceramic Factory</td><td>19</td></tr> <tr><td>09/08/2019</td><td>Ceramic Factory</td><td>5</td></tr> <tr><td>20/09/2019</td><td>Ceramic Factory</td><td>5</td></tr> <tr><td>27/09/2019</td><td>Ceramic Factory</td><td>5</td></tr> <tr><td>25/10/2019</td><td>Ceramic Factory</td><td>19</td></tr> <tr><td>29/11/2019</td><td>Ceramic Factory</td><td>20</td></tr> <tr><td>12/03/2020</td><td>Ceramic Factory</td><td>20</td></tr> <tr><td>16/03/2020</td><td>Ceramic Factory</td><td>5</td></tr> </tbody> </table>	Date	Place	Nº of participants	25/01/2019	Ceramic Factory	14	25/01/2019	Ceramic Factory	3	25/01/2019	Ceramic Factory	1	25/01/2019	Ceramic Factory	9	25/01/2019	Ceramic Factory	14	18/03/2019	Ceramic Factory	44	29/03/2019	Ceramic Factory	19	10/04/2019	Ceramic Factory	39	22/03/2019	Ceramic Factory	15	21/06/2019	Ceramic Factory	20	05/07/2019	Ceramic Factory	19	09/08/2019	Ceramic Factory	5	20/09/2019	Ceramic Factory	5	27/09/2019	Ceramic Factory	5	25/10/2019	Ceramic Factory	19	29/11/2019	Ceramic Factory	20	12/03/2020	Ceramic Factory	20	16/03/2020	Ceramic Factory	5
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	Is the measuring and reporting frequency in	Yes																																																									

	accordance with the monitoring plan and monitoring methodology?	
	Monitoring equipment	NA
	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?	NA
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
	Calibration frequency / interval	NA
	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?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	Evidence of the trainings performed during the 3 rd MP were presented to ESPL.
	If applicable, has the reported data been crosschecked with other available data?	Interviews to operational and management staff of Santander Ceramic were conducted to cross- check the information. No material misstatements were identified.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA

	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 the CDM Project Standard for Project Activities.		During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3rd MP.
	SDG 7 - Access to affordable and clean energy services – Percentage of energy produced from renewable sources		
	Criteria	Assessment by ESPL	
	Measuring / Reading / Recording frequency	This data was calculated considering the amount of renewable biomass and fossil fuel used in the project activity during the period. The parameter is monitored annually. Data consider the amount of energy consumed by the project activity which comes from combustion of renewable sources. This parameter is calculated based on the amount of renewable biomass consumed (See $Q_{renbiomass}$) described above.	
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes	
	Monitoring equipment	NA	
	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?	NA	
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA	
	Calibration frequency / interval	NA	
	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	NA	

	with the local/national standards, or as per the manufacturer's specifications?	
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	Calculations for the 3 rd MP were provided to the verification team.
	If applicable, has the reported data been crosschecked with other available data?	As per monitoring plan, the monitored values are to be cross-checked with the receipts of delivery of biomass, invoices, etc.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. All biomass invoices applicable to the 3 rd MP were available for the verification team.
	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 the CDM Project Standard for Project Activities.	During the 2 nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3 rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2 nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3 rd MP.

SDG 7- Soil Condition – Procedures related to the control and disposal of ashes	
Criteria	Assessment by ESPL
Measuring / Reading / Recording frequency	This data corresponds to the monitoring of procedures related to the control of disposal of ashes. The project applies the indicator from SOCIAL CARBON Standard: Social Carbon indicators for Ceramic Industry: Ashes which evaluates the procedures adopted by the entrepreneur to control the ashes and its destination. During the onsite visit to the project, ESPL confirmed that ashes are grouped and then mixed and watered with the waste material, composing a mixture used for sealing kilns' doors. Photographical record of this

	assessment was taken as part of the verification. No findings were raised related to this point.
Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
Monitoring equipment	NA
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?	NA
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
Calibration frequency / interval	NA
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?	NA
Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
Is(are) the calibration(s) valid for the entire reporting period?	NA
Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
How were the values in the monitoring report verified?	Interviews were performed and compared to the SOCIALCARBON Standard's score.
If applicable, has the reported data been crosschecked with other available data?	NA
Does the data management	NA

	ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	
	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 the CDM Project Standard for Project Activities.	During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3rd MP.
	SDG 7 - Access to affordable and clean energy services – Energy demand per production output	
	Criteria	Assessment by ESPL
	Measuring / Reading / Recording frequency	This data corresponds comparison of energy demand to produce 1,000 devices with other monitoring periods and with baseline. During the onsite visit, ESPL checked the figures of bricks' production in internal data logs /Ladrillera Santander cuadro de monitoreo 2019-2020.xls/ daily, as well as bills of coal purchasing / <i>compras de carbon y energía. docx</i> / and compared them with the ones in the ER's spreadsheet and found some differences that were corrected in the latest version of the MR for the 3rd MP and ER's excel file. ESPL also confirmed that the resulting value of Energy demand for period 2019 - 2021 were respectively 0.0099 and 0.0104 TJ/thousand bricks.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	NA
	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?	NA
	Is the accuracy valid for the entire measuring range or	NA

	do different accuracy levels apply to different measuring ranges?	
	Calibration frequency / interval	NA
	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?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	Calculations for the 3 rd MP were checked in the ER spreadsheets. No material misstatements were identified.
	If applicable, has the reported data been crosschecked with other available data?	Values were compared with previous monitoring periods (2 nd MP of the 1 st CP). No material misstatements were identified.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	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 the CDM Project Standard for Project Activities.	During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3rd MP.
SDG 13– Quantitative employment and income generation – Voluntary emission reductions issued.		
Criteria	Assessment by ESPL	

	Measuring / Reading / Recording frequency	This parameter corresponds to the amount of VERs issued to date (Nov 2022). The project issued 41,242 VERs in the previous 2 nd monitoring period (01/01/2017 to 31/12/2018) and is claiming an amount of 22,985 VERs for this 3 rd .
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes.
	Monitoring equipment	NA
	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?	NA
	Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA
	Calibration frequency / interval	NA
	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?	NA
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	ESPL reviewed the previous monitoring report and verification report (ones for the 2 nd MP of the 1 st CP).
If applicable, has the reported data been	NA	

	crosschecked with other available data?	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	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 the CDM Project Standard for Project Activities.	During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3rd MP.
	SDG 8 – Quantitative employment and income generation – Revenues for biomass suppliers.	
	Criteria	Assessment by ESPL
	Measuring / Reading / Recording frequency	This parameter corresponds to the income of biomass suppliers (payments for biomass purchases) by Santander Ceramic. Payment is provided either by direct payment or by reducing costs of disposing the waste. Thus, a renewable biomass supply chain is created with multiples beneficiaries.
	Is the measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology?	Yes
	Monitoring equipment	NA
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?	NA	
Is the accuracy valid for the entire measuring range or do different accuracy levels apply to different measuring ranges?	NA	
Calibration frequency / interval	NA	
Is the calibration interval in	NA	

	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?	
	Is the calibration of measuring equipment carried out by an accredited person or institution?	NA
	Is(are) the calibration(s) valid for the entire reporting period?	NA
	Is the calibration carried out for a measuring range comparable with the range for which measurements have been carried out?	NA
	How were the values in the monitoring report verified?	ESPL checked the figures in invoices and purchase receipts.
	If applicable, has the reported data been crosschecked with other available data?	NA
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	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 the CDM Project Standard for Project Activities.	During the 2nd monitoring period, a temporary deviation was required and accepted by GS as the Ceramic Las Tapias 3 could not provide monitoring information and supporting documents during that period. So, its emission reductions for that period were considered as 0 (zero). Deviation remained during the 3rd MP (mainly by the COVID-19 contingency and related financial complexities) and in April 2020 Las Tapias 3 Ceramic Facility was voluntary withdraw of the project for the 2nd crediting period. No VERs were claimed by Las Tapias 3 Ceramic for the 3rd MP.
Findings	No findings were raised related to the SDG alignment and follow-up.	
Conclusion	ESPL confirms that all parameters were determined in a conservative manner and in accordance with the requirements of applied tools, methodology and monitoring plan. All parameters were duly included in the latest version of the MR as per applicable version 07 of the PDD.	

E.6.4. Implementation of sampling plan

Means of verification	ESPL reviewed the latest version of the MR and confirmed that project participants have not applied any sampling approach during the 3 rd monitoring period. All parameters were fully checked as described in the monitoring plan during the 3 rd MP. Documents were checked and interviews with PP's representatives and
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	personnel were performed in order check this information. No material findings were raised.
Findings	NA
Conclusion	No sampling plan was used by the PP.

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

Means of verification	No equipment was used for determining the monitoring parameters.
Findings	NA
Conclusion	Not applicable as no equipment were applied for determining the monitoring parameters.

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	The calculations of baseline emissions have been done in accordance with registered monitoring plan and applied methodology. The equation used is the follow: $BE = EF \times Q_{y\ BSL,y}$ Where: BE_y = Baseline emissions in the year y EF_{BSL} = Emission factor for the baseline situation (tCO₂e/thousand bricks produced) Q_y = Net output in the project activity in year y. (thousands of ceramic units) For determining the parameter EFBSL, the following equation was applied: $EF = (FC_{BSL} \times EF_{CO2} \times NCV) / Q_{BSL}$ Where: FC_{BSL} = Total amount of fossil fuel consumed for captive energy generation in the baseline situation (mass or volume unit) EF_{CO2} = CO₂ emission factor for the baseline fossil fuel (tCO₂/TJ) NCV = Net calorific value for the baseline fuel (TJ/mass or volume unit) Q_{BSL} = Net output generated in the baseline situation during the corresponding period of time for which the total fuel consumption was taken.
Findings	No findings were raised
Conclusion	ESPL confirms that: - the monitored data was available in accordance with the registered monitoring plan for the operational period. - the reported data were crosschecked, as prescribed in the applicable version 07 of the PDD, with the relevant supporting evidence and were found consistent. - appropriate methods and formulae for calculating baseline GHG emissions have been followed. - the assumptions, emission factors and default values that were applied in the calculations are correct and traceable. - the calculations are transparent, consistent, correct, and complete. The baseline emissions obtained for the 3rd monitoring period are equal to: $BE_y = 31,791\ tCO_2e$

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

Means of verification	According to the applied methodology project emissions are to be calculated based on the amount of fossil fuels consumed by the PA during the 3rd monitoring period by applying the equation: $PE = FC \times EF \times NCV$ Where:
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	FC_y = Amount of fossil fuel consumed for captive energy generation in the project activity in year y (mass or volume unit) EF_{CO_2} = CO ₂ emission factor for the baseline fossil fuel (tCO ₂ /TJ) NCV = Net calorific value for the fossil fuel (TJ/mass or volume unit)
Findings	No findings were raised
Conclusion	The calculation of project emissions was carried out in accordance with applied methodology. No inconsistencies were found. The project emissions obtained for the 3rd monitoring period are equal to: $PE_y = 8,806 \text{ tCO}_2\text{e}$

E.8.3. Calculation of leakage GHG emissions

Means of verification	As per surveys conducted in the revalidation phase and during the 1 st crediting period, there is not any competing use of renewable biomass consumed in the project activity and through the results, it was observed that there is a surplus of biomass in the region. Therefore, leakage is considered to be equal to zero. $LE_y = 0$
Findings	No findings were raised
Conclusion	No leakage emissions are to be accounted

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

Means of verification	The emission reductions accounted from the project activity during the 3rd MP are based on baseline emissions minus the project emissions as per equation below: $ER_y = BE_y - PE_y - LE_y$ The calculations presented in the latest version of the MR and corresponding ER spreadsheet were found to be correct. ESPL confirms that a full audit trail that contains the evidence and records to demonstrate the ERs achieved by the project during the 3rd MP is available and was fully cross checked.
Findings	No findings were raised
Conclusion	ESPL confirms that appropriate methods and formulae for calculating GHG emissions reductions have been followed. The summary table has been correctly presented in the latest version of the MR and the figures are correct and justified in the ER spreadsheet. $ER_y = BE_y - PE_y - LE_y; ER_y = 22,985 \text{ tCO}_2\text{e}$

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

Means of verification	Emission reductions achieved during the 3 rd MP were checked against the estimates of the applicable version 07 of the PDD. It could be observed that the figure estimated and reported is consistent. No material misstatements were identified.
Findings	No findings were raised
Conclusion	The comparison of actual values of the 3 rd monitoring period with the estimates in the applicable version 07 of the PDD is properly presented in the latest version of the MR. Any increase has been observed and the material decrease is mainly explained by the COVID 19 contingency.

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

Means of verification	Emission reductions achieved during the 3 rd MP were checked against the estimates of the applicable version 07 of the PDD. It could be observed that the figure estimated and reported is consistent. No material misstatements were identified.
Findings	No findings were raised
Conclusion	The comparison of actual values of the 3 rd monitoring period with the estimates in the applicable version 07 of the PDD is properly presented in the latest version of the MR. Any increase has been observed and the material decrease is mainly explained by the COVID 19 contingency.

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	The emission reductions accounted from the project activity during the 3rd MP are all happened from 1 January 2013 onwards. The calculations presented in the latest version of the MR and corresponding ER spreadsheet were found to be correct. ESPL confirms that a full audit trail that contains the evidence and records to demonstrate the ERs achieved by the project during the 3rd MP is available and was fully cross checked.
Findings	No findings were raised
Conclusion	Actual GHG ERs are part of the period from 1 January 2013 until 31 December 2020.

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

Means of verification	The sustainable development parameters were already described in the section E.6.3 above.
Findings	No findings were raised
Conclusion	ESPL confirms that co-benefits have been monitored as required by the applicable version 07 of the PDD and GS guidelines during the 3 rd MP. No material misstatements were identified.

E.10. Continuous inputs and grievance mechanism

Means of verification	During the site visit, ESPL held interviews with members of the staff of maintenance and operations, as well as some nearby members of the community (not formal interviews but ones to a couple of passers-by ran into the trip to the brick factory) in order to know any feedback received during the MP. Despite the project did not receive any feedback (i.e grievance, legal contest, or disputes etc.) during the 3rd MP, it was confirmed that a continuous grievance mechanism is in place and available in case of any feedback by the project's stakeholders. Existing grievance mechanism involves: ▪ availability of corporate email (ladrillera.santander@hotmail.com) ▪ availability of a land line (+57 2835536) ▪ Physical suggestion box. ▪ opportunity to report their suggestions and complaints during the monthly meetings. ▪ opportunity to report suggestions for the community members who can go to the ceramic site to report their suggestions and complaints.
Findings	No findings were raised.
Conclusion	ESPL confirms the proper operation of the mechanism established by the project for the attention and feedback of any input or grievance by the stakeholders.

SECTION F. Internal quality control

The draft verification report prepared by ESPL for the 3rd MP of the project 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

Earthood Services Private Limited, contracted by Sustainable Carbon – Projetos Ambientais Ltda, has performed the independent verification of the emission reductions and Sustainable Development Goals for the GS project activity “Santander and Las Tapias Renewable Energy Project” – Ref.: GS1074 – in Colombia, for the 3rd monitoring period (last MP of the 1st CP) from 01/01/2019 to 31/03/2020 (including both days) as reported in the Monitoring Report – version 07.

Sustainable Carbon – Projetos Ambientais Ltda is responsible for the compilation 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 “Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement”, Version 1.0, the monitoring plan contained in the applicable PDD – version 07.

The verification approach followed by ESPL 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.

ESPL confirms that:

- the project activity was found completely implemented as per the description given in the applicable version 07 of the PDD for the 3rd monitoring period of the PA; and
- the actual operation is conforming with the description in the registered PDD and GS Passport.

SECTION H. Certification statement

Earthood Services Private Limited, contracted by Sustainable Carbon – Projetos Ambientais Ltda, has performed the independent verification of the emission reductions for the GS project activity “Santander and Las Tapias Renewable Energy Project” – Ref.: GS1074 in Colombia, for the 3rd monitoring period from 01/01/2019 to 31/03/2020 (including both days) as reported in the Monitoring Report, version 07. Sustainable Carbon Projetos Ambientais Ltda is responsible for the compilation of data in accordance with the monitoring plan, GS Passport and the reporting of GHG emissions reductions from the project activity.

ESPL commenced the verification based on the baseline and monitoring methodology Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement”, Version 1.0, the monitoring plan contained in the registered PDD, GS Passport and Monitoring Report – version 07.

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.

In our opinion the GHG emissions reductions reported for the project activity for the period from 01/01/2019 to 31/03/2020 (including both days) are fairly stated in the Monitoring Report version 07. The GHG emission reductions were calculated correctly based on the baseline and monitoring methodology Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement”, Version 1.0 and the monitoring plan contained in the applicable PDD – version 07 and GS Passport version 4 and are fully aligned with the GS4GG.

Earthood Services Private Limited can certify that the emission reductions from the GS project activity “Santander and Las Tapias Renewable Energy Project”, in Colombia, for the 3rd monitoring period from 01/01/2019 to 31/03/2020 (including both days) is equal to 22,985 tCO_{2e} (SDG 13).

Appendix 1. Abbreviations

Abbreviations	Full texts
BL	Baseline
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CL	Clarification Request
CME	Coordinating Managing Entity
DOE	Designated Operational Entity
DVerR	Draft Verification Report
ER	Emission Reduction
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GS	Gold Standard
GS4GG	Gold Standard for Global Goals
LPP	Local Project Participant
MAI	Mean Annual Increment
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
NRB	Non-Renewable Biomass
ODA	Official Development Assistance
PA	Project Activity
PoA	Programme of Activities
PP	Project Participant
PS	Project Scenario
QA/QC	Quality Assurance / Quality Control
SD	Sustainable Development
SDG	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change
VER	Verified Emission Reduction
VPA	Voluntary Programme of Activities
VPA-DD	Voluntary Programme of Activities Design Document
VVS	Validation and Verification Standard
XLS	Emission Reduction Calculation Spread Sheet

Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Marcelo Sebben		
Country	Brazil		
Education	M.Sc. (Sustainable Energy System) B. Eng. (Chemical Engineering)		
Experience	13 Years		
Field	Chemical process industry, CDM, Energy, Climate Change		
Approved Roles			
Team Leader	Yes		
Validator	Yes		
Verifier	Yes		
Methodology Expert	Yes (Eco. Sound Fuel Switch to Biomass with Reduced Energy Requirement)		
Local expert	Brazil, Chile, Honduras		
Financial Expert	Yes		
Technical Reviewer	No		
TA Expert	Yes (TA 1.1, 1.2, 5.1, 9.1, 13.1)		
Reviewed by	Shreya Garg	Date	29/08/2019
Approved by	Anshika Gupta	Date	29/08/2019

Competence Statement			
Name	Deepika Mahala		
Country	India		
Education	M. Sc. (Environment Management), GGSIP University B.Sc. Hons. (Chemistry), Sri Venkateshwar College, DU		
Experience	6 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	ACM0002, AMS.I.D., AMS.I.A, AMS.III.AV, AMS.II.G, AMS-II.C		
Local expert	YES (India, Bangladesh)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2 & TA 3.1)		
Reviewed by	Shifali Guleria (QM)	Date	28/04/2022
Approved by	Kaviraj Singh (MD)	Date	28/04/2022

Competence Statement	
Name	Cristian Grisales
Education	Master Renewable Energies
Experience	14 years
Field	Consultancy, Conformity Assessment
Approved Roles	
Team Leader	Yes
Validator	Yes
Verifier	Yes
Methodology Expert	No

Local expert	Colombia		
Financial Expert	No		
Technical Reviewer	No		
TA Expert	Yes (1.2, 13.1)		
Reviewed by	Deepika Mahala	Date	23/04/2021
Approved by	Ashok Kumar Gautam	Date	23/04/2021

Competence Statement			
Name	Shreya Garg		
Country	India		
Education	M.Sc. (Climate Science & Policy), TERI University		
Experience	6 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	Yes		
Validator	Yes		
Verifier	Yes		
Methodology Expert	Yes (AMS-I.A, AMS-I.C, AMS-I.D, AMS-I.F, AMS-II.D, AMS-II.G, AMS-II.J, AMS-III.AV, AMS-III.BL, ACM0002, ACM0012)		
Local expert	Yes (India)		
Financial Expert	No		
Technical Reviewer	Yes		
TA Expert	Yes (1.2, 3.1)		
Reviewed by	Shifali Guleria	Date	26/04/2022
Approved by	Deepika Mahala	Date	26/04/2022

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	UNFCCC	CDM validation and verification standard for project activities	Ver 3.0	Other
2.	UNFCCC	Guidelines for sampling and surveys for CDM project activities and programmes of activities	Ver 04.0	Other
3.	UNFCCC	CDM VCR-FORM	Ver 04.0	Other
4.	GS	Monitoring report form	Ver 1.1	Other
5.	PP	Monitoring report 3 rd MP	Version 01, dated on 11/10/2022 Version 02, dated on 08/11/2022 Version 03, dated on 11/11/2022 Version 04, dated on 02/06/2023 Version 05, dated on 18/09/2023 Version 06, dated on 01/11/2023 Version 07, dated on 03/05/2024	PP
6.	PP	ER spreadsheet 3 rd MP	Version 01, dated on 11/10/2022 Version 02, dated on 08/11/2022 Version 03, dated on 11/11/2022 Version 04, dated on 18/03/2024	PP
7.	PP	PDD for the 1 st crediting period	Version 07, dated on 05/11/2013	PP
8.	PP	PDD for the 2 nd crediting period	Version 16, dated on 01/06/2021	PP
9.	GS	Methodology approved under the Gold Standard for Voluntary small scale projects: "Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement"	Version 01	Other
10.	TUV Nord	Verification report for the 1 st MP	Version 01, dated on 02/06/2017	Other
11.	ESPL	Verification report for the 2 nd MP	Version 01, dated on 18/06/2019	Other
12.	PP	Brick production logbooks (cuaderno de control de horno)	Dated in 2019, 2020 and 2021.	PP
13.	PP	Brick production Excel file on a monthly basis (ENDAGUE HORNOS 2019, 2020 and 2021.xls).	Dated in 2019, 2020 and 2021.	PP
14.	PP	Operational logbooks and the Production Excel file (Ladrillera Santander cuadro de monitoreo 2019, 2020, 2021.xls)	Dated in 2019, 2020 and 2021.	PP
15.	PP	Fuel purchase invoices (compras de carbon y energía.docx)	Dated in 2019, 2020 and 2021.	PP
16.	PP	Database of coal purchasing (Ladrillera Santander cuadro de monitoreo 2020, 2021 and 2022.xls).	Dated in 2019, 2020 and 2021.	PP
17.	PP	Pulp and paper sludge: Lab analysis carried out by the Fuel Combustion Laboratory of Universidad del Valle / Cali, Colombia in March 2015, required by Santander Ceramic Industry.	Dated in March 2015	PP
18.	UNFCCC	Renewable biomass definition: as per Annex 18 of the 23rd meeting report of the CDM Executive Board	http://cdm.unfccc.int/EB/Meetings/023/eb23_repan18.pdf	Other
19.	UPME	<u>Biomass surplus evidences</u> <u>1. UNIDAD DE PLANEACIÓN MINERO ENERGÉTICA. Potencialidades de los Cultivos Energéticos y Residuos Agrícolas en Colombia. Resumen Ejecutivo. Bogotá, D.C., 2003.</u>	Dated in 2003 http://www.si3ea.gov.co/si3ea/documentos/documentacion/energias_alternativas/potencialidades/biomasa_CULTIVO_S%20ENERGETICOS.pdf	Other
20.	PP	<u>Meeting minutes and attendance lists of HSE trainings performed to the Ladrillera Santander's staff during 2019 and 2021.</u>	Dated in 2019 and 2020	PP

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

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

FAR ID	02	Section no.	D.2	Date:	05/08/2020
Description of CAR					
Considering that the renewal process has not take place until the last day of the previous CP, according to the GS4GG Principles and Requirements paragraph 5.1.46, no VERs are to be claimed between the last day of the 1st CP and the day of the submission of a Renewal opinion by a VVB for Design Review to Gold Standard.					
Project participant response					Date: 16/12/2022
Combined report 2021-2022 uploaded in Sustaincert was given to the audit team.					
Documentation provided by project participant					
Combined report 2021-2022 uploaded in Sustaincert.					
DOE assessment					Date: 03/02/2023
It was confirmed that a combined report for 2021 and 2022 was prepared by the project and it was directly uploaded into the Sustaincert Platform. ESPL also reviewed the reporting done by PP in section B.1.1 of the latest version of the monitoring report and found it correct. No VERs claimed was done between the last day of the 1st CP and the day of the submission of a Renewal opinion by a VVB for Design Review to Gold Standard.					

Table 2. CL from this verification

CL ID	01	Section no.	D.2	Date:	26/11/2022
Description of CL					
On MR 3 rd MP, section D.2, parameter NCV _{biomass} , the link reported as "source of data" does not include the figures of NCV reported.					
Project participant response					Date: 16/12/2022
The link has been updated in the respective section D.2 on MR 3 rd MP NCV _{biomass} for Wood Residues and Sawdust. Evidence about the study on Pulp and Paper Sludge NCV was send along with documents. All calculations for this parameter are validated and described in version 7 of the respective PDD, as well as the description contained in the parameter table in the MR in the topic "Calculation Method". The NCV of Sawdust was calculated through the value of the NCV from Sawdust presented on page 8 of the link provided (3,500 kcal/kg) and with the conversion factor from kcal/kg to TJ/tonne. The NCV of wood residues was calculated through the average of the NCVs from Eucalyptus bark (3,750 kcal/kg), Eucalyptus woodchips (4,300 kcal/kg), and wood pieces (3,300 kcal/kg), presented on Table shown on page 8 of the document provided by the link. In addition, the conversion factor from kcal/kg to TJ/tonne was made to be in accordance with the other calculations (1 Kilocalories [kcal] = 0,000 000 004 186 8 Terajoule [TJ]), according to the description of the calculations: Wood Residues: Average: 3,783.3 kcal/kg Conversion factor <i>kcal</i> to <i>TJ</i> : $1,583992044 \times 10^{-5}$ TJ Conversion factor <i>kg</i> to <i>tonnes</i> : $(1,583992044 \times 10^{-5}) \times 1000$ NCV _{biomass} : 0,0158 TJ/tonne. Sawdust: NCV Dry sawdust (20% water): 3,500 kcal/kg Conversion factor <i>kcal</i> to <i>TJ</i> : $1,46538 \times 10^{-5}$ TJ Conversion factor <i>kg</i> to <i>tonnes</i> : $(1,46538 \times 10^{-5}) \times 1000$ NCV _{biomass} : 0,0147 TJ/tonne. 30/01/2023: The calculations done was presented in the ER's Spreadsheet -- GSMR_Calculation_Santander_3rd_01 01 2019_31 03 2020_v.03 -- in order to get the final figures of NCV for biomass.					
Documentation provided by project participant					
03. Version 03>3 ^o Monitoring Period> GSMR_Calculation_Santander_3rd_01 01 2019_31 03 2020_v.03					
DOE assessment					Date: 03/02/2023
In the first round of assessment to the action plan, ESPL checked the answer given by the PP and found it					

incomplete. PP is requested to present the calculations done in order to get the final figures of NCV for biomass in the ER's spreadsheet. In the 2nd round of assessment to the action plan, ESPL checked the answer given by the PP and found it completed. The finding was closed.

Table 3. CAR from this verification

CAR ID	01	Section no.	D.2	Date: 26/11/2022
Description of CAR				
On MR 3 rd MP, section D.2, parameter "FCy", figures of consumption of coal for 2019 are not consistent with the ones in the operational data logs reviewed at the plant. Additionally, on ER's spreadsheet version 1, tag "Project Emissions", parameter "FCy", the figure of coal consumed in Jan 2019 does not agree with the one in the bill of coal purchasing for the same month.				
Project participant response				Date: 16/12/2022
Coal consumption figures for January-2019 have been corrected as per revised operating data records at the plant in the ER spreadsheet "Project Emissions", parameter "FCy". Additionally, the value was corrected on the MR 3 rd MP, section D.2, parameter "FCy". 30/01/2023: The values for the purchase of coal presented in the bills are filled in in the ceramic control worksheet - Ladrillera Santander cuadro de monitoreo 2019.xls - The "Datos- combustible" tab contains the values described in the ERs spreadsheet. To check, select the total sum of the amount of coal.				
Documentation provided by project participant				
Draft Evidence>CAR 01>Ladrillera Santander cuadro de monitoreo 2019.xls				
DOE assessment				Date: 03/02/2023
In the first round of assessment to the action plan, ESPL checked the answer given by the PP and found it incomplete. PP is requested to present the calculation of coal purchases reported aligned with the figures in the bills. In the second round of assessment to the action plan, ESPL checked the answer given by the PP and found it completed. The finding was closed.				

CAR ID	02	Section no.	D.2	Date: 26/11/2022
Description of CAR				
On MR 3 rd MP section D.2, parameter "Leakage due to competing uses of biomass", PP did not provide a source of data for the reported figures.				
Project participant response				Date: 16/12/2022
Sources of data for reported values were included in MR 3 rd and 4 th MP on section D.2, parameter "Leakage due to competing uses of biomass". All calculations are described in the respective PDDs. For the 3 rd MR, the description of the calculations is available in section B.6 of the Validation PDD version 7. For the 4 th MR, the calculations are detailed in section B.6.1 of the Revalidation PDD version 16. 30/01/2023: Reported data sources was updated and now refer to the described documents.				
Documentation provided by project participant				
3 ^o Monitoring Report Version 02: GSMR_Santander_3th_01 01 2019_31 03 2020_v.03 4 ^o Monitoring Report Version 02: GSMR_Santander_4th_01 04 2020_31 12 2021_v.03				
DOE assessment				Date: 03/02/2023
In the first round of assessment to the action plan, ESPL checked the answer given by the PP and found it incomplete. The sources of data reported are not referring to the documents depicted. In the second round of assessment to the action plan, ESPL checked the answer given by the PP and found it completed. The finding was closed				

CAR ID	03	Section no.	D.2	Date: 26/11/2022
Description of CAR				
On MR 3 rd MP, section D.2, parameter "% of energy produced from renewable sources", the values of energy produced from fossil fuel sources do not agree with the ones in the raw data source of coal and biomass.				
Project participant response				Date: 16/12/2022
The values of energy produced from fossil sources were corrected according to the raw data source of coal and biomass in MR 3 rd MP, section D.2, parameter "% of energy produced from renewable sources".				
Documentation provided by project participant				
3 ^o Monitoring Report Version 02: GSMR_Santander_3th_01 01 2019_31 03 2020_v.02				
DOE assessment				Date: 26/01/2023
ESPL checked the answer given by PP and corrections done in the latest version of the MR and found them correct. The finding was closed.				

Table 4. FAR from this verification

No FARs were raised for the 3rd monitoring period.

Appendix 5. Eligibility for principles and requirements of GS4GG renewable activity requirements

Eligibility Criteria for GS4GG renewable activity requirements	
Criteria	Assessment by ESPL
Project activities making use of non-renewable biomass resources shall NOT be eligible for Gold Standard registration. Project developers shall, therefore, provide convincing evidence that the project activities make use of renewable biomass resources. The renewability of the biomass shall be monitored throughout the crediting period and be included in the Monitoring & Reporting Plan, where required by the applied Impact quantification methodology.	ESPL checked the tickets of renewable biomass purchased from ENEL Green Power (Local Grid Operator)/15/ and received as donation from local tree pruning associations. The origin in both cases was from local sawmills and as result of prune by maintenance activities in the transmission and distribution power lines (making use of surplus biomass). Both sources are considered traceable and aligned with the requirements in the registered PDD and GS rules.
Project activities expected to make use of biomass resources already in use shall NOT be eligible for Gold Standard registration unless convincing evidence is provided to demonstrate that the current users agree with the envisioned shift of use (potential leakage associated to such a shift must be taken into account). In the absence of such an agreement, Project Developers shall demonstrate that their project activity makes use of surplus biomass for each type of biomass resources used. They must do so once, ex-ante on time for validation for small-scale project activities (installed capacity up to 15 MW _{el} or 45 MW _{th}), and in time for validation and for each one of the verifications (inclusion in the Monitoring Plan) for project activities greater than 15 MW _{el} or 45 MW _{th} .	NA. As mentioned above, the project activity only uses surpluses of biomass from tree pruning and local sawmills.
Project Developers shall demonstrate that their project will only make use of degraded land and shall include this criterion in the Sustainability Monitoring Plan to ensure there is no diversion of land from other essential purposes like food production. Two exceptions may be considered: - Convincing evidence is provided showing that the envisioned energy crop is part of a traditional rotational cropping, OR - An increase of the productivity is obtained, locally and to the benefit of the current users, through measures implemented in the context of the activity so as to at minimum compensate for the part of the land newly allocated to growing the energy crop. Compliance with these criteria above must be monitored over the crediting period and thus be part of the Monitoring & Reporting Plan.	NA. As mentioned above, the project activity only uses surpluses of biomass from tree pruning and local sawmills. There is not any use of biomass from degraded land.
Activities making use of GMOs shall also comply with the requirements prescribed in 'Principle 9.3 - Genetic Resources' of the Safeguarding Principles and Requirements.	NA. As mentioned above, the project activity only uses surpluses of biomass from tree pruning and local sawmills. There is not any use of biomass from GMOs.
Activities resulting in avoidance of methane from biomass decay shall be eligible as long as biomass is used as a substitution for non-renewable fuels in project activities	NA. As mentioned above, the project activity only uses surpluses of biomass from tree

Eligibility Criteria for GS4GG renewable activity requirements	
Criteria	Assessment by ESPL
delivering energy services or for the production of a usable product with demonstrable sustainable development benefits (e.g. composting).	pruning and local sawmills.
The use of non-renewable fuel in biomass heat and/or electricity generation plants is authorised as long as the renewable fuel share reaches 50% ²¹ after the first 3 years of operation for retrofit projects and represents 80% from the outset for Greenfield projects.	NA. The project activity is not an electricity generation plant. Renewable biomass is used for brick production.
The eligibility of project activities making use of Palm oil and/or palm oil mill by-products or residues for electricity and/or heat generation, and/or for biofuel production shall be evaluated on a case-by-case basis by Gold Standard, at the time of preliminary review.	NA. As mentioned above, the project activity only uses surpluses of biomass from tree pruning and local sawmills.

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
04.0	6 April 2021	Revision to: • Reflect the “Clarification: Regulatory requirements under temporary measures for post-2020 cases” (CDM-EB109-A01-CLAR).
03.0	31 May 2019	Revision to: • 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.
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