

GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG) REPORT

- VERIFICATION



Project Title: *Ecoparque Candeias Landfill Gas Project*
Monitoring Period: *29/09/2023 to 31/08/2025 (Both days included)*
GS project ID: *GS12047*
Internal ID: *BELL_GS_VER_17824*
Customer: *Orizon Valorização de Resíduos S.A.*
Date: *19/12/2025*
Revision: *1*

SUMMARY			
Reference No.	Date (first version)	Version No.	Date (last version)
BELL_GS_VER_17824	19/12/2025	1.0	19/12/2025
GS4GG Verification			
GS4GG Certified Product (sought):		GHG Emission Reductions	
GS4GG SDG Impact Statement (sought):		Impact Certification	
General Information			
Client	Orizon Valorização de Resíduos S.A.		
Project Title	Ecoparque Candeias Landfill Gas Project		
Project Developer	Orizon Valorização de Resíduos S.A..		
Project Location	Jaboatão dos Guararapes, Pernambuco State, Brazil		
Contact Person	Mr Dalton Canelhas		
Monitoring Period	29/09/2023 to 31/08/2025 (both days included)		
GS4GG Version: GS4GG Principles and Requirements, version 2.1 GS4GG Validation and Verification Standard, version 2.0 GS4GG GHG Emission Reduction & Sequestration Product Requirement, version 3.1 GS4GG Activity Requirements: Renewable Energy Activity Requirements, version 1.4 Applied Methodology Version: ACM0001 Version 19.0 - “Flaring or use of landfill gas”.		GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 1 and 13 Technical Area: 1.1 and 13.1 Date of project design certification: 15/10/2023 Scale of the project activity: large scale	
Initial Monitoring Report Version: 1.0 Date: 01/11/2025		Final Monitoring Report Version: 2.0 Date: 25/11/2025	
GS4GG PDD for the GS project activity Version 7.1 Date: 22/07/2025 GS Passport Version (if applicable): Not applicable.			
Estimated Annual Average SDG impacts as per the GS4GG PDD (for the period equivalent to the considered monitoring period): SDG 7 (Affordable and clean energy): 432,455 MWh SDG 8 (Decent work and economic growth): 21 jobs/year SDG 13 (Climate action): 879,836 tCO2e			
SDG outcome achieved during this monitoring period: SDG 7 (Affordable and clean energy): 307,666 MWh			

SDG 8 (Decent work and economic growth): 20 jobs/year (average value during the considered monitoring period)

SDG 13 (Climate action): 1,341,274 tCO₂e

Selected Sustainable Development Goals (SDGs): 7, 8, 13

Verification Summary

LGAI Technological Center, S.A. (hereinafter referred to as "Applus+ Certification") was commissioned by the project developer Orizon Valorização de Resíduos S.A. to perform the 3rd periodic verification under the GS4GG (monitoring period from 29/09/2023 to 31/08/2025) of the registered GS project activity titled "Ecoparque Candeias Landfill Gas Project" (Ref. No. GS 12047) (hereinafter referred to as "the GS project activity").

Under conformance with Section 9.3 of the GS4GG Validation and Verification Standard (version 2.0), desk review, onsite inspection and interviews with representatives of the project developer Orizon Valorização de Resíduos S.A. were conducted as part of the GS verification assessment in order to verify and confirm information and data included in the Monitoring Report and emission reductions spreadsheet.

The following documents were reviewed by Applus+ Certification:

- GS4GG PDD (version 7.1), including the corresponding Validation Report;
- Monitoring report (all versions);
- The applied CDM baseline and monitoring methodology (ACM0001 (version 19.0) + all applicable CDM methodological tools;
- Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board;
- The GS4GG Validation and Verification Standard (version 2.0)
- The GS4GG Renewable Energy Activity Requirements (version 1.4)
- GS4GG GHG Emission Reduction & Sequestration Product Requirements (version 3.1)
- The GS4GG "Principles and Requirements" (version 2.1) and all other GS regulatory documents with relevant requirements, procedures and guidance;
- All information and references used for the determination of emission reductions and the other relevant SDGs for the GS project activity.

The project developer Orizon Valorização de Resíduos S.A. has operated the "Ecoparque Candeias Landfill Gas Project" which is located in the municipality of Jaboatão dos Guararapes, Pernambuco State, Brazil. During the considered monitoring period, the GS project activity encompassed collection of landfill gas (LFG) generated at the Ecoparque Candeias landfill, destruction of LFG through flaring and also utilization of LFG as gaseous fuel for electricity generation. LFG (rich in methane (CH₄)) has been historically generated at the Ecoparque Candeias landfill as a result of decay of organic fraction of MSW historically disposed at this landfill site.

The baseline scenario for the GS project activity represents the continuation of the pre-project situation at the Ecoparque Candeias landfill: largest share of LFG generated at the landfill being directly emitted into the atmosphere through the pre-project passive and conventional LFG venting/combustion drains and through the surface of the landfill, with a small share of LFG being combusted/destroyed in such pre-project passive and conventional LFG venting/combustion drains. For electricity generation, the baseline scenario represents equivalent amount of electricity generated by the GS project activity being otherwise generated in existent electricity generation sources (including fossil fuel fired electricity generation facilities) connected to the National Electricity Grid of Brazil and addition of new electricity generation sources.

Applus+ Certification confirms that the GS project activity is implemented and in general has operated during the considered monitoring period in accordance with its registered GS4GG PDD.

The monitoring plan complies with the applied CDM baseline and monitoring methodology ACM0001 (version 19.0) + applicable CDM methodological tools and the GS4GG "Principles and Requirements" (version 2.1). The project monitoring system (as described in the registered GS4GG PDD for the GS project activity) is in

place and emission reductions achieved by the GS project activity during the considered monitoring period were correctly calculated and without any material misstatements.

Based on the information reviewed and evaluated, Applus+ Certification confirms that the operation of the GS project activity has promoted GHG emission reductions of 1,341,274 tCO₂e during the monitoring period 29/09/2023 to 31/08/2025 (both days included).

The scope of the GS verification assessment is defined as an independent and objective review of the Monitoring Report and emission reductions calculation spreadsheets, against all applicable principles, rules, requirements, procedures and guidelines from GS4GG and from UNFCCC/CDM. The GS Verification Report is finalized based on the assessment of the Monitoring Report for the considered monitoring period by applying standard auditing techniques (as also presented in the GS4GG Audit techniques template) including but not limited to document desk review, onsite inspection, follow up actions (e.g. telephone or e-mail interviews) and also the review applicable requirements of the applied CDM baseline and monitoring methodology + applied CDM methodological tools.

The performed GS verification assessment includes a total of 5 raised Corrective Action Requests (CARs) + 1 Forward Action Request (FAR) (raised during the renewal of the crediting period under the GS4GG and applicable in the context of the current monitoring period) which were sufficiently and satisfactorily addressed by the project developer. The appointed Applus+ Certification's verification team was able to confirm that the project developer has successfully addressed all raised findings by modifying/amending/correcting the Monitoring Report accordingly and/or by providing adequate additional related explanations and documented evidence. Applus+ Certification therefore confirms that all raised findings were appropriately closed prior to submitting the request for issuance of GS VERs to the Gold Standard.

As a summary of the verification, Applus+ Certification obtained sufficient evidence and deemed appropriate documentation (including the appropriate completed Monitoring Report) for the determination of the project's fulfillment with all stated criteria.

ASSESSMENT TEAM ¹		
Team Members	Type of Resource ²	Organization (for OEs)
Lead Auditor/Technical Expert/Country Expert/GS Approved Auditor: Mr. Guilherme Horiuchi	☐ IR ☒ EI ☐ OE	-
Technical Reviewer/Technical Expert: Mr. Denny Xue	☐ IR ☒ EI ☐ OE	-

¹ It is important to note that the following assessments for the project activity were performed by a different Applus+ Certification's assessment team:

- Validation assessment for design certification renewal of the project activity (Design Certification Renewal). The appointed team members for this specific assessment were: Mr. Marco A. Ratton (Lead Auditor/Technical Expert/Financial Expert) and Mr. Simon Shen (Technical Reviewer).
- Verification assessment for the 212-day monitoring period from 01/03/2023 to 28/09/2023. The appointed team members for this specific assessment were: Mr. Luis Filipe Tavares (Lead Auditor/Technical Expert/Financial Expert) and Mr. Denny Xue (Technical Reviewer).

² IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

1. Executive summary

1.1 Brief description of the GS project activity and performed verification assessment

Applus+ Certification was commissioned by the project developer Orizon Valorização de Resíduos S.A. to perform the 3rd periodic verification under the GS4GG of the GS project activity titled "Ecoparque Candeias landfill gas project" (hereafter termed "the GS project activity"). The considered monitoring period encompasses the period from 29/09/2023 to 31/08/2025 (the first monitoring period within the project's last crediting period within the GS4GG (from 29/09/2023 to 28/09/2026)). The project developer Orizon Valorização de Resíduos S.A. is responsible for the completion of the Monitoring Report.

The GS project activity represents a previously registered Project Activity under the UNFCCC's Clean Development Mechanism (CDM) (formerly titled "CTR Candeias Landfill Gas Project" (UNFCCC ref. 3958) which was transitioned to the GS4GG.

Applus+ Certification is accredited as a Validation and Verification Body (VVB) under the GS4GG and as a Designated Operational Entity (DOE) by the UNFCCC, therefore meeting competence requirements as set out in ISO 14065 standard.

The performed GS verification assessment is valid for the monitoring period from 29/09/2023 to 31/08/2025 (including both days) and it was performed on the basis of (i) comprehensive document review of the Monitoring Report ^{/04/} and GS4GG PDD for the GS project activity ^{/02/} + supporting documents; (ii) performance of an onsite inspection; (iii) conducted interviews with representatives of the project developer and project owner/operator Orizon Valorização de Resíduos S.A.; (iv) resolution of all identified outstanding issues (identified Corrective Action Requests (CARs) and Clarification Requests (CLs)) and, finally, (v) issuance of the Verification Report.

During the considered monitoring period, the project design encompassed (i) collection of LFG, (ii) utilization of share of collected LFG as gaseous fuel for electricity generation and (iii) destruction of share of collected LFG through combustion of LFG in a high temperature enclosed flare. During the whole considered monitoring period, the GS project activity therefore promoted reduction of emissions of the greenhouse gas (GHG) methane (CH₄) into the atmosphere (that would otherwise occur in the absence of the GS project activity (baseline scenario)). The GS project activity also promoted carbon dioxide (CO₂) emission reductions due to displacement of CO₂ emission intensive electricity by electricity generated by the GS project activity.

As confirmed by the Applus+ Certification's verification team, by the end of the considered monitoring period, the project's infrastructure was gradually implemented (as previously forecasted in the CDM PDD ^{/57/}) and it currently encompasses, as methane destruction/utilization devices, one high temperature enclosed flare and 20 engine-generator sets.

As per the design of the GS project activity, the electricity demand of the GS project activity is to be met by consumption of grid-sourced electricity, by electricity generated in the installed backup off-grid generator (fueled by diesel) (which has not operated during the considered monitoring period) and/or by electricity sourced by the project's electricity generation infrastructure.

As confirmed by the Applus+ Certification's verification team, the project's backup captive off-grid electricity generator (fueled by diesel) has not operated during the whole considered monitoring period.

The Ecoparque Candeias landfill is located in Municipality of Jaboatão, in the Pernambuco State, Brazil. The geographical coordinates of the project site are as follows:

- 8°09'51.3"S (-8.164258)
- 34°59'07.0"W (-34.985286)

The Ecoparque Candeias landfill started its Municipal Solid Waste (MSW) permanent disposal activities in the year 2007.

The landfill has received all necessary environmental licenses/permits for its operation. The landfill currently receives about 3,300 tons per day of MSW from the municipalities of Recife, Jaboatão dos Guararapes and other nearby municipalities.

The Applus+ Certification's verification team has also confirmed that GHG emission reductions generated and/or yet to be generated by the GS project activity will not be used for compliance with any emissions trading program or used to meet binding limits on GHG emissions in any compliance or voluntary GHG emission trading program or other binding limit mechanism.

1.2 Scope of the verification

The GS verification assessment shall ensure that reported GHG emission reductions for the considered monitoring period of the GS project activity are deemed complete and sufficiently accurate in order to be certified. The GS verification assessment, as an independent and objective review, shall verify and confirm whether the occurred implementation of the GS project activity as well as measures taken to monitor and report achieved emission reductions and the previously defined SDG goals of the GS project activity for a considered monitoring period comply with the Gold Standard for Global Goals "Principles and Requirements" (version 2.1) ^{/01/} and/or with all other GS regulatory documents with relevant requirements, procedures and guidance.

The verification assessment of the GS project activity is based on comprehensive and detailed review of information made available in (i) the registered GS4GG PDD for the GS project activity (version 7.1) ^{/02/}; (ii) the Monitoring Report ^{/04/} (incl. the emission reduction calculation spreadsheets that are enclosed to the Monitoring Report) for the considered monitoring period and (iii) all other supporting documents made available to the Applus+ Certification verification team + review of information collected through performance of interviews.

Furthermore, as part of the verification assessment, publicly available information is considered and reviewed as far as available and required.

The verification assessment was carried out on the basis of the following rules and requirements that are applicable for the GS project activity:

- Article 12 of the Kyoto Protocol ^{/63/},
- Guidelines for the implementation of Article 12 of the Kyoto Protocol as presented in the Marrakech Accords under decision 3/CMP.1 ^{/08/} and subsequent decisions made by the Executive Board and COP/MOP,
- Other relevant rules, including applicable and valid host country legislation/regulations,
- The UNFCCC CDM validation and verification standard for project activities (CDM-VVS-PA) (version 03.0) ^{/56/},

- The GS4GG Validation and Verification Standard (version 2.0) ^{/46/},
- The monitoring plan of the registered GS4GG PDD for the GS project activity (version 7.1, dated 22/07/2025) ^{/02/}.
- The CDM baseline and monitoring methodology ACM0001 “Flaring or use of landfill gas” (version 19.0) ^{/06/},
- Monitoring Report for the considered monitoring period (all versions) ^{/04/},
- The following CDM methodological tools, which are referred to in the Monitoring Report:
 - TOOL02 - “Combined tool to identify the baseline scenario and demonstrate additionality” (version 7.0) ^{/64/}
 - TOOL03 - “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” (version 03.0) ^{/12/}
 - TOOL04 - “Emissions from solid waste disposal sites” (version 08.1) ^{/17/}
 - TOOL05 - “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” (version 03.0) ^{/11/}
 - TOOL06 - “Project emissions from flaring” (version 04.0) ^{/10/}
 - TOOL07 - “Tool to calculate the emission factor for an electricity system” (version 07.0) ^{/15/}
 - TOOL08 - “Tool to determine the mass flow of a greenhouse gas in a gaseous stream” (version 03.0) ^{/14/}
 - TOOL09 - “Determining the baseline efficiency of thermal or electric energy generation systems” (version 03.0) ^{/57/}
 - TOOL11 - “Assessment of the validity of the original/current baseline and to update the baseline at the renewal of a crediting period” (version 03.0.1) ^{/47/}

1.3 Verification process

The verification process is based on applicable verification guidelines described in the GS4GG Validation and Verification Standard (version 2.0) ^{/46/}. In addition to that, standard auditing techniques were applied by the appointed Applus+ Certification’s Verification team. As part of the verification assessment, the Applus+ Certification’s Verification team initially performed a desk review on all verification related documents, followed by the performance of an onsite inspection to the project site and conduction of interviews with representatives of the project developer Orizon Valorização de Resíduos S.A. in order to review the project implementation and its operation.

For all identified inconsistencies and lack of clarity, related findings (list of outstanding issues) are raised. The next steps are to close out the findings through direct communication with representatives of the project developer and receive, if applicable, updated version of the Monitoring Report ^{/04/} and/or supporting documents and finally prepare the Verification Report. The draft version of the Verification Report undergoes a technical review by Applus+ prior to its submission to GS4GG.

1.4 Verification assessment conclusion

As part of the conducted GS verification assessment, the Applus+ Certification's verification team identified a set of outstanding issues that were appropriately/sufficiently addressed and resolved by the project developer Orizon Valorização de Resíduos S.A. (*inter alia* through revision of the Monitoring Report ^{/04/} and supporting documents) as part of the performed verification assessment.

Also, as an outcome of the performed GS verification assessment, the Applus+ Certification's verification team was able to confirm that GHG emission reductions achieved by the GS project activity during the considered monitoring period are correctly calculated and appropriately reported in the latest version of the Monitoring Report ^{/04/}.

All sections of the Monitoring Report were also confirmed as being appropriately completed. As outlined in such latest version of the Monitoring Report ^{/04/}, reported emission reductions are confirmed as being correctly determined and under conformance with applicable monitoring requirements and GHG calculation approaches as per the registered GS4GG PDD ^{/02/} for the GS project activity and applied CDM baseline and monitoring methodology and methodological tools ^{/12/ /11/ /10/ /14/ /15/ /17/ /47/ /57/ /64/}.

Therefore, Applus+ certifies that emission reductions achieved by the GS project activity during the monitoring period from 29/09/2023 to 31/08/2025 (including both days) are correctly determined and reported as 1,341,274 tCO₂e. Applus+ Certification therefore requests the GS4GG to issue an equivalent amount of Gold Standard VERs (GS VERs) for the GS project activity.

2. Verification team

2.1 Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Lead Auditor / Technical Expert / Country Expert / GS Approved Auditor	EI	Horiuchi	Guilherme	Applus+ Certification	X	X	X	X

EI: External individual

Demonstration of how the appointed verification team meets the competence required for the performance of the verification assessment is included in Appendix 2.

2.2 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/ Technical Expert	EI	Xue	Denny	Applus+ Certification
2.	Approver	IR	Vega Nonalaya	Karen Elizabeth	Applus+ Certification

IR: Internal resource; EI: External individual

Demonstration of how the appointed technical reviewer and approver of the Verification Report meet the competence required for the performance of the verification assessment is included in Appendix 2.

3. Application of materiality

3.1 Consideration of materiality in planning the verification

By acknowledging that, as an outcome of the GS verification assessment, an individual or an aggregate of undetected error(s), omission(s) and misinterpretation(s) could potentially undermine the possibility of achieving a verification opinion under reasonable and fair level assurance; applicable aspects and requirements of the concept of materiality were thus effectively considered in the context of the verification assessment as required/established by both the GS4GG Validation and Verification Standard (version 2.0) ^{/46/} and the CDM Guidance "Guideline - Application of materiality in verification" (version 02.0) ^{/29/}.

In the context of the verification planning, while aiming to minimize the risk of material discrepancies not being detected during the verification assessment (detection risk), the Applus+ Certification's verification team performed an identification and analysis of risks that could potentially lead to quantitative material errors, omissions and misstatements in its verification opinion.

Furthermore, the identification of actions to be performed by the appointed Applus+ Certification's verification team during the verification assessment as related responses/actions to such identified risks were also included/considered in both the verification planning phase and later performed in the subsequent phases of the verification assessments (e.g. document desk review, interviews with representatives of the project developers, identification/addressing of findings and reporting).

In order to ensure a deemed complete, transparent and timely execution of the verification assessment, the appointed Applus+ Certification's verification team (that holds sufficient experience and expertise with performance of verification assessments for project-based initiatives encompassing LFG collection and destruction/utilization of LFG under the CDM and under GS4GG) planned a complete sequence of assessment events that were regarded as required to detect existent major potential material errors, omissions and discrepancies and, upon addressing of such outstanding issues, arrive at a substantiated and reasonable final verification opinion (with the risks that could lead to quantitative material errors, omissions and misstatements in its verification opinion being thus sufficiently identified and addressed).

By taking into account applicable guidance from both the CDM guidance "Guideline - Application of materiality in verification" (version 02.0) ^{/29/}, the CDM validation and verification standard for project activities (CDM-VVS-PA) (version 3.0) ^{/56/} and the GS4GG Validation and Verification Standard (version 2.0) ^{/56/}, the threshold of materiality for the performed verification assessment was evaluated and it was concluded that such threshold applicable to the GS project activity (based on actual emission reductions reported as achieved during the considered monitoring period as per the initial version of the Monitoring Report and the length of the considered monitoring period) is appropriately defined as 5%³.

As part of the verification planning, no sampling approach was considered required for monitoring and cross-checking of data against primary data source (no sampling-based monitoring or no data cross-checking based on sampling⁴). While it was later confirmed that no sampling approach was indeed required in the context of assessment of monitoring data, risks related to sampling for these aspects were thus not identified and, therefore, no design of sampling plan for addressing such aspects was considered in the context of the verification planning.

The project developer and project operator/owner Orizon Valorização de Resíduos S.A. did not apply any sampling plan to determine data and parameters monitored during the considered monitoring period. The Applus+ Certification's verification team has checked all the documents and no sampling plan was required.

The table below summarizes the following elements of the verification planning:

- Identified risks that could lead to material errors, omissions or misstatements (including their assessment details)
- Summary of the responses/actions to such identified risks that were later considered during the performance of the verification assessment.

³ As indicated in the registered GS4GG PDD for the GS project activity, average annual emission reductions to be achieved by the GS project activity within its last GS crediting period are ex-ante estimated as 459,987 tCO₂e/year. A threshold of materiality of 5% is thus selected (resulting from the average annual ex-ante estimation of emission reductions (value less than 500,000 tCO₂e/year)).

⁴ The Applus+ Certification's verification team was also able to confirm that no sampling approach for monitoring and cross-checking of monitoring data against primary data source was applicable/required for the verification assessment covered by this Verification Report since:

- (i) as per the monitoring and GHG calculation approaches applied for the GS project activity (as established in the registered GS4GG PDD and applied CDM baseline and monitoring methodology + applicable methodological tools), no sampling procedure and no sampling-based monitoring are valid/required for the determination of emission reductions achieved by the GS project activity during a given monitoring period.
- (ii) there is a possibility for cross-checking/reproducing all reported LFG and flaring/utilization measurement records valid for the considered monitoring period against the related primary data sources (with all reported related monitoring data being cross-checked/reproduced (instead of having selected samples of data being cross-checked/reproduced)). Further related assessment details valid for the performed verification assessment encompassed by this Verification Report are included in Section 5.6, under *Data authenticity checking*.

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.	Inadequate installation/configuration or malfunction in measuring instruments/equipment (e.g. insufficient accuracy or inappropriateness of installed equipment/instruments)	High	Potential generation of measurement and data errors/inconstancies due to inappropriate installation/configuration or malfunction in related measuring instruments/equipment. This risk might lead to material error in calculation and reporting of achieved emission reductions.	The Applus+ Certification's verification team shall confirm whether modern/state-of-the art and/or best-practice monitoring instruments/equipment are appropriately installed/configured as part of the implementation and operation of the GS project activity. By considering the significant rate of monitoring data being recorded (LFG and flaring/utilization related measurements being recorded/reported with an every-minute frequency), ideally, it is expected that a reliable process control automation is in place for typical GS project activities encompassing LFG collection and destruction/utilization. Moreover, it should be confirmed whether trained personnel staff are in charge of the operation of the project monitoring system and that there are related QA/QC procedures in place.
2.	Inadequate accuracy and lack of correctness of monitoring data and or evaluations supplied by independent 3 rd parties (e.g. measurements of residual outgoing methane in the flares for the determination of project emissions of	High	Potential generation of measurement and data errors/inconsistencies due to inappropriate installation / configuration or malfunction in related measuring instruments and/or inappropriate evaluation procedures being applied by company (ies) in charge of related measurements and	The Applus+ Certification's verification team shall confirm whether all measurements performed by independent 3rd parties are performed by company (ies) with required accreditation. It shall also be confirmed whether modern/state-of-the art and/or best-practice

	methane through the flares)		evaluations to be performed by independent 3 rd party inspection service company(ies). These risks might lead to material errors in calculation/determination and reporting of baseline emissions.	equipment/instruments and/or procedures are appropriately applied for related 3 rd party measurements and/or evaluations. Moreover, it should be confirmed whether there are related QA/QC procedures in place. Finally, it shall also be ensured that, in case of identification of uncertainties related to correctness/reasonability of reported monitoring data for a particular time period (e.g. measurements of residual outgoing methane in the flares for the determination of project emissions of methane through the flares valid for a particular time period); no emission reductions for such particular time period are accounted/claimed under such circumstances (thus minimizing risks of overestimations of claimed GHG emission reductions).
3.	Inadequate installation/configuration or malfunction in installation/configuration of data processing/management equipment such as programmable logic controller unit (PLC unit) and data storage infrastructure (database for monitoring records).	High	Potential recording and reporting of monitoring data with errors and/or inconsistencies due to inappropriate installation/configuration or malfunction in related data management/processing equipment (PLC unit and/or database for monitoring records). This risk might lead to material error in calculation and reporting of achieved emission reductions.	The Applus+ Certification's verification team shall confirm whether modern, state-of-the art and best practice data management/processing infrastructure (PLC unit and database for monitoring records) is appropriately installed/configured as part of the implementation and operation of the GS project activity.
4.	Errors and inconsistencies in the procedure(s) of transferring of monitoring data to monthly and	High	Potential recording and reporting of monitoring data with errors and/or inconsistencies due to	The Applus+ Certification's verification team shall confirm whether appropriate and

	summarized aggregated reporting forms/spreadsheets used for the determination of emission reductions.		occurrence of errors and inconsistencies in the procedure(s) of transferring of monitoring data to monthly and summarized aggregated reporting forms/spreadsheets used for the determination of emission reductions. This risk might lead to material error in calculation and reporting of achieved emission reductions.	reliable procedure(s) of transferring monitoring data to monthly and summarized aggregated reporting forms/spreadsheets are in place.
5.	Errors and/or inconsistencies (e.g. human mistakes) in the procedure(s) for entering the values of ex-ante determined parameters and entering/applying calculation formulas to monthly and summarized aggregated reporting forms/spreadsheets used for the determination of emission reductions + reporting of such information in the Monitoring Report ^{/04/} .	High	Potential reporting of monitoring data and GHG calculations with errors and/or inconsistencies due to occurrence of errors and/or inconsistencies (e.g. human mistakes) in the procedure(s) for entering the values of ex-ante determined parameters and entering/applying calculation formulas to monthly and summarized aggregated reporting forms/spreadsheets used for the determination of emission reductions + reporting of such information in the Monitoring Report ^{/04/} . This risk might lead to material error in calculation and reporting of achieved emission reductions.	The Applus+ Certification's verification team shall confirm whether appropriate and reliable procedure(s) for entering the values of ex-ante determined parameters and entering/applying calculation formulas to monthly and summarized aggregated reporting forms/spreadsheets used for the determination of emission reductions are in place. The Applus+ Certification's verification team shall also confirm whether appropriate and reliable procedure(s) for checking the correctness of such data entries and/or application of calculation formulas are in place. This may be checked through evaluation of the project's related working/operational procedures (incl. QA/QC procedures) and through performance of recalculations and detailed inspection in such forms/spreadsheets by the verification team.

				Moreover, it should be confirmed whether trained personnel staff are in charge of entering the values of ex-ante determined parameters and entering/applying calculation formulas to such monthly and summarized aggregated reporting forms/spreadsheets.
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3.2 Consideration of materiality in conducting the verification

By taking into account applicable guidance from the CDM "Guideline – Application of materiality in verifications" (version 02.0) ^{/29/}, materiality was considered in conducting the verification.

As part of the performance of the verification assessment, the previously elaborated verification plan was applied without being revised for having potentially detected errors, omissions or misstatements being addressed through additional (and not previously planned) audit/verification procedures during the sub-sequential phases of the performance of verification assessment (e.g. document desk review, interviews with representatives of the project developer, identification and resolution of outstanding issues (CARs and CLs), etc.).

As per the monitoring and QA/QC procedures adopted as part of operation of the GS project activity, as confirmed by the Applus+ Certification's verification team, emission reductions are per se accounted only for monitoring data that is deemed correct, authentic and reliable (based proof of measurements performed by calibrated and well-maintained monitoring equipment/instruments, checking of correctness and reasonability in recorded/reported monitoring data (e.g. data values within an acceptable/plausible range)).

In this context it is also crucial to note that, as also confirmed by the Applus+ Certification's verification team, in case of identification of uncertainties related to correctness/reasonability of reported monitoring data for a particular time period (e.g. continuous measurements related monitoring for a particular minute within the considered monitoring period) as part of the monitoring of the GS project activity, the procedure applied by the project developer Orizon Valorização de Resíduos S.A. ensures that no emission reductions for such particular time period are therefore claimed/accounted under such circumstances (thus minimizing risks of overestimations or miscalculations of claimed GHG emission reductions).

Furthermore, it is also crucial to note that as per the monitoring and GHG calculation approaches that are valid for the GS project activity (as established in the registered GS4GG PDD ^{/02/} and applied CDM baseline and monitoring methodology + applicable methodological tools) ^{/12/ /11/ /10/ /14/ /15/ /17/ /47/ /57/ /64/} no sampling procedure and no sampling-based monitoring are valid/required for the determination of achieved emission reductions. Finally, it is also relevant to note that, as a response to risks identified during the planning phase of the verification, for minimizing the risks of having incorrect monitoring data (measurement records) being considered in the context of the calculation and reporting of achieved emission reductions (in a way that calculated emission reductions are overestimated), the verification assessment encompassed the performance of a checking of authenticity of all LFG and LFG flaring/utilization related monitoring data.

Performed data authenticity check:

As part of the performed verification assessment, the Applus+ Certification's verification team was able to realize/confirm that the emission reductions calculation spreadsheets ^{/05/} completed by the project developer Orizon Valorização de Resíduos S.A. are basically MS-Excel spreadsheets that, in theory, could have reported data being easily edited/modified (intentionally or unintentionally). Thus, these spreadsheets, if inappropriately edited, could potentially tamper reported monitoring records, thus resulting in unreal and incorrect calculation and reporting of emission reductions achieved by the GS project activity during the considered monitoring period.

In order to ensure that all emission reductions calculations are entirely and correctly based on authentic, real and not modified monitoring records valid for the considered monitoring period, a data authentic checking was therefore performed as part of the verification assessment. Such checking aimed to ensure that only authentic and unmodified monitoring data records were indeed used by the project developer for performing the emission reductions calculation for the considered monitoring period (thus ensuring that measurement records made available in the MS-Excel format "raw data" input files ^{/41/} and measurement records reported in the emission reduction spreadsheets were not intentionally or unintentionally edited/modified during the generation or handling of these files). Assessment details for the performed data authenticity check are included in Section 5.6, under "*Data authenticity checking*".

4. Means of verification

4.1 Desk/document review

The Applus+ Certification conducted a comprehensive and detailed desk review of all documents initially provided by representatives of the project developer Orizon Valorização de Resíduos S.A. + other publicly available documents that are relevant for the verification assessment. The main assessed documents are listed below:

- Monitoring report from the previously concluded 1st periodic verification under the GS4GG (monitoring period from 01/01/2021 to 28/02/2023) and 2nd periodic verification under the GS4GG (monitoring period from 01/03/2023 to 28/09/2023), including the corresponding Verification Reports ^{/45/}.
- The registered GS4GG PDD (version 7.1) ^{/02/} for the GS project activity, including the corresponding Validation Report.
- The initial version of the Monitoring Report ^{/04/} for the 3rd period verification of the GS project activity (under the GS4GG).
- The applied CDM baseline and monitoring methodology ACM0001 "Flaring or use of landfill gas" (version 19.0) ^{/06/} + the following methodological tools:
 - TOOL02 - "Combined tool to identify the baseline scenario and demonstrate additionality" (version 7.0) ^{/64/}
 - TOOL03 - "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion" (version 03.0) ^{/12/}
 - TOOL04 - "Emissions from solid waste disposal sites" (version 08.1) ^{/17/}

- TOOL05 - "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/11/}
- TOOL06 - "Project emissions from flaring" (version 04.0) ^{/10/}
- TOOL07 - "Tool to calculate the emission factor for an electricity system" (version 07.0) ^{/15/}
- TOOL08 - "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (version 03.0) ^{/14/}
- TOOL09 - "Determining the baseline efficiency of thermal or electric energy generation systems" (version 03.0) ^{/57/}
- TOOL11 - "Assessment of the validity of the original/current baseline and to update the baseline at the renewal of a crediting period" (version 03.0.1) ^{/47/}
- Relevant decisions, clarifications and guidance from the CMP of the Kyoto Protocol and the CDM Executive Board.
- GS4GG Validation and Verification Standard (version 2.0) ^{/46/}.
- Any other information and references relevant to the GS project activity resulting in emission reductions (e.g., IPCC reports, data on electricity generation in the national grid or laboratory analysis and national regulations).
- Certificates of calibration for monitoring instruments utilized during the considered monitoring period.
- Specification sheets for monitoring instruments and main equipment which are part of the GS project activity.
- Monthly spreadsheets containing all LFG and electricity generation related monitoring measurements for the considered monitoring period.
- Registries of relevant operational events which occurred during the considered monitoring period (including temporary interruptions in the operation of the GS project activity)

Besides the above-mentioned documents, the Applus+ Certification's verification team also assessed other additional documents that were required to assess the accuracy of the emission reduction calculations presented in the Monitoring Report ^{/04/}.

A detailed list of all assessed documents is included in Section 10 (REFERENCES) of this Verification Report.

The performed desk review for the initial version of the Monitoring Report included the following assessments:

- a comprehensive review of data and information presented in the Monitoring Report ^{/04/} to verify their overall completeness.
- a comprehensive review of the monitoring plan of the registered GS4GG PDD ^{/02/} and applied CDM baseline and monitoring methodology (ACM0001 (version 19.0) ^{/06/} + applicable methodological tools, paying particular attention to the required frequency for measuring, recording and reporting of related monitoring data. Requirements related to the quality of

- monitoring instruments/equipment (including calibration requirements, and the QA/QC procedures) were also observed.
- an evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of GHG emission reductions.

Through the process of verification, the latest version of the Monitoring Report ^{/04/} + supporting documents were evaluated to confirm the actions taken by the project developer to address eventually raised CARs and CLs. Applus+ Certification also reviewed the latest version of the Monitoring Report ^{/04/} to confirm that all required corrections and reporting improvements were incorporated.

4.2 On-site inspection

Applus+ Certification's verification team has performed an on-site inspection of the GS project activity on 07/11/2025, with the following assessment activities being performed on-site:

Activity performed on site	Site location	Date - team members
Opening meeting for the on-site inspection. During such initial meeting, the Applus+ Certification's verification team was introduced. It was confirmed/outlined the objectives and scope of the on-site inspection and it was confirmed the previously planned agenda for the on-site inspection. The representatives of the project developer Orizon Valorização de Resíduos S.A. also introduced themselves and completed/signed the Applus+ Certification list of participants form for the on-site visit.	Operation control room of the GS project activity	07/11/2025 – Guilherme Horiuchi
Visual inspection of the project's LFG collection system (installed LFG collecting wells and high-density polyethylene pipeline network), and confirmation of correctness of related information included in the Monitoring Report ^{/04/} and registered GS4GG PDD ^{/02/ /02/} regarding the implementation (project design) and operation of the assessed GS project activity.	LFG flaring station	07/11/2025 – Guilherme Horiuchi
Visual inspection of the flaring station (set of equipment comprising high temperature enclosed flare, centrifugal blowers and all LFG / flaring monitoring instruments/equipment) and confirmation of correctness of related information included in the Monitoring Report ^{/04/} and registered GS4GG PDD ^{/02/} regarding the implementation (project design) and operation of the assessed GS project activity.	LFG flaring station / project's data storage and control room	07/11/2025 – Guilherme Horiuchi

Visual inspection of the installed infrastructure promoting electricity generation through utilization of LFG and confirmation of correctness of related information included in the Monitoring Report ^{/04/} and registered GS4GG PDD ^{/02/} regarding its implementation (project design).	Project's electricity generation infrastructure comprising engine-generator set + ancillary equipment and systems.	07/11/2025 – Guilherme Horiuchi
Visual inspection of related monitoring equipment (Programmable Logic Controller unit (PLC unit), data acquisition and storage infrastructure (database) and monitoring instruments); and checking/confirmation of correctness and appropriateness of data processing and data recording by the so far under operation project's monitoring infrastructure as well as correctness of related information included in the Monitoring Report ^{/04/} and registered GS4GG PDD ^{/02/} .	LFG flaring station / project's data storage and control room	07/11/2025 – Guilherme Horiuchi
Visual inspection and checking/confirmation of the correctness and appropriateness of the data acquisition process and procedures (including the process for retrieval of new set of raw data monthly files that are used as input data (raw data) for the calculation of emission reductions) as well as correctness of related information included in the Monitoring Report ^{/04/} and registered GS4GG PDD ^{/02/} . In the context of the performed checking, measurement figures of selected LFG and flaring monitoring parameter as visualized by the Applus+ Certification's verification team in the screen of the project's data supervisory system (in the control room of the GS project activity) were compared with figures displayed in displays existent in selected monitoring equipment/instruments (for the same time instant) at the time of the performance of the on-site inspection. Such data checking/comparison aimed to confirm correct data processing and recording by the project's PLC unit and monitoring equipment respectively (at the time of the performed on-site inspection to the project site).	Conference room at the Ecoparque Candeias landfill	07/11/2025 – Guilherme Horiuchi
Checking of the documented evidence provided by the project owner/operator (original documents that are kept stored in the project site + additional documentation used for cross-checking of calculation and information) and confirmation of correctness of related information presented in the Monitoring Report ^{/04/} . Such checking also	Conference room at the Ecoparque Candeias landfill	07/11/2025 – Guilherme Horiuchi

encompassed assessment related to performance of calibration events in monitoring instruments/equipment and overall QA/QC practices as part of the operation of the GS project activity (incl. assessment of authorities and responsibilities of project management and training related issues).		
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4.3 Interviews

The following subjects were discussed with representatives of the project developer during the performed onsite inspection on 07/11/2025:

Interviewed Personnel	Role - Organization	Subject
Mr. Rodrigo Pedroso	Consultant - Unicarbo Energia e Biogás Ltda.	- General implementation and operational aspects of the GS project activity. - Technical equipment and operational issues for installed equipment. - Specifications and operational details of monitoring and measurement equipment/instruments. - Calibration procedures for installed monitoring instruments/equipment. - Quality management system and related compliance with valid QA/QC procedures. - Involved operational and management personnel and responsibilities. - Training and practice of the operational and management personnel. - Implementation and operation of the project's monitoring plan. - Monitoring data handling and management (incl. data gathering, recording and reporting). - Data uncertainty and residual risks. - Performance of emission reductions calculations. - Procedural aspects of the verification. - Performance of related maintenance and repair events. - Compilation of GS4GG related documentation (incl. the Monitoring Report /04/). - Compliance with relevant Safeguarding Principles. - Monitoring of SDG impacts related to the GS project activity, in accordance with the registered GS4GG PDD /02/ for the GS project activity.
Ms. Clarissa Martins	Carbon projects specialist - Orizon Valorização de Resíduos S.A.	
Mr. João Pedro Soares	Operational Supervisor - Orizon Valorização de Resíduos S.A.	
Mr. Bruno Lozani	Coordinator - Orizon Valorização de Resíduos S.A.	
Mr. Maiques Rodrigues dos Santos	Landfill Manager - Orizon Valorização de Resíduos S.A.	

Moreover, on 07/11/2025, the Applus+ Certification's verification team has performed three additional interviews with the following representatives of local neighborhood by phone call:

- Mrs. Niedja Marques de Santana, teacher at the local public school "Nicia Acahu", located less than 1 km from the Ecoparque Candeias landfill. Mr. Santana emphasized about the importance of the lasting partnership the project developer Orizon Valorização de Resíduos S.A. has with the school, promoting activities for students (e.g. guided visits to the landfill, environmental week with speeches and educational games).
- Mr. Reginaldo Germando da Silva, teacher at the local public school "Nicia Acahu", located less than 1 km from the Ecoparque Candeias landfill. Mr. Silva informed the Applus+ Certification's verification team about his frequent visits to the landfill in order to discuss issues of the local community to which the project Orizon Valorização de Resíduos S.A. might provide some support/assistance. He emphasized about the improvements in the local roads/accesses performed by Orizon Valorização de Resíduos S.A. and about the water cistern provided and frequently refilled by Orizon Valorização de Resíduos S.A., which serves as a backup water source for the local community during periods with lack of water supply to the region.
- Mrs. Renata Dantas do Nascimento, social assistant at CRAS Muribeca, located less than 1 km from the Ecoparque Candeias landfill. Mrs. Dantas informed the Applus+ Certification's verification team about the events held by Orizon Valorização de Resíduos which help to explain and clarify issues regarding the negative opinion of the local population with landfills in general. Moreover, campaigns against femicide were also highlighted by the interviewee.

In summary, the environmental, social and economic benefits of the GS project activity were announced by all the interviewees, with no negative aspects being identified.

Informed Consent Process:

Prior to each interview, the verification team:

- Explained the purpose of the consultation (Gold Standard verification of project benefits)
- Informed participants that responses would be included in the public verification report
- Clarified that participation was voluntary and could be withdrawn at any time
- Obtained verbal consent to proceed with the interview

All interviewees proceeded with the consultation after receiving this information, which the verification team interprets as informed verbal consent. No stakeholders requested anonymization or withdrew their participation during or after the interview process.

4.4 Reporting of findings

As per Applus+ Certification's working procedures applicable for the GS4GG verification assessment, whenever a non-conformance arises or insufficient information is identified in project documentation, the Applus+ Certification's verification team shall raise a Corrective Action Request (CAR) or a Clarification Request (CL), respectively.

A CAR is issued, where:

- Non-compliance with the monitoring plan or methodology is found in monitoring and reporting and has not been sufficiently documented by the project developer, or if the evidence provided to prove conformity is insufficient.
- Modifications to the implementation, operation and monitoring of the GS project activity have not been sufficiently documented by the project developer.
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions.
- Issues identified in a FAR during the validation phase and/or previous verifications to be verified during the verification have not been resolved by the project developer.

The assessment team shall raise a Clarification Request (CL) if project related information is insufficient or not clear enough to determine whether the applicable CDM/GS4GG requirements have been met.

As per applicable working procedures valid for GS4GG validation, all CARs and CLs raised during validation shall be resolved prior to submitting a request for issuance of GS VERs.

Forward Action Requests (FARs) may be raised during verification for actions where the monitoring and/or reporting require attention and/or adjustment for the next verification period.

For the complete list of findings raised during the present verification assessment, please refer to Appendix 1 of this report.

As part of the performed verification assessment, five (5) CARs were raised by the Applus+ Certification's verification Team and one (1) FAR raised during the renewal of crediting period under the GS4GG which is applicable in the context of the current monitoring period. No CLs and no FARs were raised as part of the performed verification assessment. The description of the raised findings, the responses of the project developer and the assessment of such responses by the Applus+ Certification's verification team are presented in Appendix 1.

4.5 Internal Quality Control

As part of Applus+ Certification internal quality control system, after the completion of the assessment by the appointed verification team (including completion of the final draft Verification Report (Draft FVR)), all the relevant documentation is submitted to a qualified independent technical review team.

The technical review team is appointed to review the content of the completed draft version of the Verification Report. The technical review team assesses whether all the reporting requirements have been fulfilled in both the Monitoring Report ^{/04/} and draft version of the Verification Report and whether all outstanding issues raised (CARs CLs and/or FARs) were satisfactorily addressed by the project developer. The technical review team either accepts or rejects elements of the draft version of the Verification Report completed by the appointed

verification team. All comments and notes made by the technical review team are taken into consideration and, if applicable, incorporated in the final version of the Verification Report. The final Verification Report (after resolutions of all findings) is then submitted to the head of operations of Applus+ for final review and approval.

5. VERIFICATION FINDINGS

5.1 Participation under other GHG programs

While the GS project activity was previously registered under the CDM, it has issued CERs under the CDM up to 31/12/2020. Thus, the GS project activity is only eligible to request GS VERs from 01/01/2021 onwards.

Applus+ Certification checked the registry/database for Program of Renewable Energy Certificates (RECs) in Brazil (I-REC Brazil) and confirmed that the GS project activity is not accredited / registered under I-REC Brazil program. The Applus+ Certification's verification team also checked publicly information and registration details valid for the REC/VER registries/programs below and also confirmed that the GS project activity has not previously seek registration in such REC/VER registries/programs (and therefore was not rejected by such REC/VER registries/programs either):

- The Verified Carbon Standard (VCS) (<https://registry.verra.org/app/search/VCS/All%20Projects>)
- The International REC Standard (<https://www.irecstandard.org/>)
- Global Carbon Council (GCC) (<https://www.globalcarboncouncil.com/>)
- CERCARBONO (Certified Carbon Standard) (<https://www.cercarbono.com/>)

Other forms of credit

The Applus+ Certification's verification team was also able to confirm that the GHG emission reductions generated and/or yet to be generated by the GS project activity (including GHG emission reductions generated during the considered monitoring period) will not be used for compliance with any emissions trading program or used to meet binding limits on GHG emissions in any compliance or voluntary GHG emission trading program or other binding limit mechanism. This was also confirmed by the Applus+ Certification's verification team through assessment of a declaration signed by the project developers, which is enclosed with the Monitoring Report ^{/04/}.

Currently there is no compliance or voluntary GHG emission trading program or other binding limit mechanism in the host-country Brazil for which GHG emission reductions promoted by the GS project activity would be eligible under.

Legal contest or disputes

The Applus+ Certification's verification team was able to confirm, through interviews with representatives of the project developer Orizon Valorização de Resíduos S.A. and also through visual checking of the company's interface for checking any ongoing legal disputes (available at the company's legal affairs department), that no legal, regulatory and/or commercial disputes have arisen during the considered monitoring period.

5.2 Compliance of the Monitoring Report with the monitoring report template

The Applus+ Certification's verification team has assessed whether the valid version of the GS4GG Monitoring Report Form/Template (version 1.1) ^{/31/} was applied and correctly completed for the elaboration of the Monitoring Report for the considered monitoring period. The assessment included checking whether the form/template was not changed in its content and formatting.

As a conclusion of its assessment, the Applus+ Certification's verification team confirmed that the Monitoring Report was correctly completed by applying the valid version of the GS4GG Monitoring Report Form/Template ^{/31/} and by also sufficiently taking into consideration all applicable requirements and guidance for its completion, including deemed complete and correct description of the GS project activity and its monitoring aspects.

5.3 FARs from Validation and/or Previous Verification

By assessing the previously issued Validation Report ^{/02/}, Verification Reports for previous monitoring periods under the CDM ^{/65/} and also Verification Reports for previous monitoring periods under the GS4GG ^{/45/}, the Applus+ Certification's verification team confirmed that there is one FAR raised during the renewal of crediting period under the GS4GG to be addressed in the context of the current monitoring period as follows:

"The project developer should include a declaration in the Monitoring Reports submitted to the GS4GG that the project will not issue both CERs/other compliance units under the Paris Agreement and a GSVER for the same vintage. Moreover, the project developer should agree to comply with all future UNFCCC COP/CMP decisions including adjustment of GWP values".

The Applus+ Certification's verification team confirmed that the declaration included in Appendix 1 of the Monitoring Report sufficiently addresses the raised FAR for the considered monitoring period.

Moreover, the Monitoring Report also includes the following FARs from validation and previous monitoring periods which are not applicable in the context of the current monitoring period:

"FAR 02: Projects transitioning to the GS4GG are required to demonstrate Ongoing Financial Need (OFN) as per the relevant GS4GG rules and requirements available at the time of renewal of crediting period. Project developer shall demonstrate OFN during the crediting period renewal submission."

Consideration/addressing of the raised FAR:

This FAR was addressed as part of the renewal of crediting period (design certification renewal) of the GS project activity under GS4GG.

"FAR 03: In-line with "Guidance for Site Visit rule Deviations", following the first site visit within the first two years after the start date of crediting period, verifiers shall conduct a site visit once every three years after that first two-year period. In case of deviation from this requirement, the project developer can only request Issuance for the latest three years prior to verification site visit date for which monitoring data can be verified. The remaining years/months of the crediting period will be foregone without any extension."

Consideration/addressing of the raised FAR:

While a site visit (on-site inspection) was conducted on 16/05/2023 by the VVB in charge of performing the 1st Performance Certification for the GS project activity under the GS4GG, no site visit was required to be performed in the context of the 2nd monitoring period vis-à-vis the required every three-year minimum frequency for conduction of site visits (on-site inspections) by appointed VVBs.

"FAR 04: In-line with GS4GG Principles and Requirements, VVB and PP shall consider the following rules after the Transition is finalized: 5.1.39: Transparent, annual update reports need to be provided for Projects that have achieved the Project Design Certification stage or have successfully transitioned to Gold Standard for the Global Goals. An annual report shall be submitted for each monitoring year by the end of next calendar year for which verification is not completed. If a verification is in progress but not completed, then an Annual Report is still required by the end of calendar year. 5.1.50: Transitioning projects, maintaining their existing crediting cycle shall undergo Performance Certification no later than the first two years after project implementation or design certification, whichever is later, and once every three years after that, unless the Verifier provides a convincing case for less frequent visits as part of the Verification Report."

Consideration/addressing of the raised FAR:

The Annual Reports for the years of 2021, 2022 and 2023 were completed and were previously submitted as part of the performance review for the 1st monitoring period of the project activity under the GS4GG.

As the date of Design Certification for the project activity was defined as 15/10/2023, the deadline related to the Performance Certification of the quoted requirement is 15/10/2025. It is also relevant to note that an initial Performance Certification was already conducted jointly with the transition of the project activity from the CDM to the GS4GG".

5.4 Compliance of the project implementation and operation with the registered GS4GG PDD for the GS project activity

The Applus+ Certification's verification team assessed whether the GS project activity was fully implemented according to the description presented in the registered GS4GG PDD ^{/02/} for the GS project activity by the end of the considered monitoring period.

As a result of performed document desk review and onsite inspection, the verification team was able to confirm that all physical features of the GS project activity (including, technology, project equipment and monitoring & metering equipment) were in place as described in both the registered GS4GG PDD ^{/02/} and the Monitoring Report ^{/04/}.

The Applus+ Certification verification team has confirmed that the project's infrastructure so far encompassed by the GS project activity includes the following currently installed main equipment during the considered monitoring period:

- Active LFG collection system encompassing set of LFG collection wells installed across the landfill site, which are interconnected through a high-density polyethylene (HDPE) LFG collection pipeline network. This pipeline includes condensation pots (where part of the humidity in collected LFG is physically removed/draind through condensation).
- Centrifugal blowers system used to direct collected LFG to the flare and to the engine-generator sets.

- 1 high temperature enclosed flare for which main specifications, as appropriately outlined in Section A.3 of the registered GS4GG PDD ^{/02/}, are summarized as follows:

LFG combustion flaring equipment	Characteristics/specifications ⁵
Flare 1	Manufacturer: Biotechnogás s.r.l. Model: 2500HT Min. LFG flaring capacity (for continuous operation): Flow rate of 500 Nm ³ /h Max. LFG flaring capacity (for continuous operation): Flow rate of 2,500 Nm ³ /h Min. temperature of the exhaust gas to ensure high CH ₄ destruction efficiency: 850 °C Max. temperature of the exhaust gas to ensure high CH ₄ destruction efficiency: 1,200 °C Min. CH ₄ destruction efficiency: 99%

- Set of 20 engine-generator sets manufactured by GE Jenbacher GmbH & Co OHG, model J420, 4 series with about 1.42 MW of nameplate installed capacity (uniquely fueled by LFG) with total combined nameplate installed capacity of 28.52 MW.

Moreover, during the performed interviews, the Applus+ Certification's verification team was informed in further details about the overall operational performance of the GS project activity since its starting of operations (with detailed assessment being performed regarding the GS project activity's operational performance during the considered monitoring period).

As confirmed by the Applus+ Certification's verification team, the GS project activity was temporarily out of operation during different short time periods along the considered monitoring period due to different operational reasons (e.g. scheduled equipment maintenance, performance of calibration events in monitoring instruments/equipment, draining of accumulated condensate in LFG pipeline, etc.). Such temporary interruptions in the operation of the GS project activity were confirmed by the Applus+ Certification's verification team through assessment of service and maintenance logbooks (with historical of service and maintenance interventions in the infrastructure of the GS project activity) ^{/30/}.

As also confirmed by the Applus+ Certification's verification team during the conducted on-site visit to the project site and as appropriately outlined in the Monitoring Report, a new LFG upgrade facility was implemented and started its commissioning phase during the considered monitoring period. However, as argued by representatives of the project developer, such LFG upgrade facility will not be included in the project design (as a Post-Design Certification change) since it will apply completely new technologies and will be separate from the GS project activity. Moreover, the Applus+ Certification's verification team has also confirmed that the pipeline which delivered LFG to the new LFG upgrade facility is completely separate from the pipeline which directs LFG to the project's high temperature enclosed flared and electricity generation infrastructure, thus ensuring that no emission reductions are being claimed for LFG upgraded in the new facility.

⁵ Details for the installed flare were confirmed by the Applus+ Certification's verification team through assessment of specification sheets/declaration from the manufacturer of the flare.

5.5 Post-Design Certification changes

5.5.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline

The Applus+ Certification's verification team has confirmed that, as correctly outlined in Section B.2.1 of the Monitoring Report ^{/04/}, there are no temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline applicable for the GS project activity.

5.5.2. Corrections

The Applus+ Certification's verification team has confirmed that, as correctly outlined in Section B.2.2 of the Monitoring Report ^{/04/}, there are no corrections applicable for the GS project activity.

5.5.3. Changes to start date of crediting period

The Applus+ Certification's verification team has confirmed that, as correctly outlined in Section B.2.3 of the Monitoring Report ^{/04/}, there are no changes to the start date of crediting period applicable for the GS project activity.

As appropriately indicated in Section A.4 of the Monitoring Report, the following crediting periods for the project activity under both the CDM and the GS4GG as follows:

CDM:

1st CP: from 29/09/2011 to 28/09/2018

2nd CP: from 29/09/2018 to 28/09/2025

GS4GG:⁶

2nd CP: from 01/01/2021 to 28/09/2023

3rd CP: from 29/09/2023 to 28/09/2026

5.5.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

The Applus+ Certification's verification team has confirmed that, as correctly outlined in Section B.2.4 of the Monitoring Report ^{/04/}, there are no Permanent changes from the Design Certified

⁶ A detailed explanation for the definition of the crediting periods for the project activity under the GS4GG is provided by the project developer and assessed by Applus+ in response to a comment raised by the SustainCERT under the 2nd round of Design Review for the transition of the project activity from the CDM to the GS4GG (comment 11). As confirmed by the Applus+ Certification's verification team, the following disclaimer is also included in Section A.4 of the Monitoring Report:

"As further detailed in a response to a comment raised by the SustainCERT under the 2nd round of Design Review for the transition of the project activity from the CDM to the GS4GG (comment 11), the crediting periods for the project activity under the GS4GG were defined as the periods above by taking into account that, as per GS4GG rules, the project activity transitioned from the CDM into GS4GG can only issue GS VERs for a maximum period of 15 years, the end date for its last crediting period under GS4GG is therefore defined as 28/09/2026 (thus completing 15 years after the project's start date and the start date of its initial 7-year crediting period under the CDM (29/09/2011)). Moreover, while CDM CERs were previously issued for the project activity up to 31/12/2020, no GS VERs are to be issued for the period prior to 01/01/2021."

monitoring plan, applied methodology or applied standardized baseline applicable to the current monitoring period.

5.5.5. Changes to project design of approved project

The Applus+ Certification's verification team has confirmed that, as correctly outlined in the Monitoring Report ^{/04/}, there are no changes to the project design applicable for the considered monitoring period.

5.6 Compliance of the monitoring plan with applied CDM baseline and monitoring methodology, applied CDM methodological tools and other applied methodological or regulatory requirements

As part of the performed document review and onsite inspection, the Applus+ Certification's verification team has reviewed the application of the implemented monitoring plan along the considered monitoring period vis-à-vis the monitoring requirements of the registered GS4GG PDD ^{/02/} for the GS project activity. The application of the monitoring plan during the considered monitoring period was also verified against all applicable requirements of the CDM monitoring methodology ACM0001 (version 19.0) ^{/06/} and applied CDM methodological ^{/12/ /11/ /10/ /14/ /15/ /17/ /47/ /57/ /64/} in order to confirm its compliance.

Based on the performed document desk review + onsite inspection, the verification team confirmed that the monitoring plan was applied and operationalized during the considered period under full conformance with the provisions of the registered GS4GG PDD for the GS project activity for the project's infrastructure under operation during the considered monitoring period. Moreover, as also confirmed by the Applus+ Certification's verification team, the applied monitoring plan also sufficiently meets all applicable requirements of the CDM baseline and monitoring methodology ACM0001 (version 19.0) and applicable methodological tools.

As confirmed by the Applus+ Certification's verification team and in line with the project design description presented in the registered GS4GG PDD ^{/02/}, so far, there are still no legal restrictions or requirements/obligations for LFG collection and destruction in Brazil. Moreover, there are still no legal restrictions or requirements/obligations for utilizing collected LFG as gaseous fuel for generation of electricity in Brazil either.

5.7 Compliance of monitoring activities with the monitoring plan as per the registered GS4GG PDD for the GS project activity

5.7.1. Data and parameters fixed ex ante

The Applus+ Certification's verification team assessed the Monitoring Report ^{/04/} and emission reduction calculation spreadsheet ^{/05/} in order to confirm whether all ex-ante determined (fixed) parameters (that are applicable for the calculations of achieved emission reductions by the GS project activity) were correctly reported in the latest version of the Monitoring Report ^{/04/} and correctly applied/considered (as per the provisions of the registered GS4GG PDD ^{/02/}) in related emission reduction calculations valid for the considered monitoring period.

The following ex-ante determined parameters were correctly applied/considered in the context of emission reduction calculations for the considered monitoring period:

Ex-ante determined parameter	Applicable SDG	Value	
Fraction of methane that would be oxidized in the top layer of the SWDS in the baseline (OX_{top_layer})	SDG 13	0.1	
Global Warming Potential of CH ₄ (GWP_{CH_4})	SDG 13	28 tCO ₂ /tCH ₄	
Universal ideal gas constant (R_u)	SDG 13	8,314 Pa.m ³ /kmol.K	
Molecular mass of greenhouse gas i (MM_i)	SDG 13	16.04 kg/kmol (for CH ₄)	
Total pressure at normal conditions (P_n)	SDG 13	101,325 Pa	
Temperature at normal conditions (T_n)	SDG 13	273.15 K	
Manufacturer’s flare specifications for temperature, flow rate and maintenance schedule ($SPEC_{flare}$)	SDG 13	Flare model	2500 HT
		Minimum flare temperature	850 °C
		Maximum flare temperature	1,200 °C
		Minimum and maximum inlet flow rate	Minimum flow: 500 Nm ³ /h Maximum flow: 2,500 Nm ³ /h
		Maximum duration in days between maintenance events	365 days
CO ₂ emission factor for electricity generation / grid-sourced electricity in year y ($EF_{EL,grid,y}$)	SDG 13	1.3 (for electricity imported by the project activity through the electricity grid the project activity is connected to ($EF_{EL,grid,import,y}$)) 0.25 (for electricity exported by the project activity through the electricity grid the project activity is connected to ($EF_{EL,grid,export,y}$))	
Weighting of build margin emissions factor (w_{BM})	SDG 13	0.75	
Weighting of operating margin emissions factor (w_{OM})	SDG 13	0.25	

Build margin emission factor of the Brazilian grid ($EF_{grid,BM,y}$) ⁷	SDG 13	0.0270 tCO ₂ /MWh
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Ex-ante determined parameters not used in the context of ex-post calculation of emission reductions achieved by the GS project activity during the considered monitoring period:

The Applus+ Certification's verification team has also confirmed that the following ex-ante determined parameters (which are also included/listed in the registered GS4GG PDD ^{/02/}) were not considered/used for the purpose of ex-post determination of baseline emissions and/or project emissions achieved by the GS project activity during the considered monitoring period:

- Efficiency of the LFG capture system that will be installed in the project activity (η_{PJ})
- Molecular mass of gas k (MM_k)
- Molecular mass of water (MM_{H_2O})
- Model correction factor to account for model uncertainties ($\phi_{default}$)
- Oxidation factor (reflecting the amount of methane from SWDS that is oxidized in the soil or other material covering the waste) (OX)
- Fraction of methane in the SWDS gas (volume fraction) (F)
- Default value for the fraction of degradable organic carbon (DOC) in MSW that decomposes in the SWDS ($DOC_{f,default}$)
- Methane Correction factor ($MCF_{default}$)
- Fraction of degradable organic carbon (by weight) in the waste type j (DOC_j);
- Decay rate for the waste type j (k_j)
- Weight fraction of the waste type j (W_j)

The above-listed parameters are confirmed by the Applus+ Certification's verification team as being only used in the context of ex-ante estimation of emission reductions to be achieved by the GS project activity as reported and further explained in its GS4GG PDD ^{/02/}.

5.7.2. Data and parameters monitored ex-post

The Applus+ Certification's verification team has assessed whether all monitoring parameters of which monitoring ex-post is required as per the monitoring plan of the registered GS4GG PDD ^{/02/} for the GS project activity (and by taking into account the project infrastructure so far implemented and under continuous operation by the end of the considered monitoring period) were correctly monitored during the period.

The following tables include assessment details for parameters monitored ex-post during the monitoring period from 29/09/2023 to 31/08/2025:

⁷ Available online:
<https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/dados-e-ferramentas/fatores-de-emissao>.

SDG 13

Data / Parameter: (as per the monitoring plan of the PDD):	Management of SWDS (Management of SWDS)
Measuring, recording and reporting frequencies:	The ex-post determination of the monitoring parameter "Management of the SWDS" is not based on measurements. As correctly outlined in the Monitoring Report ^{/04/}, management aspects of the Ecoparque Candeias landfill are compared against previously defined landfill management practices (as per the also previously conceived original construction and operational design of this particular landfill). This comparison aims to confirm that management and operation of the Ecoparque Candeias landfill (including relevant aspects related to landfilling practice) were not intentionally modified with the unique aim of increasing generation of methane on site and thus artificially increasing baseline emissions for the project activity. As per the monitoring plan from the registered GS4GG PDD ^{/02/}, monitoring for the parameter "Management of the SWDS" is confirmed as being performed on the basis of a technical evaluation assessment ^{/18/} of the overall management and operation of the Ecoparque Candeias landfill with at least every year frequency. The evaluation assessments performed by the independent 3rd party engineering company "Alta Geotecnia Ambiental Ltda." in 25/05/2023, 01/11/2023, 25/10/2024 and 04/09/2025 as the applicable monitoring procedure for the parameter Management of the SWDS valid for the considered monitoring period are of deemed reasonable and acceptable frequency. That sufficiently confirms that the applied monitoring frequency is in accordance with both the monitoring plan from the registered GS4GG PDD ^{/02/} and ACM0001 (version 19.0) ^{/06/}. While the registered GS4GG PDD ^{/02/} establishes monitoring frequency for the parameter "Management of the SWDS" of every one-year (12 months), evaluation assessments valid for considered monitoring period were performed under a higher frequency. By taking into account the required monitoring frequency as per the monitoring plan from the registered GS4GG PDD ^{/02/}, the performed technical assessments which are referred to in the Monitoring Report ^{/04/} are thus correctly assumed as being valid for the whole considered monitoring period.
Type of monitoring equipment/instrument:	Not applicable
Calibration frequency	Not applicable
How were the values in the Monitoring Report (and/or supporting documents, i.e emission	The Applus+ verification team was able to verify that related information included in the Monitoring Report is fully in accordance with the content of the evaluation/declaration reports issued by Alta Geotecnia Ambiental Ltda. ^{/18/} in 25/05/2023,

reduction calculation spreadsheet) verified and/or compared?	01/11/2023, 25/10/2024 and 04/09/2025. These technical reports were made available and were assessed by the Applus+ verification team.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed at the end of this Section. In the particular case of the monitoring parameter "Management of the SWDS", there are no monitoring records (figures) to be considered/accounted in the context of emission reduction calculations for the considered monitoring period. However, the annual comparison of applied management aspects of the Ecoparque Candeias landfill against the defined landfill management practices as per the previously conceived original construction and operational design of the landfill (in order to confirm that management and operation of the Ecoparque Candeias landfill were not intentionally modified with the unique aim of increasing generation of methane on site) is a monitoring requisite. As required by ACM0001 (version 19.0) ^{/06/}, any change in the management of the landfill after the implementation of the project activity is to be justified by referring to technical or regulatory specifications and related impacts of such eventual changes should be addressed in the determination of baseline emissions. In summary, monitoring information for the parameter "Management of the SWDS" is used for the determination/confirmation of baseline emissions and/or confirmation of the project's implementation as per project design descriptions included in the registered GS4GG PDD ^{/02/} (in terms of operation and management conditions of the landfill from which LFG is combusted).
Data / Parameter: (as per the monitoring plan of the PDD):	Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$)
Measuring, recording and reporting frequencies:	During the considered monitoring period, continuous measurements of the monitoring parameter $V_{t,db,j}$ were recorded and reported with an every minute frequency. As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of $V_{t,db,j}$ are to be continuously performed by the use of appropriate LFG flow meters. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for $V_{t,db,j}$. The applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.
Type of monitoring equipment/instrument:	Continuous measurements of $V_{t,db,j}$ were confirmed as being performed by installed LFG flow meters of which main specifications details are summarized below:

Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025	
Serial number	683688
Accuracy	±2.0%
Model	ST51
Manufacturer	FCI Fluid Components International

Source: ^{/33/}

Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 03/05/2024 to 23/08/2025	
Serial number	683689
Accuracy	±2.0%
Model	ST51
Manufacturer	FCI Fluid Components International

Source: ^{/33/}

Specifications of the flow meter used for measuring flow of LFG sent to the engine-generator sets during the period from 29/09/2023 to 16/11/2023 and from 13/03/2024 to 18/02/2025	
Seral number	2103000243
Accuracy	±1.5%
Model	FT1
Manufacturer	CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICOS LTDA.

Source: ^{/34/}

Specifications of the flow meter used for measuring flow of LFG sent to the engine-generator sets during the period from 16/11/2023 to 13/03/2024	
Seral number	2108000299
Accuracy	±2.0%
Model	ST51
Manufacturer	FCI Fluid Components International

Source: ^{/34/}

Specifications of the flow meter used for measuring flow of LFG sent to the engine-generator sets during the period from 18/02/2025 to 31/08/2025	
Seral number	2103000244
Accuracy	±2.0%
Model	ST51
Manufacturer	FCI Fluid Components International

Source: ^{/34/}

The registered GS4GG PDD Source: ^{/02/} for the GS project activity and ACM0001 (version 19.0) Source: ^{/06/} do not specify any accuracy requirement for the LFG flow meters installed at the project site. Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification verification team that the use of the installed

	instruments represents good practice for monitoring the total amount of LFG captured.												
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment manufacturer, the installed LFG flow meters are to be calibrated every 3 years. As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed alternately used LFG flow meters, the selected calibration frequency is as per the recommendations of the instrument manufacturer.												
	Calibration event valid for the LFG flow meter S/N 683688 in operation from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025:												
	<table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>07/11/2022</td><td>12661/2022</td><td>Hirsa Sistemas de Automação e Controle Ltda.</td><td>06/11/2025</td></tr><tr><td>24/07/2025</td><td>LMH 137/2025</td><td>Hirsa Sistemas de Automação e Controle Ltda.</td><td>23/07/2028</td></tr></table>	Calibration date	Certificate number	Company performing the calibration event	Validity	07/11/2022	12661/2022	Hirsa Sistemas de Automação e Controle Ltda.	06/11/2025	24/07/2025	LMH 137/2025	Hirsa Sistemas de Automação e Controle Ltda.	23/07/2028
	Calibration date	Certificate number	Company performing the calibration event	Validity									
	07/11/2022	12661/2022	Hirsa Sistemas de Automação e Controle Ltda.	06/11/2025									
24/07/2025	LMH 137/2025	Hirsa Sistemas de Automação e Controle Ltda.	23/07/2028										
Source: /19/													
Calibration event valid for the LFG flow meter S/N 683689 in operation from 03/05/2024 to 23/08/2025:													
<table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>26/02/2024</td><td>1779/2024</td><td>Hirsa Sistemas de Automação e Controle Ltda.</td><td>25/02/2027</td></tr></table>	Calibration date	Certificate number	Company performing the calibration event	Validity	26/02/2024	1779/2024	Hirsa Sistemas de Automação e Controle Ltda.	25/02/2027					
Calibration date	Certificate number	Company performing the calibration event	Validity										
26/02/2024	1779/2024	Hirsa Sistemas de Automação e Controle Ltda.	25/02/2027										
Source: /19/													
Calibration event valid for the LFG flow meter S/N 2103000243 in operation from 29/09/2023 to 16/11/2023 and from 13/03/2024 to 18/02/2025:													
<table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>01/11/2022</td><td>2103000243 1122 C7</td><td>CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICO</td><td>31/10/2025</td></tr></table>	Calibration date	Certificate number	Company performing the calibration event	Validity	01/11/2022	2103000243 1122 C7	CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICO	31/10/2025					
Calibration date	Certificate number	Company performing the calibration event	Validity										
01/11/2022	2103000243 1122 C7	CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICO	31/10/2025										

		S LTDA. Indústria e Comércio de Equipamentos Eletrônicos Ltda.	
21/02/2024	2103000243 0224 C7	CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENT OS ELETRONICO S LTDA. Indústria e Comércio de Equipamentos Eletrônicos Ltda.	20/02/2027

Source: /19/

Calibration event valid for the LFG flow meter S/N 2108000299 in operation from 16/11/2023 to 13/03/2024:

Calibration date	Certificate number	Company performing the calibration event	Validity
24/10/2023	2108000299 1023 C7	CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENT OS ELETRONICO S LTDA. Indústria e Comércio de Equipamentos Eletrônicos Ltda.	23/10/2026

Source: /19/

Calibration event valid for the LFG flow meter S/N 2103000244 in operation from 18/02/2025 to 31/08/2025:

Calibration date	Certificate number	Company performing the calibration event	Validity
21/01/2025	2103000244 0125 C7	CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENT OS ELETRONICO S LTDA.	20/01/2028

		Indústria e Comércio de Equipamentos Eletrônicos Ltda.	
	Source: /19/		
	Calibration Certificates for the above-summarized calibration events were made available and assessed by the Applus+ Certification's verification team.		
	As per both the registered GS4GG PDD /02/ for the GS project activity and ACM0001 (version 19.0) /06/, the installed LFG flow meters are to be calibrated in a frequency as per the instrument's specifications and/or instrument manufacturer's recommendations. Thus, the adopted calibration frequency (3 years, as per recommendations from the equipment's manufacturer) is in line with both the monitoring plan of the registered GS4GG PDD /02/ for the GS project activity and ACM0001 (version 19.0) /06/.		
	As also confirmed by Applus+ Certification's verification team the performed calibration events for the LFG flow meters confirmed proper functioning of the measurement instruments.		
	Moreover, as outlined in the Monitoring Report /04/, there are no relative delays in performing the calibration events for the installed LFG flow meters.		
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified, compared and/or cross-checked?	Assessment details about recording of values measured at the project site are included in Section 5.7.3. Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period: - Volumetric flow of LFG stream in time interval t on a dry basis for j(where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$) - Volumetric fraction of CH₄ in the collected LFG in time interval t on a dry basis for j(where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH4,t,db,j}$) - Volumetric fraction of O₂ in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O2,EG,m}$) - Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$)		

	- Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($v_{i,RG,m}$) - Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$) - Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CCH_4,EG,m}$) - Temperature of the LFG stream in time interval t (T_t) - Pressure of the LFG stream in time interval t (P_t) - Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$) - Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$) - Flame detection of flare in the minute m ($Flame_m$) - Operational status of biogas destruction devices (Status of biogas destruction device) The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior to being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

Data / Parameter: (as per the monitoring plan of the PDD):	Volumetric fraction of CH ₄ in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($v_{CH_4,t,db,j}$)																				
Measuring, recording and reporting frequencies:	During the considered monitoring period, continuous measurements of the monitoring parameter $v_{CH_4,t,db,j}$ were recorded and reported with an every minute frequency. As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of $v_{CH_4,t,db,j}$ are to be performed continuously. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for $v_{CH_4,t,db,j}$, the applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.																				
Type of monitoring equipment/instrument:	Continuous measurements of $v_{CH_4,t,db,j}$ were confirmed as being performed by installed continuous CH₄/O₂ fraction gas analyzer units of which main specifications details are summarized below: <table border="1"> <thead> <tr> <th colspan="2">Specifications of the utilized CH₄/O₂ fraction gas analyzer unit from 29/09/2023 to 12/01/2024 and from 26/02/2024 to 31/08/2025</th></tr> </thead> <tbody> <tr> <td>Serial number</td><td>N1W3009</td></tr> <tr> <td>Accuracy</td><td>±2.0%</td></tr> <tr> <td>Model</td><td>Ultramat 23</td></tr> <tr> <td>Manufacturer</td><td>SIEMENS AG</td></tr> </tbody> </table> Source: ^{/35/} <table border="1"> <thead> <tr> <th colspan="2">Specifications of the utilized CH₄/O₂ fraction gas analyzer unit from 12/01/2024 to 26/02/2024</th></tr> </thead> <tbody> <tr> <td>Serial number</td><td>N1RO280</td></tr> <tr> <td>Accuracy</td><td>±2.0%</td></tr> <tr> <td>Model</td><td>Ultramat 23</td></tr> <tr> <td>Manufacturer</td><td>SIEMENS AG</td></tr> </tbody> </table> Source: ^{/35/} The registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/} do not specify any accuracy requirement for the installed continuous CH₄/O₂ fraction gas analyzer units at the project site. The accuracy range for the installed instruments is ±2.0%. Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification's verification team that the use of the Installed instruments represents good practice for monitoring of methane fraction in the LFG.	Specifications of the utilized CH ₄ /O ₂ fraction gas analyzer unit from 29/09/2023 to 12/01/2024 and from 26/02/2024 to 31/08/2025		Serial number	N1W3009	Accuracy	±2.0%	Model	Ultramat 23	Manufacturer	SIEMENS AG	Specifications of the utilized CH ₄ /O ₂ fraction gas analyzer unit from 12/01/2024 to 26/02/2024		Serial number	N1RO280	Accuracy	±2.0%	Model	Ultramat 23	Manufacturer	SIEMENS AG
Specifications of the utilized CH ₄ /O ₂ fraction gas analyzer unit from 29/09/2023 to 12/01/2024 and from 26/02/2024 to 31/08/2025																					
Serial number	N1W3009																				
Accuracy	±2.0%																				
Model	Ultramat 23																				
Manufacturer	SIEMENS AG																				
Specifications of the utilized CH ₄ /O ₂ fraction gas analyzer unit from 12/01/2024 to 26/02/2024																					
Serial number	N1RO280																				
Accuracy	±2.0%																				
Model	Ultramat 23																				
Manufacturer	SIEMENS AG																				
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed continuous CH ₄ /O ₂ fraction gas analyzer unit is to be calibrated every 12 months (1 year). As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed gas																				

analyzer unit, the selected calibration frequency is as per the recommendations of the instrument manufacturer.

Calibration events valid for the installed CH₄/O₂ fraction gas analyzer unit S/N N1W3009 in operation from 29/09/2023 to 12/01/2024 and from 26/02/2024 to 31/08/2025:

Calibration date	Certificate number	Company performing the calibration event	Validity
25/08/2023	2482-1/23	Aselco Indústria Comércio Importação Exportação	24/08/2024
21/08/2024	2619-01/24	Aselco Indústria Comércio Importação Exportação	20/08/2025
18/03/2025	0273/2025	ISOCELL Soluções em Analítica	17/03/2026

Source: /20/

Calibration events valid for the installed CH₄/O₂ fraction gas analyzer unit S/N N1RO280 in operation from 12/01/2024 to 26/02/2024:

Calibration date	Certificate number	Company performing the calibration event	Validity
29/11/2023	ISO11459/2023	ISOCELL Soluções em Analítica	28/11/2024

Source: /20/

Calibration Certificates for the above-summarized calibration events were made available and assessed by the Applus+ Certification's verification team.

As per both the registered GS4GG PDD /02/ for the GS project activity and ACM0001 (version 19.0) /06/, the installed continuous CH₄/O₂ fraction gas analyzer unit is to be calibrated in a frequency as per the instrument's specifications and/or instrument manufacturer's recommendations.

As also confirmed by Applus+ Certification's verification team the performed calibration events for the continuous CH₄/O₂ fraction gas analyzer units confirmed proper functioning of the measurement instruments.

Moreover, as outlined in the Monitoring Report /04/, there are no relative delays in performing the calibration events for the installed continuous CH₄/O₂ fraction gas analyzer units.

How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?

Assessment details about recording of values measured at the project site are included in Section 5.7.3.

Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period:

- Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$)
- Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$)
- Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$)
- Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$)
- Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$)
- Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$)
- Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$)
- Temperature of the LFG stream in time interval t (T_t)
- Pressure of the LFG stream in time interval t (P_t)
- Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$)
- Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$)
- Flame detection of flare in the minute m ($Flame_m$)
- Operational status of biogas destruction devices (Status of biogas destruction device)

The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed

	checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

Data / Parameter: (as per the monitoring plan of the PDD):	Volumetric fraction of O₂ in the exhaust gas on a dry basis at reference conditions in the minute <i>m</i> (v_{O₂,EG,m})										
Measuring, recording and reporting frequencies:	During the considered monitoring period, continuous measurements of the monitoring parameter v_{O₂,EG,m} were recorded and reported with an every minute frequency. As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of v_{O₂,EG,m} are to be performed continuously. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for v_{O₂,EG,m}, the applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.										
Type of monitoring equipment/instrument:	Continuous measurements of v_{O₂,EG,m} were confirmed as being performed by an installed continuous CH₄/O₂ fraction gas analyzer unit of which main specifications details are summarized below: <table border="1"> <tr> <td colspan="2">Specifications of the utilized continuous CH₄/O₂ fraction gas analyzer unit from 29/09/2023 to 21/08/2024 and from 20/08/2025 to 31/08/2025</td></tr> <tr> <td>Serial number</td><td>N1M6685</td></tr> <tr> <td>Accuracy</td><td>±0.2% (for O₂ measurements)</td></tr> <tr> <td>Model</td><td>Ultramat 23</td></tr> <tr> <td>Manufacturer</td><td>SIEMENS AG</td></tr> </table> Source: ^{/35/}	Specifications of the utilized continuous CH ₄ /O ₂ fraction gas analyzer unit from 29/09/2023 to 21/08/2024 and from 20/08/2025 to 31/08/2025		Serial number	N1M6685	Accuracy	±0.2% (for O ₂ measurements)	Model	Ultramat 23	Manufacturer	SIEMENS AG
Specifications of the utilized continuous CH ₄ /O ₂ fraction gas analyzer unit from 29/09/2023 to 21/08/2024 and from 20/08/2025 to 31/08/2025											
Serial number	N1M6685										
Accuracy	±0.2% (for O ₂ measurements)										
Model	Ultramat 23										
Manufacturer	SIEMENS AG										

	Specifications of the utilized continuous CH ₄ /O ₂ fraction gas analyzer unit from 21/08/2024 to 20/08/2025			
	Serial number	N1C7779		
	Accuracy	±0.2% (for O ₂ measurements)		
	Model	Ultramat 23		
	Manufacturer	SIEMENS AG		
	Source: /35/			
	The registered GS4GG PDD /02/ for the GS project activity and ACM0001 (version 19.0) /06/ do not specify any accuracy requirement for the installed continuous CH₄/O₂ fraction gas analyzer units at the project site. The accuracy range for the installed instruments is 0.2%. Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification's verification team that the use of the installed instruments represents good practice for monitoring of O₂ fraction in the LFG.			
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed continuous CH₄/O₂ fraction gas analyzer units are to be calibrated every 12 months (1 year). As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed gas analyzer units, the selected calibration frequency is as per the recommendations of the instrument manufacturer.			
	Calibration events valid for the installed CH₄/O₂ fraction gas analyzer unit S/N N1M6685 in operation from 29/09/2023 to 21/08/2024 and from 20/08/2025 to 31/08/2025:			
	Calibration date	Certificate number	Company performing the calibration event	Validity
	25/08/2023	2482-1/2023	Aselco Indústria Comércio Importação Exportação	24/08/2024
	14/08/2025	ISO07298/2025	ISOCELL Soluções em Analítica	13/08/2026
	Source: /21/			
	Calibration events valid for the installed CH₄/O₂ fraction gas analyzer unit S/N N1C7779 in operation from 21/08/2024 to 20/08/2025:			
	Calibration date	Certificate number	Company performing the calibration event	Validity

	<table><tr><td>21/08/2024</td><td>2619-03/2024</td><td>Aselco Indústria Comércio Importação Exportação</td><td>20/08/2025</td></tr></table>	21/08/2024	2619-03/2024	Aselco Indústria Comércio Importação Exportação	20/08/2025
21/08/2024	2619-03/2024	Aselco Indústria Comércio Importação Exportação	20/08/2025		
	Source: /21/ Calibration Certificates for the above-summarized calibration event were made available and assessed by the Applus+ Certification’s verification team. As per both the registered GS4GG PDD /02/ for the GS project activity and ACM0001 (version 19.0) /06/, the installed continuous CH4/O2 fraction gas analyzer units are to be calibrated in a frequency as per the instrument’s specifications and/or instrument manufacturer’s recommendations. As also confirmed by Applus+ Certification’s verification team the performed calibration events for the continuous CH4/O2 fraction gas analyzer units confirmed proper functioning of the measurement instruments. Moreover, as outlined in the Monitoring Report /04/, there are no relative delays in performing the calibration events for the installed continuous CH4/O2 fraction gas analyzer units.				
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	Assessment details about recording of values measured at the project site are included in Section 5.7.3. Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period: - Volumetric flow of LFG stream in time interval t on a dry basis for j(where jis the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$) - Volumetric fraction of CH4 in the collected LFG in time interval t on a dry basis for j(where jis the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH4,t,db,j}$) - Volumetric fraction of O2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O2,EG,m}$) - Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$) - Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$)				

	- Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$) - Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CCH_4,EG,m}$) - Temperature of the LFG stream in time interval t (T_t) - Pressure of the LFG stream in time interval t (P_t) - Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$) - Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$) - Flame detection of flare in the minute m ($Flame_m$) - Operational status of biogas destruction devices (Status of biogas destruction device) The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

Data / Parameter: (as per the monitoring plan of the PDD):	Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$)																				
Measuring, recording and reporting frequencies:	During the considered monitoring period, continuous measurements of the monitoring parameter $V_{RG,m}$ were recorded and reported with an every minute frequency. As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of $V_{RG,m}$ are to be continuously performed by the use of appropriate LFG flow meters. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for $V_{RG,m}$. The applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.																				
Type of monitoring equipment/instrument:	Continuous measurements of $V_{RG,m}$ were confirmed as being alternately performed by installed LFG flow meters of which main specifications details are summarized below: <table border="1"> <tr> <td colspan="2">Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025</td></tr> <tr> <td>Serial number</td><td>683688</td></tr> <tr> <td>Accuracy</td><td>±2.0%</td></tr> <tr> <td>Model</td><td>ST51</td></tr> <tr> <td>Manufacturer</td><td>FCI Fluid Components International</td></tr> </table> Source: ^{/33/} <table border="1"> <tr> <td colspan="2">Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 03/05/2024 to 23/08/2025</td></tr> <tr> <td>Serial number</td><td>683689</td></tr> <tr> <td>Accuracy</td><td>±2.0%</td></tr> <tr> <td>Model</td><td>ST51</td></tr> <tr> <td>Manufacturer</td><td>FCI Fluid Components International</td></tr> </table> Source: ^{/33/} The registered GS4GG PDD for the GS project activity and ACM0001 (version 19.0) ^{/06/} do not specify any accuracy requirement for the LFG flow meters installed at the project site. Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification verification team that the use of the installed instruments represents good practice for monitoring of total amount of LFG captured.	Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025		Serial number	683688	Accuracy	±2.0%	Model	ST51	Manufacturer	FCI Fluid Components International	Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 03/05/2024 to 23/08/2025		Serial number	683689	Accuracy	±2.0%	Model	ST51	Manufacturer	FCI Fluid Components International
Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025																					
Serial number	683688																				
Accuracy	±2.0%																				
Model	ST51																				
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Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 03/05/2024 to 23/08/2025																					
Serial number	683689																				
Accuracy	±2.0%																				
Model	ST51																				
Manufacturer	FCI Fluid Components International																				
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed LFG flow meters are to be calibrated every 3 years. As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed LFG flow meters, the selected calibration																				

frequency is as per the recommendations of the instrument manufacturer.

Calibration event valid for the LFG flow meter S/N 683688 in operation from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025:

Calibration date	Certificate number	Company performing the calibration event	Validity
07/11/2022	12661/2022	Hirsa Sistemas de Automação e Controle Ltda.	06/11/2025
24/07/2025	LMH 137/2025	Hirsa Sistemas de Automação e Controle Ltda.	23/07/2028

Source: /19/

Calibration event valid for the LFG flow meter S/N 683689 in operation from 03/05/2024 to 23/08/2025:

Calibration date	Certificate number	Company performing the calibration event	Validity
26/02/2024	1779/2024	Hirsa Sistemas de Automação e Controle Ltda.	25/02/2027

Source: /19/

Calibration Certificates for the above-summarized calibration events were made available and assessed by the Applus+ Certification's verification team.

As per both the registered GS4GG PDD for the GS project activity and ACM0001 (version 19.0) /06/, the installed LFG flow meters are to be calibrated in a frequency as per the instrument's specifications and/or instrument manufacturer's recommendations. Thus, the adopted calibration frequency (3 years, as per recommendations from the equipment's manufacturer) is in line with both the monitoring plan of the registered GS4GG PDD /02/ for the GS project activity and ACM0001 (version 19.0) /06/.

As also confirmed by Applus+ Certification's verification team the performed calibration events for the LFG flow meters confirmed proper functioning of the measurement instruments.

Moreover, as outlined in the Monitoring Report /04/, there are no relative delays in performing the calibration events for the installed LFG flow meters.

How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified, compared and/or cross-checked?	Assessment details about recording of values measured at the project site are included in Section 5.7.3. Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period: - Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$) - Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$) - Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$) - Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$) - Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$) - Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$) - Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$) - Temperature of the LFG stream in time interval t (T_t) - Pressure of the LFG stream in time interval t (P_t) - Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$) - Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$) - Flame detection of flare in the minute m ($Flame_m$) - Operational status of biogas destruction devices (Status of biogas destruction device) The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the
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	processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

Data / Parameter: (as per the monitoring plan of the PDD):	Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($v_{i,RG,m}$)										
Measuring, recording and reporting frequencies:	During the considered monitoring period, continuous measurements of the monitoring parameter $v_{i,RG,m}$ were recorded and reported with an every minute frequency. As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of $v_{i,RG,m}$ are to be performed continuously. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for $v_{i,RG,m}$, the applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.										
Type of monitoring equipment/instrument:	Continuous measurements of $v_{i,RG,m}$ were confirmed as being performed by an installed continuous CH₄/O₂ fraction gas analyzer unit of which main specifications details are summarized below: <table border="1"> <tr> <td colspan="2">Specifications of the utilized CH₄/O₂ fraction gas analyzer unit from 29/09/2023 to 12/01/2024 and from 26/02/2024 to 31/08/2025</td></tr> <tr> <td>Serial number</td><td>N1W3009</td></tr> <tr> <td>Accuracy</td><td>±2.0%</td></tr> <tr> <td>Model</td><td>Ultramat 23</td></tr> <tr> <td>Manufacturer</td><td>SIEMENS AG</td></tr> </table> Source: ^{/35/}	Specifications of the utilized CH ₄ /O ₂ fraction gas analyzer unit from 29/09/2023 to 12/01/2024 and from 26/02/2024 to 31/08/2025		Serial number	N1W3009	Accuracy	±2.0%	Model	Ultramat 23	Manufacturer	SIEMENS AG
Specifications of the utilized CH ₄ /O ₂ fraction gas analyzer unit from 29/09/2023 to 12/01/2024 and from 26/02/2024 to 31/08/2025											
Serial number	N1W3009										
Accuracy	±2.0%										
Model	Ultramat 23										
Manufacturer	SIEMENS AG										

	Specifications of the utilized CH ₄ /O ₂ fraction gas analyzer unit from 12/01/2024 to 26/02/2024			
	Serial number		N1RO280	
	Accuracy		±2.0%	
	Model		Ultramat 23	
	Manufacturer		SIEMENS AG	
Source: /35/				
The registered GS4GG PDD /02/ for the GS project activity and ACM0001 (version 19.0) /06/ do not specify any accuracy requirement for the installed continuous CH₄/O₂ fraction gas analyzer unit at the project site. The accuracy range for the installed instrument is ±2.0%. Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification's verification team that the use of the Installed instrument represents good practice for monitoring of methane fraction in the LFG.				
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed continuous CH ₄ /O ₂ fraction gas analyzer unit is to be calibrated every 12 months (1 year). As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed gas analyzer unit, the selected calibration frequency is as per the recommendations of the instrument manufacturer.			
	Calibration events valid for the installed CH ₄ /O ₂ fraction gas analyzer unit S/N N1W3009 in operation from 29/09/2023 to 12/01/2024 and from 26/02/2024 to 31/08/2025:			
	Calibration date	Certificate number	Company performing the calibration event	Validity
	25/08/2023	2482-1/23	Aselco Indústria Comércio Importação Exportação	24/08/2024
	21/08/2024	2619-01/24	Aselco Indústria Comércio Importação Exportação	20/08/2025
18/03/2025	0273/2025	ISOCELL Soluções em Análítica	17/03/2026	
Source: /20/				
Calibration events valid for the installed CH₄/O₂ fraction gas analyzer unit S/N N1RO280 in operation from 12/01/2024 to 26/02/2024:				

	Calibration date	Certificate number	Company performing the calibration event	Validity
	29/11/2023	ISO11459/2023	ISOCELL Soluções em Analítica	28/11/2024
Source: ^{/20/} Calibration Certificate for the above-summarized calibration events were made available and assessed by the Applus+ Certification's verification team. As per both the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/}, the installed continuous CH₄/O₂ fraction gas analyzer unit is to be calibrated in a frequency as per the instrument's specifications and/or instrument manufacturer's recommendations. As also confirmed by Applus+ Certification's verification team the performed calibration events for the continuous CH₄/O₂ fraction gas analyzer units confirmed proper functioning of the measurement instruments. Moreover, as outlined in the Monitoring Report ^{/04/}, there are no relative delays in performing the calibration events for the installed continuous CH₄/O₂ fraction gas analyzer units.				
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	Assessment details about recording of values measured at the project site are included in Section 5.7.3. Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period: - Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$) - Volumetric fraction of CH₄ in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$) - Volumetric fraction of O₂ in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$) - Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$)			

	- Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($v_{i,RG,m}$) - Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$) - Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CCH_4,EG,m}$) - Temperature of the LFG stream in time interval t (T_t) - Pressure of the LFG stream in time interval t (P_t) - Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$) - Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$) - Flame detection of flare in the minute m ($Flame_m$) - Operational status of biogas destruction devices (Status of biogas destruction device) The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

Data / Parameter: (as per the monitoring plan of the PDD):	Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$)																				
Measuring, recording and reporting frequencies:	During the considered monitoring period, continuous measurements of the monitoring parameter $M_{RG,m}$ were recorded and reported with an every minute frequency. As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of $M_{RG,m}$ are to be continuously performed by the use of appropriate LFG flow meters. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for $M_{RG,m}$. The applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.																				
Type of monitoring equipment/instrument:	Continuous measurements of $M_{RG,m}$ were confirmed as being performed by installed and alternately used LFG flow meters of which main specifications details are summarized below: <table border="1"> <tr> <th colspan="2">Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025</th></tr> <tr> <td>Serial number</td><td>683688</td></tr> <tr> <td>Accuracy</td><td>±2.0%</td></tr> <tr> <td>Model</td><td>ST51</td></tr> <tr> <td>Manufacturer</td><td>FCI Fluid Components International</td></tr> </table> Source: ^{/33/} <table border="1"> <tr> <th colspan="2">Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 03/05/2024 to 23/08/2025</th></tr> <tr> <td>Serial number</td><td>683689</td></tr> <tr> <td>Accuracy</td><td>±2.0%</td></tr> <tr> <td>Model</td><td>ST51</td></tr> <tr> <td>Manufacturer</td><td>FCI Fluid Components International</td></tr> </table> Source: ^{/33/} The registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/} do not specify any accuracy requirement for the LFG flow meters installed at the project site. Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification verification team that the use of the installed instruments represents good practice for monitoring of total amount of LFG captured.	Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025		Serial number	683688	Accuracy	±2.0%	Model	ST51	Manufacturer	FCI Fluid Components International	Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 03/05/2024 to 23/08/2025		Serial number	683689	Accuracy	±2.0%	Model	ST51	Manufacturer	FCI Fluid Components International
Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025																					
Serial number	683688																				
Accuracy	±2.0%																				
Model	ST51																				
Manufacturer	FCI Fluid Components International																				
Specifications of the flow meter used for measuring flow of LFG sent to the flare during the period from 03/05/2024 to 23/08/2025																					
Serial number	683689																				
Accuracy	±2.0%																				
Model	ST51																				
Manufacturer	FCI Fluid Components International																				
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed LFG flow meters are to be calibrated every 3 years. As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed LFG flow meters, the selected calibration																				

frequency is as per the recommendations of the instrument manufacturer.

Calibration event valid for the LFG flow meter S/N 683688 in operation from 29/03/2023 to 03/05/2024 and from 23/08/2025 to 31/08/2025:

Calibration date	Certificate number	Company performing the calibration event	Validity
07/11/2022	12661/2022	Hirsa Sistemas de Automação e Controle Ltda.	06/11/2025
24/07/2025	LMH 137/2025	Hirsa Sistemas de Automação e Controle Ltda.	23/07/2028

Source: ^{/19/}

Calibration event valid for the LFG flow meter S/N 683689 in operation from 03/05/2024 to 23/08/2025:

Calibration date	Certificate number	Company performing the calibration event	Validity
26/02/2024	1779/2024	Hirsa Sistemas de Automação e Controle Ltda.	25/02/2027

Source: ^{/19/}

Calibration Certificates for the above-summarized calibration events were made available and assessed by the Applus+ Certification's verification team.

As per both the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/}, the installed LFG flow meters are to be calibrated in frequency as per the instrument's specifications and/or instrument manufacturer's recommendations. Thus, the adopted calibration frequency (3 years, as per recommendations from the equipment's manufacturer) is in line with both the monitoring plan of the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/}.

As also confirmed by Applus+ Certification's verification team the performed calibration events for the LFG flow meters confirmed proper functioning of the measurement instruments.

Moreover, as outlined in the Monitoring Report ^{/04/}, there are no relative delays in performing the calibration events for the installed LFG flow meters.

How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified, compared and/or cross-checked?

Assessment details about recording of values measured at the project site are included in Section 5.7.3.

Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period:

- Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$)
- Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$)
- Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$)
- Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$)
- Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$)
- Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$)
- Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$)
- Temperature of the LFG stream in time interval t (T_t)
- Pressure of the LFG stream in time interval t (P_t)
- Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$)
- Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$)
- Flame detection of flare in the minute m ($Flame_m$)
- Operational status of biogas destruction devices (Status of biogas destruction device)

The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed

	checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

Data / Parameter: (as per the monitoring plan of the PDD):	Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$)										
Measuring, recording and reporting frequencies:	During the considered monitoring period, continuous measurements of the monitoring parameter $f_{CH_4,EG,m}$ were recorded and reported with an every minute frequency. As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of $f_{CH_4,EG,m}$ are to be performed continuously. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for $f_{CH_4,EG,m}$, the applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.										
Type of monitoring equipment/instrument:	Continuous measurements of $f_{CH_4,EG,m}$ were confirmed as being performed by an installed continuous CH₄/O₂ fraction gas analyzer unit of which main specifications details are summarized below: <table border="1"> <tr> <td colspan="2">Specifications of the utilized continuous CH₄/O₂ fraction gas analyzer unit from 29/09/2023 to 21/08/2024 and from 20/08/2025 to 31/08/2025</td></tr> <tr> <td>Serial number</td><td>N1M6685</td></tr> <tr> <td>Accuracy</td><td>±0.2% (for O₂ content)</td></tr> <tr> <td>Model</td><td>Ultramat 23</td></tr> <tr> <td>Manufacturer</td><td>SIEMENS AG</td></tr> </table> Source: ^{/35/}	Specifications of the utilized continuous CH ₄ /O ₂ fraction gas analyzer unit from 29/09/2023 to 21/08/2024 and from 20/08/2025 to 31/08/2025		Serial number	N1M6685	Accuracy	±0.2% (for O ₂ content)	Model	Ultramat 23	Manufacturer	SIEMENS AG
Specifications of the utilized continuous CH ₄ /O ₂ fraction gas analyzer unit from 29/09/2023 to 21/08/2024 and from 20/08/2025 to 31/08/2025											
Serial number	N1M6685										
Accuracy	±0.2% (for O ₂ content)										
Model	Ultramat 23										
Manufacturer	SIEMENS AG										

	Specifications of the utilized continuous CH ₄ /O ₂ fraction gas analyzer unit from 21/08/2024 to 20/08/2025														
	Serial number	N1C7779													
	Accuracy	±0.2% (for O ₂ content)													
	Model	Ultramat 23													
	Manufacturer	SIEMENS AG													
	Source: ^{/35/}														
	The registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/} do not specify any accuracy requirement for the installed continuous CH₄/O₂ fraction gas analyzer unit at the project site. The accuracy range for the installed instrument is ±0.2% (for O₂ content). Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification's verification team that the use of the Installed instrument represents good practice for monitoring of CH₄ fraction in the LFG.														
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed continuous CH₄/O₂ fraction gas analyzer unit is to be calibrated every 12 months (1 year). As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed gas analyzer unit, the selected calibration frequency is as per the recommendations of the instrument manufacturer.														
	Calibration event valid for the CH₄/O₂ fraction gas analyzer unit S/N N1M6685 in operation from 29/09/2023 to 21/08/2024 and from 20/08/2025 to 31/08/2025:														
	<table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>25/08/2023</td><td>2482-1/2023</td><td>Aselco Indústria Comércio Importação Exportação</td><td>24/08/2024</td></tr><tr><td>14/08/2025</td><td>ISO07298/2025</td><td>ISOCELL Soluções em Analítica</td><td>13/08/2026</td></tr></table>			Calibration date	Certificate number	Company performing the calibration event	Validity	25/08/2023	2482-1/2023	Aselco Indústria Comércio Importação Exportação	24/08/2024	14/08/2025	ISO07298/2025	ISOCELL Soluções em Analítica	13/08/2026
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14/08/2025	ISO07298/2025	ISOCELL Soluções em Analítica	13/08/2026												
Source: ^{/21/}															
	Calibration event valid for the CH₄/O₂ fraction gas analyzer unit S/N N1C7779 in operation from 21/08/2024 to 20/08/2025:														

	Calibration date	Certificate number	Company performing the calibration event	Validity
	21/08/2024	2619-03/2024	Aselco Indústria Comércio Importação Exportação	20/08/2025
	Source: /21/ Calibration Certificates for the above-summarized calibration event were made available and assessed by the Applus+ Certification's verification team. As per both the registered GS4GG PDD /02/ for the GS project activity and ACM0001 (version 19.0) /06/, the installed continuous CH₄/O₂ fraction gas analyzer unit is to be calibrated in a frequency as per the instrument's specifications and/or instrument manufacturer's recommendations. As also confirmed by Applus+ Certification's verification team the performed calibration events for the continuous CH₄/O₂ fraction gas analyzer units confirmed proper functioning of the measurement instruments. Moreover, as outlined in the Monitoring Report /04/, there are no relative delays in performing the calibration events for the installed continuous CH₄/O₂ fraction gas analyzer units.			
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	Assessment details about recording of values measured at the project site are included in Section 5.7.3. Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period: - Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$) - Volumetric fraction of CH₄ in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$) - Volumetric fraction of O₂ in the exhaust gas on a dry basis at reference conditions in the minute m ($v_{O_2,EG,m}$)			

	- Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$) - Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$) - Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$) - Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CCH_4,EG,m}$) - Temperature of the LFG stream in time interval t (T_t) - Pressure of the LFG stream in time interval t (P_t) - Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$) - Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$) - Flame detection of flare in the minute m ($Flame_m$) - Operational status of biogas destruction devices (Status of biogas destruction device) The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

QA/QC processes in place?																															
Data / Parameter: (as per the monitoring plan of the PDD):	Temperature of the LFG stream in time interval t (T_t)																														
Measuring, recording and reporting frequencies:	During the considered monitoring period, continuous measurements of the monitoring parameter T_t were recorded and reported with every minute frequency. As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of T_t are to be continuously performed by the use of appropriate temperature sensor. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for T_t. The applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.																														
Type of monitoring equipment/instrument:	Continuous measurements of T_t were confirmed as being performed by installed temperature sensor of which main specifications details are summarized below: <table border="1"> <thead> <tr> <th colspan="2">Specifications of the temperature sensor used for measuring temperature of the LFG from 29/09/2023 to 11/01/2024</th></tr> </thead> <tbody> <tr> <td>Serial number</td><td>N2035.748336</td></tr> <tr> <td>Accuracy</td><td>±0.1%</td></tr> <tr> <td>Model</td><td>PT 100</td></tr> <tr> <td>Manufacturer</td><td>Ecil Produtos e Sistemas de Medição e Controle de Temperatura</td></tr> </tbody> </table> Source: ^{/37/} <table border="1"> <thead> <tr> <th colspan="2">Specifications of the temperature sensor used for measuring temperature of the LFG from 11/01/2024 to 11/12/2024 and from 25/07/2025 to 31/08/2025</th></tr> </thead> <tbody> <tr> <td>Serial number</td><td>N2321.306656</td></tr> <tr> <td>Accuracy</td><td>±0.1%</td></tr> <tr> <td>Model</td><td>PT 100</td></tr> <tr> <td>Manufacturer</td><td>Ecil Produtos e Sistemas de Medição e Controle de Temperatura</td></tr> </tbody> </table> Source: ^{/37/} <table border="1"> <thead> <tr> <th colspan="2">Specifications of the temperature sensor used for measuring temperature of the LFG from 11/12/2024 to 25/07/2025</th></tr> </thead> <tbody> <tr> <td>Serial number</td><td>N2321.306655</td></tr> <tr> <td>Accuracy</td><td>±0.1%</td></tr> <tr> <td>Model</td><td>PT 100</td></tr> <tr> <td>Manufacturer</td><td>Ecil Produtos e Sistemas de Medição e Controle de Temperatura</td></tr> </tbody> </table> Source: ^{/37/} The registered GS4GG PDD for the GS project activity and ACM0001 (version 19.0) do not specify any accuracy requirement	Specifications of the temperature sensor used for measuring temperature of the LFG from 29/09/2023 to 11/01/2024		Serial number	N2035.748336	Accuracy	±0.1%	Model	PT 100	Manufacturer	Ecil Produtos e Sistemas de Medição e Controle de Temperatura	Specifications of the temperature sensor used for measuring temperature of the LFG from 11/01/2024 to 11/12/2024 and from 25/07/2025 to 31/08/2025		Serial number	N2321.306656	Accuracy	±0.1%	Model	PT 100	Manufacturer	Ecil Produtos e Sistemas de Medição e Controle de Temperatura	Specifications of the temperature sensor used for measuring temperature of the LFG from 11/12/2024 to 25/07/2025		Serial number	N2321.306655	Accuracy	±0.1%	Model	PT 100	Manufacturer	Ecil Produtos e Sistemas de Medição e Controle de Temperatura
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	for the temperature sensor installed at the project site. Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification verification team that the use of the installed instrument represents good practice for monitoring of the temperature of the gaseous stream.																				
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed temperature sensor is to be calibrated every year. As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed temperature sensor, the selected calibration frequency is as per the recommendations of the instrument manufacturer. Calibration events valid for temperature sensor S/N N2035.748336 in operation from 29/09/2023 to 11/01/2024: <table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>18/01/2023</td><td>9W3W1923</td><td>Trescal Brasil Teclabor Servicos de Metrologia e Calibracao Ltda.</td><td>17/01/2024</td></tr></table> Source: /19/ Calibration events valid for temperature sensor S/N N2321.306656 in operation from 11/01/2024 to 11/12/2024 and from 25/07/2025 to 31/08/2025: <table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>13/12/2023</td><td>14363/23</td><td>ECIL Laboratório de Metrologia</td><td>12/12/2024</td></tr><tr><td>20/06/2025</td><td>Z08K1025</td><td>Trescal Brasil Teclabor Servicos de Metrologia e Calibracao Ltda.</td><td>19/06/2026</td></tr></table> Source: /19/	Calibration date	Certificate number	Company performing the calibration event	Validity	18/01/2023	9W3W1923	Trescal Brasil Teclabor Servicos de Metrologia e Calibracao Ltda.	17/01/2024	Calibration date	Certificate number	Company performing the calibration event	Validity	13/12/2023	14363/23	ECIL Laboratório de Metrologia	12/12/2024	20/06/2025	Z08K1025	Trescal Brasil Teclabor Servicos de Metrologia e Calibracao Ltda.	19/06/2026
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20/06/2025	Z08K1025	Trescal Brasil Teclabor Servicos de Metrologia e Calibracao Ltda.	19/06/2026																		

	Calibration events valid for temperature sensor S/N N2321.306655 in operation from 11/12/2024 to 25/07/2025:								
	<table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>31/07/2024</td><td>E60QWZ24</td><td>Trescal Brasil Teclabor Servicos de Metrologia e Calibração Ltda.</td><td>30/07/2025</td></tr></table>	Calibration date	Certificate number	Company performing the calibration event	Validity	31/07/2024	E60QWZ24	Trescal Brasil Teclabor Servicos de Metrologia e Calibração Ltda.	30/07/2025
	Calibration date	Certificate number	Company performing the calibration event	Validity					
	31/07/2024	E60QWZ24	Trescal Brasil Teclabor Servicos de Metrologia e Calibração Ltda.	30/07/2025					
	Source: ^{/19/}								
Calibration Certificate for the above-summarized calibration events was made available and assessed by the Applus+ Certification’s verification team.									
As per both the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/}, the installed temperature sensors are to be calibrated in a frequency as per the instrument’s specifications and/or instrument manufacturer’s recommendations. Thus, the adopted calibration frequency (1 year, as per recommendations from the equipment’s manufacturer) is in line with both the monitoring plan of the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/}. As also confirmed by Applus+ Certification’s verification team, the performed calibration event for the temperature sensor confirmed proper functioning of the measurement instrument. Moreover, as outlined in the Monitoring Report ^{/04/}, there are no relative delays in performing the calibration events for the installed temperature sensor.									
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified, compared and/or cross-checked?	Assessment details about recording of values measured at the project site are included in Section 5.7.3. Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period: - Volumetric flow of LFG stream in time interval t on a dry basis for j(where jis the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$) - Volumetric fraction of CH₄ in the collected LFG in time interval t on a dry basis for j(where jis the LFG deliver								

	pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$) - Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$) - Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$) - Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$) - Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$) - Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$) - Temperature of the LFG stream in time interval t (T_t) - Pressure of the LFG stream in time interval t (P_t) - Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$) - Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$) - Flame detection of flare in the minute m ($Flame_m$) - Operational status of biogas destruction devices (Status of biogas destruction device) The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?

Data / Parameter: (as per the monitoring plan of the PDD):

Pressure of the LFG stream in time interval t (P_t)

Measuring, recording and reporting frequencies:

During the considered monitoring period, continuous measurements of the monitoring parameter P_t were recorded and reported with every minute frequency.

As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of P_t are to be continuously performed by the use of appropriate pressure sensors. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for P_t . The applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.

Type of monitoring equipment/instrument:

Continuous measurements of P_t were confirmed as being performed by installed pressure sensors of which main specifications details are summarized below:

Specifications of the utilized pressure sensor from 29/09/2023 to 10/10/2023 and from 04/10/2024 to 14/08/2025

Serial number	U658008
Accuracy	±0.1%
Model	LD301
Manufacturer	SMAR Technology Company

Source: ^{/38/}

Specifications of the utilized pressure sensor from 10/10/2023 to 04/10/2024 and from 14/08/2025 to 31/08/2025

Serial number	U635935
Accuracy	±0.1%
Model	LD301
Manufacturer	SMAR Technology Company

Source: ^{/38/}

The registered GS4GG PDD for the GS project activity and ACM0001 (version 19.0) ^{/06/} do not specify any accuracy requirement for the pressure sensors installed at the project site. Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification verification team that the use of the installed

	instruments represents good practice for monitoring of the pressure of the gaseous stream.																								
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed pressure sensor is to be calibrated every 2 years. As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed pressure sensor, the selected calibration frequency is as per the recommendations of the instrument manufacturer. Calibration events valid for pressure sensor S/N U658008 in operation from 29/09/2023 to 10/10/2023 and from 04/10/2024 to 14/08/2025: <table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>07/10/2022</td><td>2022/04691</td><td>SMAR Technology Company</td><td>06/10/2024</td></tr><tr><td>15/08/2024</td><td>P-8807/24</td><td>CTJ Tecnologia e Confiabilidade</td><td>14/08/2026</td></tr></table> Source: ^{/23/} Calibration events valid for pressure sensor S/N U635935 in operation from 10/10/2023 to 04/10/2024 and from 14/08/2025 to 31/08/2025: <table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>10/10/2023</td><td>P-9998/23</td><td>SMAR Technology Company</td><td>09/10/2025</td></tr><tr><td>13/06/2025</td><td>P-7530/25</td><td>CTJ Tecnologia e Confiabilidade</td><td>12/06/2026</td></tr></table> Source: ^{/23/} Calibration Certificate for the above-summarized calibration event was made available and assessed by the Applus+ Certification's verification team. As per both the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/}, the installed pressure sensors are to be calibrated in a frequency as per the instrument's specifications and/or instrument manufacturer's recommendations. Thus, the adopted calibration frequency (2 years, as per recommendations from the equipment's manufacturer) is in line with both the monitoring plan of the	Calibration date	Certificate number	Company performing the calibration event	Validity	07/10/2022	2022/04691	SMAR Technology Company	06/10/2024	15/08/2024	P-8807/24	CTJ Tecnologia e Confiabilidade	14/08/2026	Calibration date	Certificate number	Company performing the calibration event	Validity	10/10/2023	P-9998/23	SMAR Technology Company	09/10/2025	13/06/2025	P-7530/25	CTJ Tecnologia e Confiabilidade	12/06/2026
Calibration date	Certificate number	Company performing the calibration event	Validity																						
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15/08/2024	P-8807/24	CTJ Tecnologia e Confiabilidade	14/08/2026																						
Calibration date	Certificate number	Company performing the calibration event	Validity																						
10/10/2023	P-9998/23	SMAR Technology Company	09/10/2025																						
13/06/2025	P-7530/25	CTJ Tecnologia e Confiabilidade	12/06/2026																						

	registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/}. As also confirmed by Applus+ Certification's verification team the performed calibration event for the pressure sensor confirmed proper functioning of the measurement instruments. Moreover, as outlined in the Monitoring Report ^{/04/}, there are no relative delays in performing the calibration events for the installed pressure sensors.
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	Assessment details about recording of values measured at the project site are included in Section 5.7.3. Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period: - Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$) - Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$) - Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$) - Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$) - Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$) - Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$) - Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$) - Temperature of the LFG stream in time interval t (T_t) - Pressure of the LFG stream in time interval t (P_t) - Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$)

	- Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$) - Flame detection of flare in the minute m ($Flame_m$) - Operational status of biogas destruction devices (Status of biogas destruction device) The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

Data / Parameter: (as per the monitoring plan of the PDD):	Quantity of electricity consumed from the grid by the project activity during the year y, ($EC_{PJ,grid,y}$)
Measuring, recording and reporting frequencies:	During the considered monitoring period, accumulated values of continuous measurements of $EC_{PJ,grid,y}$ were aggregated and recorded/reported monthly by the monitoring staff of the GS project activity. As per the as per the registered GS4GG PDD ^{/02/} for the GS project activity, the parameter $EC_{PJ,grid,y}$ is to be monitored continuously. ACM0001 (version 19.0) ^{/06/} and the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/11/} do not clearly indicate recording and reporting frequencies for continuous measurements for the parameter $EC_{PJ,grid,y}$. Thus, the adopted measuring, recording and reporting frequency for $EC_{PJ,grid,y}$ is assumed as in accordance with the

	monitoring plan of the registered GS4GG PDD ^{/02/} for the GS project activity, the Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion and ACM0001 (version 19.0) ^{/06/} .												
Type of monitoring equipment/instrument:	During the considered monitoring period, measurements of EC_{PJ,grid,y} were confirmed as being performed by an electricity meter of which main technical specifications are presented below: <table><tr><th colspan="2">Specifications of the utilized electricity meter installed within the considered monitoring period:</th></tr><tr><td>Manufacturer</td><td>Schneider Electric</td></tr><tr><td>Model</td><td>ION 8650</td></tr><tr><td>Serial Number (S/N)</td><td>1807A325-02</td></tr><tr><td>Accuracy</td><td>±0.1%</td></tr></table> Source: ^{/39/} The registered GS4GG PDD ^{/02/} and/or ACM0001 (version 19.0) ^{/06/} do not specify any accuracy requirement for the electricity meter. The accuracy range for the installed measuring instrument is ±0.1%. Based on its expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is Applus+ Certification opinion that the use of the installed instrument represents good practice for monitoring of consumption of grid-sourced electricity.	Specifications of the utilized electricity meter installed within the considered monitoring period:		Manufacturer	Schneider Electric	Model	ION 8650	Serial Number (S/N)	1807A325-02	Accuracy	±0.1%		
Specifications of the utilized electricity meter installed within the considered monitoring period:													
Manufacturer	Schneider Electric												
Model	ION 8650												
Serial Number (S/N)	1807A325-02												
Accuracy	±0.1%												
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed electricity meter is to be calibrated every 5 years. As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed electricity meter, the selected calibration frequency is as per the recommendations of the instrument manufacturer. <table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>13/11/2018</td><td>CAL 005/2018</td><td>3C Services S.A.</td><td>12/11/2023</td></tr><tr><td>06/03/2023</td><td>CC-0046-24</td><td>Metrum Equipamentos de Medição e Testes</td><td>05/03/2028</td></tr></table> Source: ^{/24/} Calibration Certificates for the above-summarized calibration events were made available and assessed by the Applus+ Certification's verification team. As per both the registered GS4GG PDD for the GS project activity and ACM0001 (version 19.0) ^{/06/}, the installed electricity meter is	Calibration date	Certificate number	Company performing the calibration event	Validity	13/11/2018	CAL 005/2018	3C Services S.A.	12/11/2023	06/03/2023	CC-0046-24	Metrum Equipamentos de Medição e Testes	05/03/2028
Calibration date	Certificate number	Company performing the calibration event	Validity										
13/11/2018	CAL 005/2018	3C Services S.A.	12/11/2023										
06/03/2023	CC-0046-24	Metrum Equipamentos de Medição e Testes	05/03/2028										

	to be calibrated in a frequency as per the instrument's specifications and/or instrument manufacturer's recommendations. Thus, the adopted calibration frequency (5 years, as per recommendations from the equipment's manufacturer) is in line with both the monitoring plan of the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/}. As also confirmed by Applus+ Certification's verification team the performed calibration events for the electricity meter confirmed proper functioning of the measurement instrument. Moreover, as outlined in the Monitoring Report ^{/04/}, there are no relative delays in performing the calibration events for the installed electricity meter.
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	Records of grid-sourced electricity consumed during the considered monitoring period, as reported in the emission reduction calculation spreadsheet ^{/05/} and Monitoring Report ^{/04/} were cross-checked with monthly invoices of grid-sourced electricity purchase issued by Neoenergia Pernambuco (the local power distribution company) ^{/16/} which were made available and assessed by the Applus+ Certification's verification team. Such cross-checking confirmed correctness of reported data for $EC_{PJ,grid,y}$ during the considered monitoring period.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

Data / Parameter: (as per the monitoring plan of the PDD):	Operation margin CO₂ emission factor in year y = Dispatch data analysis operating margin CO₂ emission factor in year y. ($EF_{grid,OM,y} = EF_{grid,OM-DD,y}$)
Measuring, recording and reporting frequencies:	While the monitoring parameter $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ is required to be monitored yearly, for the considered monitoring period within years 2023, 2024 and 2025, the applicable values for this monitoring period are selected. As per the registered GS4GG PDD ^{/02/} for the GS project activity, monitoring of $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ is to be performed yearly.

	Moreover, the “Tool to calculate the emission factor for an electricity system” (version 07.0) ^{/15/} specifies the monitoring frequency for $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ as yearly. Thus, the applied monitoring frequency is thus in accordance with both “Tool to calculate the emission factor for an electricity system” (version 07.0) ^{/15/} and the registered GS4GG PDD ^{/02/} for the GS project activity. For the considered monitoring period, $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ is correctly selected as follows: - 0.3786 tCO₂/MWh (calculated value applicable for year 2023 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil). - 0.4473 tCO₂/MWh (calculated value applicable for year 2024 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil). - 0.0237 tCO₂/MWh (calculated value applicable for January/2025 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil). - 0.0248 tCO₂/MWh (calculated value applicable for February/2025 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil). - 0.0215 tCO₂/MWh (calculated value applicable for March/2025 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil). - 0.0289 tCO₂/MWh (calculated value applicable for April/2025 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil). - 0.0309 tCO₂/MWh (calculated value applicable for May/2025 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil). - 0.0455 tCO₂/MWh (calculated value applicable for June/2025 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil). - 0.5290 tCO₂/MWh (calculated value applicable for July/2025 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil). - 0.5530 tCO₂/MWh (calculated value applicable for August/2025 as published by the CDM’s Designated National Authority (CDM DNA) for Brazil).
Type of monitoring equipment/instrument:	Not applicable
Calibration frequency	Not applicable
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	As confirmed by the Applus+ Certification verification team, the CDM DNA of Brazil has regularly calculated values of $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ for the National Electricity Grid of Brazil by applying classified information and data on dispatch of electricity by grid-connected power plants within the National Electricity Grid of Brazil and by following the applicable guidance of the methodological tool “Tool to calculate the emission factor for an

	electricity system" (version 07.0) ^{/15/}. Related clarifications and details for the determination of $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ by the CDM DNA of Brazil are made available at a specific section of the website of the CDM DNA of Brazil ^{/26/}. Information made available on the website of the CDM DNA of Brazil confirms the correctness of the selected value for $EF_{grid,OM,y}$. The Applus+ Certification verification team also confirmed as part of its performed assessment that <i>ex-post</i> determined values for both $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ and Build margin CO₂ emission factor ($EF_{grid,BM,y}$) on the basis of information published by the CDM DNA of Brazil have been selected and applied for the determination of both baseline and project emissions related to electricity generation and consumption respectively in projects hosted in Brazil with full acceptance from the DOEs involved in the assessments and from the GS4GG. The selected value for the monitoring parameter $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ valid for years 2023, 2024 and 2025 were confirmed by the Applus+ Certification verification to correctly represent the official values as published by the CDM DNA of Brazil (available online: https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/dados-e-ferramentas/fatores-de-emissao). In summary, it is Applus+ Certification opinion that the selection and reporting of the monitoring parameter $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ is deemed correct and acceptable.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	As confirmed by the Applus+ Certification verification team, the CDM DNA of Brazil has regularly calculated values of $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ and $EF_{grid,BM,y}$ for the National Electricity Grid of Brazil by applying classified information and data on dispatch of electricity by grid-connected power plants within the National Electricity Grid of Brazil. The Applus+ Certification verification team also confirmed as part of its performed assessment that, for applicable cases, <i>ex-post</i> monitored values for $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ and the <i>ex-ante</i> determined value for $EF_{grid,BM,y}$ based on information published by the CDM DNA of Brazil ^{/26/} have been systematically selected and applied for the determination of both baseline and project emissions related to electricity generation and consumption respectively in CDM projects hosted in Brazil with full acceptance both from the DOEs involved in the assessments and from the CDM-EB. The selected value for the monitoring parameter $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ and the selected 2022 vintage value for the <i>ex-ante</i> determined parameter $EF_{grid,BM,y}$ were confirmed by the Applus+

	Certification verification team to correctly represent the official values as published by the CDM DNA of Brazil ^{/26/}. In summary, it is Applus+ Certification's opinion that the selection and reporting of the monitoring parameter $EF_{grid,OM,y} = EF_{grid,OM-DD,y}$ is deemed correct and acceptable.
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Data / Parameter: (as per the monitoring plan of the PDD):	Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$)
Measuring, recording and reporting frequencies:	During the considered monitoring period, the operational status of each one of the 20 internal combustion gas engines combusting LFG were recorded and reported every-minute on the basis of continuous measurements of the operational status of each gas engine (on the basis of the 20 sub parameters $O_{engine-1,h}$, $O_{engine-2,h}$, (...), $O_{engine-20,h}$. As confirmed by the Applus+ verification team through assessment of the monthly emission reduction calculation spreadsheets valid for the considered monitoring period, for every minute m that a particular gas engine was operational, the operational status for this particular minute is set as 1 (1 = "on") for the gas engine in question, otherwise the operational status is set to 0 (0 = "off"). As per both the registered GS4GG PDD ^{/02/} and ACM0001 (version 19.0) ^{/06/}, the operational status of each internal combustion gas engine shall be recorded once per minute. Thus, the applied measuring, recording and reporting frequencies for $O_{pj,h}$ are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/}.
Type of monitoring equipment/instrument:	Not applicable. The operational status of the 20 internal combustion gas engines, as automatically detected by the electronic control system for each gas engine based on functional parameters, is sent to the project's control system infrastructure and recorded as monitoring data.
Calibration frequency	Not applicable
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	Assessment details about recording of values measured at the project site are included in Section 5.7.3. Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period:

	- Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$) - Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$) - Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$) - Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$) - Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$) - Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$) - Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$) - Temperature of the LFG stream in time interval t (T_t) - Pressure of the LFG stream in time interval t (P_t) - Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$) - Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$) - Flame detection of flare in the minute m ($Flame_m$) - Operational status of biogas destruction devices (Status of biogas destruction device) The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data	Not applicable

management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	
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Data / Parameter: (as per the monitoring plan of the PDD):	Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$)																				
Measuring, recording and reporting frequencies:	During the considered monitoring period, continuous measurements of the monitoring parameter $T_{EG,m}$ were recorded and reported with an every minute frequency. As per the registered GS4GG PDD ^{/02/} for the GS project activity, measurements of $T_{EG,m}$ are to be performed continuously. Moreover, ACM0001 (version 19.0) ^{/06/} does not specify any monitoring frequency for $T_{EG,m}$ the applied measuring, recording and reporting frequencies are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.																				
Type of monitoring equipment/instrument:	Continuous measurements of $T_{EG,m}$ were confirmed as being performed by two installed and alternately used thermocouples of which main specifications details are summarized below: <table border="1"> <tr> <th colspan="2">Specifications of the thermocouple used for measuring temperature in the exhaust gas during the period from 29/09/2023 to 03/05/2024</th></tr> <tr> <td>Serial number</td><td>2010.963440</td></tr> <tr> <td>Accuracy</td><td>$\pm 0.25\%$</td></tr> <tr> <td>Model</td><td>Type S</td></tr> <tr> <td>Manufacturer</td><td>ECIL Produtos e Sistemas de Medição e Controle Ltda.</td></tr> </table> Source: ^{/40/} <table border="1"> <tr> <th colspan="2">Specifications of the thermocouple used for measuring temperature in the exhaust gas during the period from 03/05/2024 to 08/10/2024</th></tr> <tr> <td>Serial number</td><td>N2220.014163</td></tr> <tr> <td>Accuracy</td><td>$\pm 0.25\%$</td></tr> <tr> <td>Model</td><td>Type S</td></tr> <tr> <td>Manufacturer</td><td>ECIL Produtos e Sistemas de Medição e Controle Ltda.</td></tr> </table> Source: ^{/40/}	Specifications of the thermocouple used for measuring temperature in the exhaust gas during the period from 29/09/2023 to 03/05/2024		Serial number	2010.963440	Accuracy	$\pm 0.25\%$	Model	Type S	Manufacturer	ECIL Produtos e Sistemas de Medição e Controle Ltda.	Specifications of the thermocouple used for measuring temperature in the exhaust gas during the period from 03/05/2024 to 08/10/2024		Serial number	N2220.014163	Accuracy	$\pm 0.25\%$	Model	Type S	Manufacturer	ECIL Produtos e Sistemas de Medição e Controle Ltda.
Specifications of the thermocouple used for measuring temperature in the exhaust gas during the period from 29/09/2023 to 03/05/2024																					
Serial number	2010.963440																				
Accuracy	$\pm 0.25\%$																				
Model	Type S																				
Manufacturer	ECIL Produtos e Sistemas de Medição e Controle Ltda.																				
Specifications of the thermocouple used for measuring temperature in the exhaust gas during the period from 03/05/2024 to 08/10/2024																					
Serial number	N2220.014163																				
Accuracy	$\pm 0.25\%$																				
Model	Type S																				
Manufacturer	ECIL Produtos e Sistemas de Medição e Controle Ltda.																				

	Specifications of the thermocouple used for measuring temperature in the exhaust gas during the period from 08/10/2024 to 31/08/2025											
	Serial number		N2418.336632									
	Accuracy		±0.25%									
	Model		Type S									
	Manufacturer		ECIL Produtos e Sistemas de Medição e Controle Ltda.									
	Source: /40/											
	The registered GS4GG PDD /02/ for the GS project activity and ACM0001 (version 19.0) /06/ do not specify any accuracy requirement for the thermocouples installed at the project site. Based on its sectoral expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is the opinion of the Applus+ Certification's verification team that the use of the installed instruments represents good practice for monitoring of temperature in the exhaust gas of the enclosed flare.											
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed thermocouples are to be calibrated every 1 year. As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed thermocouples, the selected calibration frequency is as per the recommendations of the instrument manufacturer.											
	Calibration event valid for thermocouple S/N 2010.963440 in operation from 29/09/2023 to 03/05/2024:											
	<table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>09/05/2023</td><td>T-3051/23</td><td>CTJ Tecnologia e Contabilidade</td><td>08/05/2024</td></tr></table>				Calibration date	Certificate number	Company performing the calibration event	Validity	09/05/2023	T-3051/23	CTJ Tecnologia e Contabilidade	08/05/2024
	Calibration date	Certificate number	Company performing the calibration event	Validity								
09/05/2023	T-3051/23	CTJ Tecnologia e Contabilidade	08/05/2024									
Source: /25/												
	Calibration event valid for the thermocouple with S/N N2220.014163 in operation from 03/05/2024 to 08/10/2024:											
	<table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>11/10/2023</td><td>T-7325/23</td><td>CTJ Tecnologia e Contabilidade</td><td>10/10/2024</td></tr></table>				Calibration date	Certificate number	Company performing the calibration event	Validity	11/10/2023	T-7325/23	CTJ Tecnologia e Contabilidade	10/10/2024
	Calibration date	Certificate number	Company performing the calibration event	Validity								
	11/10/2023	T-7325/23	CTJ Tecnologia e Contabilidade	10/10/2024								
Source: /25/												
Calibration event valid for the thermocouple with S/N N2418.336632 in operation from 08/10/2024 to 31/08/2025:												

Calibration date	Certificate number	Company performing the calibration event	Validity
28/08/2024	9127/24	ECIL Laboratório de Metrologia	27/08/2025

Source: /25/

The above-summarized calibration certificates were made available and assessed by the Applus+ Certification's verification team.

As per the registered PDD /02/ and ACM0001 (version 19.0) /06/, the installed thermocouple is to be calibrated in a frequency as per the instrument's specifications and/or instrument manufacturer's recommendations.

As outlined in the Monitoring Report /04/, a relative delay was identified while performing the calibration events for the installed thermocouple with Serial Number N2418.336632 as follows:

Calibration date	Validity	End of the considered monitoring period	Identified relative delay
28/08/2024	27/08/2025	31/08/2025	From 27/08/2025 to 31/08/2025 (5 days)

Source: /25/

Thus, a conservative correction factor was systematically applied in all related measurement records for the monitoring sub-parameter $T_{EG,m}$ as follows:

Parameter	Correction factor applied	Period when the correction factor is applied
$T_{EG,m}$	-0.25%	From 27/08/2025 to 31/08/2025 (5 days)

$\pm 0.25\%$ represents the assumed maximum permissible error of the measurement instrument, thus representing a conservative approach.

How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?

Assessment details about recording of values measured at the project site are included in Section 5.7.3.

Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was

used as input data for the emission reduction calculations for the considered monitoring period:

- Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$)
- Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$)
- Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$)
- Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$)
- Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$)
- Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$)
- Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$)
- Temperature of the LFG stream in time interval t (T_t)
- Pressure of the LFG stream in time interval t (P_t)
- Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$)
- Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$)
- Flame detection of flare in the minute m ($Flame_m$)
- Operational status of biogas destruction devices (Status of biogas destruction device)

The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records.

Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.

Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.
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Data / Parameter: (as per the monitoring plan of the PDD):	Flame detection of flare in the minute m (Flame _m)
Measuring, recording and reporting frequencies:	During the considered monitoring period, the operational status of the flares was recorded and reported every minute on the basis of continuous measurements of the status of flame in the flares. As correctly outlined in the latest version of the Monitoring Report ^{/04/}, while measurements for Flame_m are performed by the installed UV flame detector. This is deemed correct, acceptable and in conformance with requirements of ACM0001 (version 19.0) ^{/06/} and applicable methodological tools. As confirmed by the Applus+ verification team through assessment of the monthly emission reduction calculation spreadsheets ^{/05/}, for every minute m during which flame was detected in the flare, the flame status of the measured flare for each minute is set as "ON" (Flame "on"), otherwise the flame status of this flare for the given minute is set to "OFF" (Flame "off"). As per both the registered GS4GG PDD ^{/02/} for the GS project activity and the methodological tool "Project emissions from flaring" (version 04.0) ^{/10/}, (which is applied in accordance with ACM0001 (version 19.0) ^{/06/}), the operational status of the flare shall be recorded once per minute. Thus, the applied measuring, recording and reporting frequencies for Flame_m are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/} for the GS project activity.
Type of monitoring equipment/instrument:	Monitoring of the operational status of the flare is confirmed as being performed by installed UV flame detector as follows:

	Specifications of the UV Flame detector
	Manufacturer Honeywell Analytics Ltd.
	Model C7061A Dynamic Self-Check Ultraviolet flame detector
	Serial Number 10371
	Source: /58/
Calibration frequency	Not applicable. As confirmed by the Applus+ verification team through assessment of the specification sheets /58/ for the UV Flame detector installed at the project site, the installed UV Flame detector has a self-checking function and thus does not require any calibration.
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	Assessment details about recording of values measured at the project site are included in Section 5.7.3. Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period: - Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$) - Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$) - Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$) - Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$) - Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$) - Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$) - Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CCH_4,EG,m}$) - Temperature of the LFG stream in time interval t (T_t) - Pressure of the LFG stream in time interval t (P_t)

	- Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$) - Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$) - Flame detection of flare in the minute m ($Flame_m$) - Operational status of biogas destruction devices (Status of biogas destruction device) The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

Data / Parameter: (as per the monitoring plan of the PDD):	Maintenance events completed in year y (Maintenance _{y})
Measuring, recording and reporting frequencies:	As per the implemented monitoring procedure adopted at Orion Valorização de Resíduos S.A., all the maintenance events performed at the project site are by the staff of the project developer and project operator Orion Valorização de Resíduos S.A. in a customized maintenance logbook (with details about historical of performed interventions (repair, maintenance and calibration services) ^{/30/}. As established in the registered GS4GG PDD ^{/02/}, the latest version of the Monitoring Report ^{/04/} summarizes the maintenance events (inspection and maintenance services) that were performed in the installed flare during the

	considered monitoring period. The listed events (dated 10/08/2023, 03/05/2024, 08/10/2024 and 05/08/2025) encompass general inspection/maintenance services (incl. inspection of the condition of the flare isolation ceramics revetment material, checking of condition/function of the air inlet dumpers, checking of the conditions of the thermocouples, checking of the condition of the UV flame detector, checking of the condition of the flame arrester valve, checking of the conditions of the LFG injectors, checking of painting conditions). As also appropriately outlined in the Monitoring Report ^{/04/}, general inspection/maintenance services on the flare are opportunely performed during planned or unplanned interruptions of operation of the flare. As per both the registered GS4GG PDD ^{/02/} and the methodological tool "Project emissions from flaring" (version 04.0) ^{/10/}, (which is applied in accordance with ACM0001 (version 19.0) ^{/06/}), monitoring of the parameter Maintenance_y is to be performed annually. Thus, the applied monitoring frequency for the parameter (with maintenance events being registered at the date when the event is performed) is thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/}.
Type of monitoring equipment/instrument:	Not applicable. There are no measurements involved in the monitoring of Maintenance _y .
Calibration frequency	Not applicable. There is no calibration frequency involved in the monitoring of Maintenance _y .
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	Not applicable.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Not applicable.

Data / Parameter: (as per the monitoring plan of the PDD):	Status of biogas destruction device (Operational status of biogas destruction devices)
Measuring, recording and reporting frequencies:	The operational status of each one of the 20 internal combustion engines is recorded/reported every minute on the basis of the signal from the electronic control system for each internal combustion gas engine. The operational status of the installed high temperature enclosed flare is recorded/reported every minute on the basis of the signal from the UV flame detectors installed in each one of the flares. The Applus+ verification team has confirmed that the following disclaimers are appropriately added in the Monitoring Report ^{/04/}: <i>"It is relevant to note that, for the particular case of the set of 20 internal combustion gas engines, the parameter "Status of biogas destruction device" is monitored on the same basis as the monitoring parameter "Operation of the equipment that consumes LFG" ($O_{p,h}$) (for each individual internal combustion gas engine through the sub-parameters $O_{engine-1,h}$, $O_{engine-2,h}$, $O_{engine-3,h}$, (...), $O_{engine-20,h}$) as reported in the monthly emission reductions calculation spreadsheets.</i> <i>It is relevant to note that, for the particular case of the installed high temperature enclosed flare, the parameter "Status of biogas destruction device" is monitored on the same basis as the monitoring parameter "Flame detection of flare in the minute m" ($Flame_m$) as reported in the monthly emission reductions calculation spreadsheets."</i> As per both the registered GS4GG PDD ^{/02/} and ACM0001 (version 19.0) ^{/06/}, the operational status of each biogas destruction device shall be recorded once per minute. Thus, the applied measuring, recording and reporting frequencies for Status of biogas destruction device are thus in accordance with both ACM0001 (version 19.0) ^{/06/} and the registered GS4GG PDD ^{/02/}.
Type of monitoring equipment/instrument:	Not applicable. The operational status of each one of the engine-generator sets, as automatically detected by the electronic control system for each engine-generator set based on functional parameters, is processed by the project's control system infrastructure and recorded as monitoring data. Information details about the UV flame detectors installed on each high temperature enclosed flare used to monitor the operational status of each one of the installed high temperature enclosed flares are presented in the applicable table for the monitoring parameter "Flame detection of flare in the minute m" ($Flame_m$).
Calibration frequency	Not applicable
How were the values in the Monitoring Report	Assessment details about recording of values measured at the project site are included in Section 5.7.3.

(and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?

Furthermore, data authenticity checking was performed for all measurement records of the following LFG and LFG flaring/utilization related monitoring parameters to demonstrate and ensure that only authentic/not modified monitoring data was used as input data for the emission reduction calculations for the considered monitoring period:

- Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$)
- Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$)
- Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$)
- Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$)
- Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$)
- Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$)
- Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$)
- Temperature of the LFG stream in time interval t (T_t)
- Pressure of the LFG stream in time interval t (P_t)
- Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$)
- Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$)
- Flame detection of flare in the minute m ($Flame_m$)
- Operational status of biogas destruction devices (Status of biogas destruction device)

The performed checking aimed to ensure that monitoring data were not intentionally or unintentionally edited/modified by anyone prior of being used as primary data input for the processing of emission reduction calculations. The performed checking also aimed to ensure that the emission reduction

	calculation spreadsheet ^{/05/} includes only authentic monitoring records. Details about the performed data authenticity checking (which is valid for listed LFG and LFG flaring/utilization related monitoring data) are included in Section 5.8.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Not applicable

Data / Parameter: (as per the monitoring plan of the PDD):	Average technical transmission and distribution losses for grid-sourced electricity consumed by the project activity in year y ($TDL_{j,y}$)
Measuring, recording and reporting frequencies:	The value for the monitoring parameter $TDL_{j,y}$ is selected as 20% which corresponds to the applicable default value as per Option A of the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/13/}. The determination of $TDL_{j,y}$ is confirmed as being under conformance with applicable guidance of the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/13/}. No measurement was performed in the context of the determination of the parameter $TDL_{j,y}$ and no monitoring equipment/instrument was used either. Default value as per Option A of the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/13/} is considered every year monitoring frequency is thus assumed as being applied. This is confirmed as being under conformance with the registered PDD ^{/2/}.
Type of monitoring equipment/instrument:	Not applicable.
Calibration frequency	Not applicable.
How were the values in the Monitoring Report (and/or supporting	The Applus+ verification team confirmed as part of its performed assessment that <i>ex-post</i> determined value for $TDL_{j,y}$ on the basis of information of the methodological tool "Baseline, project

documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/11/} has been selected and applied for the determination of and project emissions related to electricity consumption in CDM projects hosted in Brazil with full acceptance both from the DOEs involved in the assessments and from the CDM-EB. The selected value for the monitoring parameter $TDL_{j,y}$ was confirmed by the Applus+ verification to correctly represent the default value according to the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/11/}. In summary, it is Applus+ opinion that the selection and reporting of the monitoring parameter $TDL_{j,y}$ is deemed correct and acceptable.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Not applicable
Data / Parameter: (as per the monitoring plan of the PDD): Measuring, recording and reporting frequencies:	Average technical transmission and distribution losses for providing electricity to the grid in year y ($TDL_{k,y}$) The value for the monitoring parameter $TDL_{k,y}$ is selected as 3% which corresponds to the applicable default value as per Option A of the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/13/}. The determination of $TDL_{k,y}$ is confirmed as being under conformance with applicable guidance of the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/13/}. No measurement was performed in the context of the determination of the parameter $TDL_{k,y}$ and no monitoring equipment/instrument was used either. Default value as per Option A of the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/13/} is considered every year monitoring frequency is thus

	assumed as being applied. This is confirmed as being under conformance with the registered PDD ^{/2/} .
Type of monitoring equipment/instrument:	Not applicable.
Calibration frequency	Not applicable.
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	The Applus+ verification team confirmed as part of its performed assessment that <i>ex-post</i> determined value for $TDL_{k,y}$ on the basis of information of the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/11/} has been selected and applied for the determination of baseline emissions related to electricity generation in CDM projects hosted in Brazil with full acceptance both from the DOEs involved in the assessments and from the CDM-EB. The selected value for the monitoring parameter $TDL_{k,y}$ was confirmed by the Applus+ verification to correctly represent the default value according to the methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/11/}. In summary, it is Applus+ opinion that the selection and reporting of the monitoring parameter $TDL_{k,y}$ is deemed correct and acceptable.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Not applicable

Data / Parameter: (as per the monitoring plan of the PDD):	CO ₂ emission factor of the Brazilian grid electricity during the year y ($EF_{grid,CM,y}$)
Measuring, recording and reporting frequencies:	As per the registered GS4GG PDD ^{/02/} for the GS project activity, monitoring of $EF_{grid,CM,y}$ is to be performed yearly. Moreover, the CDM methodological tool "Tool to calculate the emission factor for an electricity system" (version 07.0) ^{/15/} specifies the monitoring frequency for $EF_{grid,CM,y}$ as yearly. Thus, the applied monitoring frequency is thus in accordance with both the "Tool to calculate

the emission factor for an electricity system” (version 07.0) ^{/15/} and the registered GS4GG PDD ^{/02/} for the GS project activity.

The selected value for $EF_{grid,CM,y}$ valid for the considered monitoring period represents the value calculated as the weighted average of the operating margin ($EF_{grid,OM,y}$) and build margin ($EF_{grid,BM,y}$) emission factors. To weigh these two emission factors, the default weighting factor values applicable to the GS crediting period of the project activity are correctly applied. The values of $EF_{grid,CM,y}$ valid for the considered monitoring period are thus obtained as follows:

$$EF_{grid,CM,y} = W_{OM} * EF_{grid,OM,y} + W_{BM} * EF_{grid,BM,y}$$

Where:

W_{OM} Weighting of operating margin emissions factor. W_{OM} is ex-ante selected as 0.25%.

W_{BM} Weighting of operating margin emissions factor. W_{BM} is ex-ante selected as 0.75%.

$EF_{grid,OM}$ Operating margin CO₂ emission factor for the project electricity system in year y . As per the applied monitoring procedure, the selected value for the monitoring parameter $EF_{grid,OM,y}$ represents the official average value for years (vintage) of 2023, 2024 and 2025 (from January to August), as calculated and made public available by the CDM DNA of Brazil ^{/26/}.

$EF_{grid,BM}$ Build margin CO₂ emission factor for the project electricity system in year y . As per the applied monitoring procedure, the selected value for the monitoring parameter $EF_{grid,BM,y}$ represents the official average value for the year (vintage) of 2022 (0.0270 tCO₂/MWh) as calculated and made public available by the CDM DNA of Brazil ^{/26/}.

For the considered monitoring period, $EF_{grid,CM,y}$ is thus correctly calculated as:

0.1149 tCO₂/MWh (calculated value based on applicable values for $EF_{grid,BM,2022}$ and $EF_{grid,OM,2023}$).

0.1321 tCO₂/MWh (calculated value based on applicable values for $EF_{grid,BM,2022}$ and $EF_{grid,OM,2024}$).

0.0262 tCO₂/MWh (calculated value based on applicable values for $EF_{grid,BM,2022}$ and $EF_{grid,OM,January-2025}$).

0.0265 tCO₂/MWh (calculated value based on applicable values for $EF_{grid,BM,2022}$ and $EF_{grid,OM,February-2025}$).

0.0256 tCO₂/MWh (calculated value based on applicable values for $EF_{grid,BM,2022}$ and $EF_{grid,OM,March-2025}$).

0.0275 tCO₂/MWh (calculated value based on applicable values for $EF_{grid,BM,2022}$ and $EF_{grid,OM,April-2025}$).

	0.0280 tCO₂/MWh (calculated value based on applicable values for EF_{grid,BM,2022} and EF_{grid,OM,May-2025}). 0.0316 tCO₂/MWh (calculated value based on applicable values for EF_{grid,BM,2022} and EF_{grid,OM,June-2025}). 0.1525 tCO₂/MWh (calculated value based on applicable values for EF_{grid,BM,2022} and EF_{grid,OM,July-2025}). 0.1585 tCO₂/MWh (calculated value based on applicable values for EF_{grid,BM,2022} and EF_{grid,OM,August-2025}). Related calculations are also included in the emission reduction calculation spreadsheet ^{/05/}. In summary, the Applus+ Certification verification team has confirmed that the determination of the parameter EF_{grid,CM,y} for the considered monitoring period is under conformance with provisions of both the registered GS4GG PDD ^{/02/} and the applied CDM methodological tool "Tool to calculate the emission factor for an electricity system" (version 07.0) ^{/15/}.
Type of monitoring equipment/instrument:	Not applicable
Calibration frequency	Not applicable
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	As confirmed by the Applus+ Certification verification team, the CDM DNA of Brazil has regularly calculated values of EF_{grid,OM,y} and EF_{grid,BM} for the National Electricity Grid of Brazil by applying classified information and data on dispatch of electricity by grid-connected power plants within the National Electricity Grid of Brazil ^{/26/} and by following the applicable guidance of the methodological tool "Tool to calculate the emission factor for an electricity system" (version 07.0) ^{/15/}. Related clarifications and details for the determination of EF_{grid,OM,y} and EF_{grid,BM} by the CDM DNA of Brazil are made available at a specific section of the website of the CDM DNA of Brazil ^{/26/}. The selected values for the monitoring parameter EF_{grid,OM,y} were confirmed by the Applus+ Certification verification to correctly represent the official value for EF_{grid,OM,y} for year 2023 as published by the CDM DNA of Brazil. In summary, it is Applus+ Certification opinion that the selection and reporting of the monitoring parameter EF_{grid,CM,y} is deemed correct and acceptable.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting	As confirmed by the Applus+ Certification verification team, the CDM DNA of Brazil has regularly calculated values of EF_{grid,OM,y} and EF_{grid,BM,y} for the National Electricity Grid of Brazil by applying classified information and data on dispatch of electricity by grid-connected power plants within the National Electricity Grid of Brazil. The Applus+ Certification verification team also confirmed as part of its performed assessment that, for applicable cases, <i>ex-post</i>

of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	monitored values for $EF_{grid,OM,y}$ <i>ex-ante</i> determined for $EF_{grid,BM,y}$ based on information published by the CDM DNA of Brazil ^{/26/} have been systematically selected and applied for the determination of both baseline and project emissions related to electricity generation and consumption respectively in CDM projects hosted in Brazil with full acceptance both from the DOEs involved in the assessments and from the CDM-EB. The selected annual values for years 2023, 2024 and 2025 (from January to August) for the monitoring parameter $EF_{grid,CM,y}$ and the selected 2022 vintage value for the ex-ante determined parameter $EF_{grid,BM,y}$ were confirmed by the Applus+ Certification verification team to correctly represent the official values as published by the CDM DNA of Brazil ^{/26/}. As part of Applus+ Certification's assessment, the determined (fixed) parameters w_{OM} and w_{BM} were also assessed and confirmed as correctly selected and applied for the determination of the value for $EF_{grid,CM,y}$. In summary, it is Applus+ Certification's opinion that the selection and reporting of the monitoring parameter $EF_{grid,CM,y}$ is deemed correct and acceptable.
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SDG 7 and SDG 13:

Data / Parameter: (as per the monitoring plan of the PDD):	Amount of electricity generated using LFG by the project activity in year y ($EG_{PJ,y} = EC_{BL,k,y}$)
Measuring, recording and reporting frequencies:	During the considered monitoring period, accumulated values of continuous measurements of $EG_{PJ,y} = EC_{BL,k,y}$ were aggregated and recorded/reported monthly by the monitoring staff of the GS project activity. As per the registered GS4GG PDD for the GS project activity, the parameter $EG_{PJ,y} = EC_{BL,k,y}$ is to be monitored continuously. ACM0001 (version 19.0) ^{/06/} and the "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) ^{/11/} do not clearly indicate recording and reporting frequencies for continuous measurements for the parameter $EG_{PJ,y} = EC_{BL,k,y}$. Thus, the adopted measuring, recording and reporting frequency for $EG_{PJ,y} = EC_{BL,k,y}$ is assumed as in accordance with the monitoring plan of the registered GS4GG PDD ^{/02/} for the GS project activity, the Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion and ACM0001 (version 19.0) ^{/06/}.
Type of monitoring equipment/instrument:	During the considered monitoring period, measurements of $EG_{PJ,y} = EC_{BL,k,y}$ were confirmed as being performed by an electricity meter of which main technical specifications are presented below:

	Specifications of the utilized electricity meter installed within the considered monitoring period:															
	Manufacturer		Schneider Electric													
	Model		ION 8650													
	Serial Number (S/N)		1807A325-02													
	Accuracy		±0.1%													
	Source: ^{/39/}															
	The registered GS4GG PDD ^{/02/} and/or ACM0001 (version 19.0) ^{/06/} do not specify any accuracy requirement for the electricity meter. The accuracy range for the installed measuring instrument is ±0.1%. Based on its expertise and experience with similar project-based initiatives promoting LFG collection and destruction/utilization, it is Applus+ Certification opinion that the use of the installed instrument represents good practice for monitoring of electricity generated by the project activity.															
Calibration frequency	As per the implemented monitoring procedure at Ecoparque Candeias landfill and recommendations from the equipment's manufacturer, the installed electricity meter is to be calibrated every 5 years. As confirmed by the Applus+ Certification's verification team through assessment of the specification sheet for the installed electricity meter, the selected calibration frequency is as per the recommendations of the instrument manufacturer ^{/39/} .															
	<table><tr><th>Calibration date</th><th>Certificate number</th><th>Company performing the calibration event</th><th>Validity</th></tr><tr><td>13/11/2018</td><td>CAL 005/2018</td><td>3C Services S.A.</td><td>12/11/2018</td></tr><tr><td>06/03/2023</td><td>CC-0046-24</td><td>Metrum Equipamentos de Medição e Testes</td><td>05/03/2028</td></tr></table>				Calibration date	Certificate number	Company performing the calibration event	Validity	13/11/2018	CAL 005/2018	3C Services S.A.	12/11/2018	06/03/2023	CC-0046-24	Metrum Equipamentos de Medição e Testes	05/03/2028
	Calibration date	Certificate number	Company performing the calibration event	Validity												
13/11/2018	CAL 005/2018	3C Services S.A.	12/11/2018													
06/03/2023	CC-0046-24	Metrum Equipamentos de Medição e Testes	05/03/2028													
Source: ^{/24/}																
	Calibration Certificates for the above-summarized calibration events were made available and assessed by the Applus+ Certification's verification team.															
	As per both the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/16/} , the installed electricity meter is to be calibrated in a frequency as per the instrument's specifications and/or instrument manufacturer's recommendations. Thus, the adopted calibration frequency (5 years, as per recommendations from the equipment's manufacturer) is in line with both the monitoring plan of the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/} .															

	As also confirmed by Applus+ Certification's verification team the performed calibration events for the electricity meter confirmed proper functioning of the measurement instrument. Moreover, as outlined in the Monitoring Report ^{/04/}, there are no relative delays in performing the calibration events for the installed electricity meter.
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation spreadsheet) verified and/or compared?	Records of electricity generated during the considered monitoring period, as reported in the emission reduction calculation spreadsheet ^{/05/} and Monitoring Report were cross-checked with the monthly reports made available by Electric Energy Trading Chamber (CCEE) ^{/60/} which were made available and assessed by the Applus+ Certification's verification team. Such cross-checking confirmed correctness of reported data for $EG_{PJ,y} = EC_{BL,k,y}$ during the considered monitoring period.
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Yes. Details for data transfer and reporting of emission reductions (incl. relevant QA/QC process) are further assessed in Section 5.7.

SDG 8:

Data / Parameter: (as per the monitoring plan of the PDD):	Number of employees related to the operation of the project activity (Total number of jobs)
Measuring, recording and reporting frequencies:	The number of employees related to the operation of the project activity during each is registered at the end of each year.
Type of monitoring equipment/instrument:	Not applicable
Calibration frequency	Not applicable
How were the values in the Monitoring Report (and/or supporting documents, i.e emission reduction calculation	The Applus+ Certification's verification team has confirmed through assessment of a list of all the employees from the project developer Orizon Valorização de Resíduos S.A. which are directly involved in the operation of the GS project activity ^{/48/} , that the following reported number of individuals associated with the operation of the GS project activity were registered as

spreadsheet) verified and/or compared?	employees/collaborators under conformance with procedures and requirements of the Brazilian labour legislation framework: - 20 jobs in 2023 - 20 jobs in 2024 - 20 jobs in 2025
Does the applied monitoring data management process (from monitoring equipment/instrument to emission reduction calculation) ensure correct recording, transfer and reporting of data to be used for the emission reductions calculations? Are necessary/applicable QA/QC processes in place?	Not applicable.

It is important to note that the monitoring plan of the registered GS4GG PDD ^{/02/} for the GS project activity also includes the following monitoring parameters of which monitoring was not required during the considered monitoring period due to the chosen approach for baseline calculations:

Parameters not monitored during the considered monitoring period
Volumetric flow of LFG stream in time interval t on a wet basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,wb,j}$)
Volumetric fraction of CH ₄ in the collected LFG in time interval t on a wet basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($v_{CH_4,t,wb,j}$)
Saturation pressure of H ₂ O at temperature T_t in time interval t ($P_{H_2O,t,Sat}$)

While the installed LFG flow meters are confirmed by the Applus+ Certification's verification team to automatically convert and report measured values of LFG flow in normalized cubic meters per hour (Nm/h³) (by considering standard temperature and pressure (STP) conditions), monitoring of the parameters "Temperature of the LFG stream in time interval t " (T_t) and "Pressure of the LFG stream in time interval t " (P_t) is thus not required. This is in conformance with the monitoring plan as per the registered GS4GG PDD ^{/02/} for the GS project activity and ACM0001 (version 19.0) ^{/06/}.

Moreover, the Applus+ Certification's verification team has confirmed that, as also correctly indicated in the Monitoring Report ^{/04/}, since the installed backup captive off-grid electricity generator (fuelled by Diesel) did not operate during the whole considered monitoring period, the monitoring parameter "Quantity of electricity consumed from diesel generator by the project activity during the year y " ($EC_{PJ2,y} = EG_{EC2,y}$) was also not used for the determination of emission reductions achieved by the project activity during the considered monitoring period.

5.7.3. Assessment of handling of records for both parameters monitored ex-post and ex-ante determined parameters in the context of determination of emission reductions achieved by the GS project activity during the considered monitoring period

As part of the applied monitoring procedure, measurements for the following LFG and flaring related monitoring parameters were automatically processed by the Programmable Logic Controller (PLC) unit and recorded in a customized database with a data recording/reporting frequency of every one minute along the considered monitoring period:

- Volumetric flow of LFG stream in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{t,db,j}$)
- Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($V_{CH_4,t,db,j}$)
- Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m ($V_{O_2,EG,m}$)
- Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m ($V_{RG,m}$)
- Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($V_{i,RG,m}$)
- Mass flow of the residual gas on a dry basis at reference conditions in the minute m ($M_{RG,m}$)
- Concentration of methane in the exhaust gas of the flare on a dry basis at reference conditions in the minute m ($f_{CH_4,EG,m}$)
- Temperature of the LFG stream in time interval t (T_t)
- Pressure of the LFG stream in time interval t (P_t)
- Operation of the equipment that consumes LFG (engine-generator sets of the electricity generation infrastructure) ($O_{pj,h}$)
- Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$)
- Flame detection of flare in the minute m ($Flame_m$)
- Operational status of biogas destruction devices (Status of biogas destruction device)

It is the opinion of Applus+ Certification that the use of the applied data supervisor system and data base for recording monitoring details for Ecoparque Candeias Landfill Gas Project represents good practice in terms of data acquisition and data archiving. Applus+ Certification was also able to verify that a reliable and robust monitoring mechanism was established, implemented and has been followed by the project developer.

As per the implemented monitoring procedure, at regular time intervals, the monitoring manager for Ecoparque Candeias Landfill Gas Project exports/converts data into an MS-Excel-format (.xls files) by using available function from the GS project activity's data supervisor system.

Also, as part of the implemented monitoring procedure, monthly MS-Excel format “raw-data” files ^{/41/} (containing every-minute measurement data for the above-quoted monitoring parameters) resulted from regular data exports were used as primary monitoring input data for the emission reduction calculations (as established in the applicable work procedure of the GS project activity).

For the considered monitoring period, as per the adopted working procedures, monthly “raw-data” MS-Excel-format files were generated for the considered monitoring period from 29/09/2023 to 31/08/2025. The MS-Excel “raw-data” files were used as primary monitoring data input for the compilation of the emission reduction calculations.

The generated MS-Excel-format “raw-data” files were made available and assessed by the Applus+ Certification’s verification team.

As per the adopted monitoring procedure and in accordance with the requirements of ACM0001 (version 19.0) ^{/06/} and related provisions of the registered GS4GG PDD ^{/02/} for the GS project activity for Ecoparque Candeias Landfill Gas Project, GHG emission reductions are calculated based on measurement records and selected default values of the ex-post monitored parameters (of which monitoring details are presented in the tables above) and also using the values for the ex-ante determined parameters presented in Section 3.4.

In summary, the Applus+ Certification’s verification team was able to confirm that calculations of baseline emissions and project emissions were correctly performed as per the formulae and methods stated in the registered GS4GG PDD ^{/02/} for the GS project activity for Ecoparque Candeias Landfill Gas Project, monitoring methodology and applicable tools.

All calculations are thus confirmed by the Applus+ Certification’s verification team to be under conformance with applicable requirements from:

- CDM baseline and monitoring methodology ACM0001 – “Flaring or use of landfill gas” (version 19.0) ^{/06/}
 - TOOL03 - “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” (version 03.0) ^{/12/}
 - TOOL05 - “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” (version 03.0) ^{/11/}
 - TOOL06 - “Project emissions from flaring” (version 04.0) ^{/10/}
 - TOOL07 - “Tool to calculate the emission factor for an electricity system” (version 07.0) ^{/15/}
 - TOOL08 - “Tool to determine the mass flow of a greenhouse gas in a gaseous stream” (version 03.0) ^{/14/}
- Monitoring plan as per the registered GS4GG PDD ^{/02/} for the GS project activity for Ecoparque Candeias Landfill Gas Project

5.8 Monitoring Management and Quality Assurance

The Applus+ Certification's verification team was able to confirm that quality control and quality assurance (QA/QC) procedures are implemented by the project developer for preventing or identifying and correct eventual errors or omissions in the reported monitoring parameters.

As verified by the Applus+ Certification's verification team, competent and sufficiently trained staff are recruited to operate the GS project activity and handling related monitoring data. Such employees are found with knowledge not only about the operation of the GS project activity, but also with sufficient knowledge and competence to ensure the application of all related QA/QC procedures for data recording and storage.

Furthermore, the project developer was also supported with consultancy and advisory services in GS4GG and LFG management related issues by the consultancy service company named UniCarbo Energia e Biogás Ltda. As confirmed by the Applus+ Certification's verification team, the technical team from UniCarbo Energia e Biogás Ltda. Has contributed for the development of related documentation (e.g. Monitoring Report ^{/04/} and emission reduction calculation spreadsheet ^{/05/}) and also supported in addressing all raised outstanding issues.

As confirmed by the Applus+ Certification's verification team, the applied procedures for data collection, data reporting, performance of calibration events and other aspects related to the applied procedures for determining the emission reductions are systematically implemented and have been appropriately followed by the project developer. During the conducted onsite inspection to the project site, the Applus+ Certification's verification team was also able to verify that the operational structure of the GS project activity is also in line with the information made available in the registered GS4GG PDD ^{/02/} for the GS project activity of Ecoparque Candeias Landfill Gas Project and the Monitoring Report ^{/04/} for the considered monitoring period.

5.9 Data authenticity checking

As part of the performed verification assessment, the Applus+ verification team was able to confirm that the 24 MS-Excel-format monthly calculation spreadsheet ^{/05/} completed by Orizon Valorização de Resíduos S.A. are all basically MS-Excel spreadsheets that, in theory, could have recorded data being easily edited/modified (intentionally or unintentionally). Thus, these spreadsheets, if inappropriately edited, could potentially tamper reported monitoring records, thus resulting in unreal and incorrect calculation and reporting of emission reductions achieved by the project activity during the considered monitoring period. In order to ensure that all emission reductions calculations are entirely and correctly based on authentic and real monitoring records valid for the considered monitoring period, a *data authenticity check* was performed as part of the verification assessment.

Such checking aimed to ensure that only authentic and unmodified monitoring data records were used by the host-country project participant Orizon Valorização de Resíduos S.A. for performing the emission reduction calculation for the considered monitoring period (thus ensuring that measurement records made available in the MS-Excel format "raw data" input files ^{/41/} and measurement records reported in the 24 monthly emission reduction spreadsheets ^{/05/} were not intentionally or unintentionally edited/modified during the generation or handling of these files).

The performed *data authenticity checking* involved the following steps:

STEP 1: Assessment and handling of the measurement data:

While each monthly MS-Excel format raw data contains identical every-minute LFG related monitoring records for the whole month period encompassed by the considered monitoring period, the Applus+ verification team has assessed the set of 24 monthly files in MS-Excel format (with primary data inputs from the project's data supervisor system) retrieved from the project's data supervisor system during the production of the live videos (movies) ^{/49/}. These comparative files were termed by the Applus+ verification team as "*raw-data for checking*" files ^{/59/}.

STEP 2: Re-calculation of emission reductions:

By using the set of 24 MS-Excel format "*raw-data for checking*" comparative files ^{/59/} (that were generated under STEP 1) as input data, the procedure for emission reductions calculation for the whole monitoring period was reproduced by the Applus+ verification team for all months encompassed by the considered monitoring period. The content of the "*raw-data for checking*" comparative files ^{/59/} was used as input data for the 7 comparative monthly emission reduction calculation spreadsheets ^{/42/} by applying *blank* versions ^{/43/} of the emission reduction calculation spreadsheet that were both made available by the project developer. Moreover, correct values for the applicable *ex-ante* determined parameters were also inserted in the blank version ^{/43/} of the emission reduction calculation spreadsheet ^{/05/} as input data. As a result of this step, a set of 24 comparative monthly emission reduction spreadsheets ^{/42/} was thus created.

STEP 3 – Comparison of emission reduction calculation spreadsheets developed by the project participant Orizon Valorização de Resíduos S.A. against the created comparative monthly emission reduction spreadsheets and analysis of the results:

As a result of STEP 3, by comparing files previously generated by the project participants against the files generated under STEP 2, the Applus+ verification team was able to confirm that the generated set of 24 comparative monthly checking spreadsheets ^{/42/} are identical to the 24 monthly emission reduction calculation spreadsheets ^{/05/} previously created by the project participants. While no quantitative deviations or differences were identified when comparing the accumulated values for the calculation parameters presented in these files, and by assuming that all encrypted data stored in the project's data supervisor system represent credible and authentic monitoring data, the performed *data authenticity checking* thus successfully and sufficiently confirmed that only authentic and not-modified monitored measurement data (from the project's data supervisor system) were previously used by the project participant Orizon Valorização de Resíduos S.A. for the calculation of emission reductions as reported in the Monitoring Report ^{/04/}.

5.10 Assessment of Data and Calculation of Greenhouse Gas Emission Reductions

5.9.1. Assessment of determination of baseline emissions

The Applus+ Certification's verification team assessed whether the methods and formulae applied to determine baseline emissions of the GS project activity for the considered monitoring period are appropriate and under conformance with applicable requirements.

The performed assessment encompassed checking whether applied methods and formulae (as defined in the monitoring plan as per the registered GS4GG PDD ^{/02/} for the GS project activity

and applied CDM baseline and monitoring methodology + applied CDM methodological tools were correctly applied and reported, including confirmation whether the Monitoring Report ^{/04/} includes all parameters and monitored data at the required intervals.

The correct application of emission factor and default values (ex-ante determined/fixed parameters) as per the registered GS4GG PDD ^{/02/} for the GS project activity was also verified.

The Applus+ Certification's verification team was able to verify that, as correctly reported in the Monitoring Report and under conformance with ACM0001 (version 19.0) ^{/06/} and applied CDM methodological tools and also under conformance with the registered GS4GG PDD ^{/02/} for the GS project activity, baseline emissions during the considered monitoring period are correctly calculated as follows (as defined by the registered GS4GG PDD ^{/02/} for the GS project activity):

$$BE_y = BE_{CH_4,y} + BE_{EC,y}$$

Assessment of Baseline emissions of methane from the SWDS in year y :

$$BE_{CH_4,y} = (1 - OX_{top_layer}) * (F_{CH_4,PJ,y} - F_{CH_4,BL,y}) * GWP_{CH_4}$$

Where:

OX_{top_layer} Fraction of methane in the LFG that would be oxidized in the top layer of the SWDS in the baseline. As outlined in the Monitoring Report, OX_{top_layer} is *ex-ante* determined as 10%. This value represents the *ex-ante* determined value as per the registered GS4GG PDD for the GS project activity.

$GWP_{CH_4,y}$ Global warming potential of CH_4 . As outlined in the Monitoring Report ^{/04/}, $GWP_{CH_4,y}$ is *ex-ante* determined as 28. This value represents the *ex-ante* determined value as per the registered GS4GG PDD ^{/02/} for the GS project activity.

$F_{CH_4,BL,y}$ Amount of methane in the LFG that would be flared in the baseline in year y . $F_{CH_4,BL,y}$ is calculated as follows:

$$F_{CH_4,BL,y} = 0.2 * F_{CH_4,PJ,y}$$

As appropriately outlined in the latest version of the Monitoring Report, this calculation parameter is correctly determined as 0.2 times the total amount of captured methane that is sent to the flare and to the engine-generator sets for combustion during each the minute m within the considered monitoring period. As confirmed by the Applus+ verification team, the calculated accumulated value for $F_{CH_4,BL,y}$ for the considered monitoring period is correctly determined as 13,336 t CH_4 .

$F_{CH_4,PJ,y}$ Amount of methane in the LFG which is flared and/or used in the project activity in year y . As outlined in the latest version of the Monitoring Report and in accordance with the registered GS4GG PDD for the GS project activity, $F_{CH_4,PJ,y}$ is correctly determined as follows:

$$F_{CH_4,PJ,y} = F_{CH_4,flared,y} + F_{CH_4,EL,y}$$

Where:

$F_{CH_4,EL,y}$ Amount of methane in the LFG which is used for electricity generation in year y . As outlined in the latest version of the Monitoring Report and in accordance with the registered GS4GG PDD for the GS project activity, $F_{CH_4,EL,y}$ is correctly determined as follows:

$$F_{CH_4,EL,y} = V_{t,db,j} * V_{i,t,db,j} * \rho_{i,n}$$

Where:

$V_{t,db,j}$ Volumetric flow of the gaseous stream in time interval t on a dry basis. As confirmed by the Applus+ verification team, while continuous measurements of volumetric flow of the gaseous stream are processed, recorded and reported in Nm³ dry gas/h (normal conditions). Further assessment details for the monitoring parameter $V_{t,db,j}$ are included in Section 5.7.2.

$V_{i,t,db,j}$ Volumetric fraction of greenhouse gas i in a time interval t on a dry basis. Further monitoring details about the monitoring parameter $V_{i,t,db,j}$ are included in Section 5.7.2.

$\rho_{i,n}$ Density of greenhouse gas i in the gaseous stream in time interval t . As per the selected determination procedure of the "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (version 03.0) ^{/14/}, $\rho_{i,n}$ is calculated as follows:

$$\rho_{i,n} = (P_t * MM_i) / (R_u * T_t)$$

Where:

P_t Absolute pressure of the gaseous stream in time interval t . Further assessment details for the monitoring parameter P_t are included in Section 5.7.2.

T_t Temperature of the gaseous stream in time interval t . Further assessment details for the monitoring parameter T_t are included in Section 5.7.2.

MM_i Molecular mass of greenhouse gas i ($i = CH_4$). *Ex-ante* determined as 16.04 kg/mol.

R_u Universal ideal gases constant. *Ex-ante* determined as 8,314 Pa.m³/kmol.K.

The Applus+ verification team was able to verify that the value of the parameter $\rho_{CH_4,n}$ was correctly calculated and reported as 0.7160 kgCH₄/m³CH₄.

As also confirmed by the Applus+ verification team, as established in the registered GS4GG PDD for the GS project activity and presented in the monthly emission reduction calculation spreadsheets, for each one of the 20 internal

combustion gas engine, the amount of methane destroyed for minute m for a particular gas engine is directly accounted as 0 (zero) in case such methane destruction device is monitored as “not working” in such minute m (on the basis of available every-minute records for the parameter $Op_{j,h}$ (sub-parameters $Op_{engine-1,h}$, $Op_{engine-2,h}$, (...), $Op_{engine-20,h}$). All related calculations are presented in the monthly emission reduction calculation spreadsheets that are enclosed with the Monitoring Report.

$F_{CH4,flared,y}$ Amount of methane in the LFG which is destroyed by flaring in year y . Under conformance with applicable requirements from the registered GS4GG PDD for the GS project activity and by correctly following the applicable guidance of the “Tool to determine the mass flow of a greenhouse gas in a gaseous stream” (version 03.0) ^{/14/}, each value is correctly determined as the difference between the amount of methane supplied to the flare and residual methane project emissions from combustion of LFG for the flare as follows:

$$F_{CH4,flared,y} = F_{CH4,sent_flare,y} - (PE_{flare,y} / GWP_{CH4})$$

Where:

$F_{CH4,sent_flare,y}$ Amount of methane in the LFG which is sent to the flare in year y . The Applus+ Certification’s verification team was able to verify that every minute values of the calculation parameter $F_{CH4,sent_flare,y}$, were determined by correctly following the applicable guidance of the methodological tool “Tool to determine the mass flow of a greenhouse gas in a gaseous stream” (version 03.0) ^{/14/} as also established in the registered GS4GG PDD for the GS project activity. All formulae of the methodological tool “Tool to determine the mass flow of a greenhouse gas in a gaseous stream” (version 03.0) ^{/14/} were correctly applied in the emission reduction calculation spreadsheet and presented in the Monitoring Report.

$PE_{flare,y}$ Project emissions from flaring of the residual gas stream in year y . The Applus+ Certification’s verification team was able to verify that every minute values of the calculation parameter $PE_{flare,y}$, were determined by correctly following the applicable guidance of the methodological tool “Project emissions from flaring” (version 04.0) ^{/10/} as also established in the registered GS4GG PDD for the GS project activity. All formulae of the methodological tool “Project emissions from flaring” (version 04.0) ^{/10/} were correctly applied in the context of flare efficiency calculation in the

emission reduction calculation spreadsheet and presented in the Monitoring Report.

Assessment details for the additional monitoring requirements applicable for the simplified monitoring approach of the Appendix of the methodological tool "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (version 03.0)) (Use of a single flow meter for multi-use of recovered biogas):

The Applus+ Certification's verification team has confirmed that, as appropriately outlined in the Monitoring Report, during the considered monitoring period collected LFG sent to the project's electricity generation infrastructure was measured by a single LFG flow meter. While the determination of baseline emissions for the considered monitoring period is performed by applying the simplified monitoring approach of the Appendix of the methodological tool "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (version 03.0), all additional requirements for the use of such simplified monitoring approach were assessed by the Applus+ Certification's verification team.

The Applus+ Certification's verification team has also confirmed that the design of the installed engine-generator sets of the project's electricity generation infrastructure and the whole construction of the project's electricity generation infrastructure ensure that no collected LFG is vented (directly emitted into the atmosphere) through any one of the installed engine-generators when they are not under operational status.

Whenever the installed engine-generators are under operational status, for all time instants all collected LFG sent to such biogas utilization devices is utilized (combusted) as gaseous fuel for electricity generation.

As also confirmed by the Applus+ Certification's verification team, all installed engine-generator sets are of design and constructions where there is an individual safety/control valve (located in the air/fuel mix intake manifold of each set) that is automatically kept under "closed" status/position whenever the underlying engine-generator set is not under operation.

Through assessment of the monthly emission reductions calculation spreadsheets valid for the considered monitoring, the Applus+ Certification's verification team has also confirmed that the following checking requirements (as described in the Monitoring Report) were fulfilled during the considered monitoring period:

"(...)

- *Records of electricity generated by the engine generator sets. It is demonstrated that electricity generation (as the output from operation of such devices) corresponds to the flow of LFG actually consumed by the devices (in energy basis).*
- *For any time instants (minute m) where one or more engine-generator set(s) connected downstream to the utilized single LFG flow meter were under non-operational status, it is demonstrated that the set of remaining engine-generators under operational status have the quantitative capacity to combust the amount of LFG flow that was sent to the underlying engine-generators during the underlying minute m".*

It is the opinion of the Applus+ Certification's verification team that the applied approach for checking meeting of the underlying condition (as reported in the monthly emission reductions calculation spreadsheets) is deemed reasonable and correct.

Assessment of Baseline emissions associated with electricity generation in year y .

$$BE_{EC,y} = EC_{BL,k,y} * EF_{EL,k,y} * (1 + TDL_{k,y})$$

Where:

$EC_{BL,k,y}$

Net amount of electricity generated for source k in year y (in MWh). The following monthly values for $EC_{BL,k,y}$ within the considered monitoring period is correctly reported in the Monitoring Report and emission reduction calculation spreadsheet:

Month	Electricity generated (MWh)
September/2023 (from 29/09/2023 to 30/09/2023)	1,008
October/2023	15,910
November/2023	15,279
December/2023	16,193
January/2024	16,264
February/2024	15,159
March/2024	15,933
April/2024	15,344
May/2024	15,724
June/2024	13,855
July/2024	13,566
August/2024	13,961
September/2024	14,366
October/2024	15,541
November/2024	14,592
December/2024	14,851
January/2025	15,002
February/2025	12,357
March/2025	8,018
April/2025	9,537
May/2025	4,603
June/2025	10,313
July/2025	10,501
August/2025	9,789
Total	307,666

Assessment details for the monitoring parameter $EC_{BL,k,y}$ valid for the considered monitoring period are included in Section 5.7.2.

$EF_{EL,k,y}$ CO₂ emission factor of the Brazilian grid electricity during the year y (in tCO₂/MWh). $EF_{EL,grid,y} = EF_{grid,CM,y}$ is to be determined as the combined margin (CM) emission factor ($EF_{grid,CM,y}$) for which assessment details are included below. $EF_{EL,grid,y}$ is calculated as 0.1149 tCO₂/MWh (for year 2023), 0.1321 tCO₂/MWh (for year 2024), 0.0262 tCO₂/MWh (for January 2025), 0.0265 tCO₂/MWh (for February 2025), 0.0256 tCO₂/MWh (for March 2025), 0.0275 tCO₂/MWh (for April 2025), 0.0280 tCO₂/MWh (for May 2025), 0.0316 tCO₂/MWh (for June 2025), 0.1525

tCO₂/MWh (for July 2025), 0.1585 tCO₂/MWh (for August 2025). Assessment details for the monitoring parameter EF_{EL,k,y} valid for the considered monitoring period are included in Section 5.7.2.

TDL_{k,y} Average technical transmission and distribution losses in the grid in year *y* for the voltage level at which electricity is obtained from the grid at the project site. As per applied monitoring procedure, the value for TDL_y is determined as 20%. The selected value represents the applicable default value as per the methodological tool “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” (version 03.0). Further assessment details are included in Section 5.7.2.

The calculated accumulated value for F_{CH₄,PJ,y} = F_{CH₄,flared,y} + F_{CH₄,EL,y} for the considered monitoring period is confirmed by the Applus+ Certification’s verification team as correctly determined as 66,654 tCH₄.

The calculated value for BE_y for the considered monitoring period is also confirmed as being correctly determined as 1,341,291 tCO₂e. The emission reduction calculation spreadsheet ^{/05/} (that is enclosed with this Monitoring Report ^{/04/}) includes all calculations related to the determination of BE_{CH₄,y} and BE_{EC,y} for the considered monitoring period.

5.9.2. Project emissions

Project emissions for the considered monitoring period are thus calculated as follows:

$$PE_y = PE_{EC,y} + PE_{FC,y}$$

Where:

PE_{EC,y} Emissions from consumption of electricity due to the project activity in year *y* (tCO₂/year)

PE_{FC,y} Emissions from consumption of fossil fuels due to the project activity, for purpose other than electricity generation, in year *y* (tCO₂/year).

Emissions from consumption of electricity due to the project activity in year *y* (PE_{EC,y}):

As correctly outlined in the latest version of the Monitoring Report ^{/04/}, during the considered monitoring period, Emissions from consumption of electricity due to the project activity in year *y* (PE_{EC,y} = PE_{EC1,y}) are correctly determined by following applicable guidance of the methodological tool “Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation” (version 03.0) ^{/12/} as follows:

$$PE_{EC1,y} = EC_{PJ1,y} * EF_{grid,CM,y} * (1 + TDL_{j,y})$$

Where:

EC_{PJ1,y} Quantity of electricity consumed from the grid by the project activity during the year *y*. The following monthly values for consumption of grid-sourced electricity (EC_{PJ1,y}) within the considered monitoring period are

correctly reported in the Monitoring Report ^{/04/} and emission reduction calculation spreadsheet ^{/05/}:

Month	Electricity consumption (MWh)
September/2023 (from 29/09/2023 to 30/09/2023)	0
October/2023	0.164
November/2023	0
December/2023	0
January/2024	0
February/2024	0
March/2024	0
April/2024	1.831
May/2024	0.216
June/2024	0.269
July/2024	0.998
August/2024	0.379
September/2024	0
October/2024	0.230
November/2024	0.889
December/2024	0.630
January/2025	0.258
February/2025	0.245
March/2025	26.653
April/2025	2.838
May/2025	0.092
June/2025	0.265
July/2025	0.406
August/2025	4.803
Total	41.166

Assessment details for the monitoring parameter $EC_{PJ1,y}$ valid for the considered monitoring period are included in Section 5.7.2.

$TDL_{j,y}$ Average technical transmission and distribution losses in the grid in year y for the voltage level at which electricity is obtained from the grid at the project site. $TDL_{j,y}$ is ex-ante determined as 20%. Further details about the ex-ante selection of the value and related assessment details for $TDL_{j,y}$ are included in the registered GS4GG PDD ^{/02/} for the GS project activity and in Section 5.7.1 respectively.

$EF_{grid,CM,y}$ CO₂ emission factor of the Brazilian grid electricity during the year y . As per the applied monitoring procedure and as also assessed in Section 5.7.2, $EF_{grid,CM,y}$ is calculated as follows:

$$EF_{grid,CM,y} = W_{OM} * EF_{grid,OM,y} + W_{BM} * EF_{grid,BM,y}$$

Where:

W_{OM} Weighting of operating margin emissions factor. W_{OM} is ex-ante

determined as 0.25. This is in conformance with related provisions from the registered GS4GG PDD for the GS project activity.

W_{BM} Weighting of operating margin emissions factor. W_{BM} is ex-ante determined as 0.75. This is in conformance with related provisions from the registered GS4GG PDD for the GS project activity.

$EF_{grid,OM,y}$ Operating margin emission factor of the Brazilian grid. As per the applied monitoring procedure, the selected values of $EF_{grid,OM}$ of 0.3786 tCO₂/MWh (for year 2023), 0.4473 tCO₂/MWh (for year 2024), 0.0237 tCO₂/MWh (for January 2025), 0.0248 tCO₂/MWh (for February 2025), 0.0215 tCO₂/MWh (for March 2025), 0.0289 tCO₂/MWh (for April 2025), 0.0309 tCO₂/MWh (for May 2025), 0.0455 tCO₂/MWh (for June 2025), 0.5290 tCO₂/MWh (for July 2025), 0.5530 tCO₂/MWh (for August 2025) correctly represent the official average value as calculated and made public available by the CDM DNA of Brazil. Further assessment details for the monitoring parameter $EF_{grid,OM,y}$ are included in Section 5.7.2.

$EF_{grid,BM,y}$ Build margin emission factor of the Brazilian grid. As per the applied monitoring procedure, the selected value for $EF_{grid,BM}$ for year 2022 (0.0270 tCO₂/MWh) correctly represents the official average value for the year (vintage) of 2022 as calculated and made public available by the CDM DNA of Brazil. Further assessment details for the monitoring parameter $EF_{grid,BM,y}$ are included in Section 5.7.1.

As presented in the emission reduction calculation spreadsheet ^{/05/} which is also enclosed to the Monitoring Report, $EF_{grid,CM,y}$ is thus calculated as 0.1149 tCO₂/MWh (for year 2023), 0.1321 tCO₂/MWh (for year 2024), 0.0262 tCO₂/MWh (for January 2025), 0.0265 tCO₂/MWh (for February 2025), 0.0256 tCO₂/MWh (for March 2025), 0.0275 tCO₂/MWh (for April 2025), 0.0280 tCO₂/MWh (for May 2025), 0.0316 tCO₂/MWh (for June 2025), 0.1525 tCO₂/MWh (for July 2025), 0.1585 tCO₂/MWh (for August 2025).

The calculated value for $PE_{EC1,y}$ for the considered monitoring period is correctly determined as 17 tCO₂ (rounded value).

Project emission from electricity consumption from an off-grid captive power plant (diesel generator(s)) ($PE_{EC2,y}$):

The Applus+ Certification verification team was able to verify that, as correctly indicated in the Monitoring Report ^{/04/}, project emission from electricity consumption from the off-grid captive electricity generator (fueled by diesel) are determined as 0 tCO₂ since this generator has not operated during the whole considered monitoring period.

Summary of project emissions:

Total project emissions are correctly calculated and reported as 17 tCO₂ (rounded value) and are correctly considered in the context of the emission reduction calculations.

The summarized emission reduction calculation spreadsheet (that is enclosed with this Monitoring Report ^{/04/}) includes all calculations related to the determination of $PE_{EC,grid,y}$, $PE_{FC,j,y}$ and PE_y for the considered monitoring period.

5.9.3. Emission reductions

The Applus+ Certification's verification team was able to confirm that the reported achieved emission reductions for monitoring period from 29/09/2023 to 31/08/2025 are correctly calculated and reported as the difference between determined accumulated values for baseline emissions and project emissions for the period.

Reported achieved emission reductions are in accordance with all applicable measurement, reporting and calculation requirements as per the monitoring plan of the registered GS4GG PDD, monitoring and baseline methodology ACM0001 - 'Flaring or use of landfill gas' (version 19.0) ^{/06/} and applicable methodological tools.

As verified by the Applus+ Certification's verification team, emission reductions achieved during the considered monitoring period from 29/09/2023 to 31/08/2025 are correctly calculated and reported as 1,341,274 tCO₂e.

5.11 Outcomes of SDGs Monitoring

The verification team checked the sustainable development indicator parameters during the interviews with Orizon Valorização de Resíduos S.A. representatives during the conducted onsite inspection. It is Applus+ Certification's opinion that the monitoring of the project owner regarding sustainability is in line with the requirement of the GS4GG guidelines. The Applus+ Certification verification team has also assessed the SDG Impact Tools for the GS project activity ^{/55/} ^{/62/} in order to confirm that the ex-ante estimated outcomes for the selected SDGs as reported in the Monitoring Report were in accordance with values presented in the registered GS4GG PDD ^{/02/} and SDG Impact Tool ^{/55/}.

The following achieved outcomes of SDG are reported in the Monitoring Report ^{/04/} and SDG Impact Tool ^{/62/}:

SDG	SDG Impact	Net benefit
SDG 7: Affordable and Clean Energy	Total electricity generated (from renewable energy source) in 2023 (from 29/09/2023 to 31/12/2023)	48,390 MWh in 2023
	Total electricity generated (from renewable energy source) in 2024 (from 01/01/2024 to 31/12/2024)	179,156 MWh in 2024
	Total electricity generated (from renewable energy source) in 2025 (from 01/01/2025 to 31/08/2025)	80,120 MWh in 2025
SDG 8: Decent Work and Economic Growth	Total number of jobs in 2023 (from 29/09/2023 to 31/12/2023)	20 jobs in 2023
	Total number of jobs in 2024 (from 01/01/2024 to 31/12/2024)	20 jobs in 2024
	Total number of jobs in 2025 (from 01/01/2025 to 31/08/2025)	20 jobs in 2025
SDG 13: Climate Action	Amount of GHGs emissions avoided or sequestered in 2023 (from 29/09/2023 to 31/12/2023)	198,115 tCO ₂ e in 2023
	Amount of GHGs emissions avoided or sequestered in 2024 (from 01/01/2024 to 31/12/2024)	748,078 tCO ₂ e in 2024
	Amount of GHGs emissions avoided or sequestered in 2025 (from 01/01/2025 to 31/08/2025)	395,081 tCO ₂ e in 2025

Applus+ Certification's verification team has confirmed that the reported information in the Monitoring Report regarding the verified difference between the achieved and estimated amount of electricity generated by the GS project activity (achieved electricity generations are about 71% lower than the value ex-ante estimated for the considered monitoring period) is accurate since the estimation in the registered GS4GG PDD ^{/02/} indeed does not consider stops for maintenance events and also issues in the electricity grid, thus resulted in a significant overestimation in the calculated ex-ante estimation of emission reductions in the GS4GG PDD ^{/02/}.

The Applus+ Certification verification team has also confirmed that the reported achieved outcomes for the selected SDG 8, as indicated in the table above are in accordance with provided documented evidence (list of all the employees directly involved in the operation of the GS project activity during 2023, 2024 and 2025 ^{/48/}).

Moreover, Applus+ Certification confirms that annual values of actual electricity generated by the GS project activity are lower than the estimate of the registered GS4GG PDD ^{/02/} for the GS project activity for the current monitoring period.

In the particular case of SDG 13, the following main aspects sufficiently justify the occurred difference between verified emission reductions achieved during the considered monitoring period and the comparable value for *ex-ante* estimation of emission reductions as per the registered GS4GG PDD ^{/02/} for the same time period (achieved emission reductions are about 152% higher than the value ex-ante estimated for the considered monitoring period):

Uncertainties associated with the application of First Order Decay (FOD) multi-phased model for estimating the emission reductions in the registered GS4GG PDD ^{/02/}:

Like any other project activity encompassing LFG collection and destruction/utilization, all potential uncertainties associated with the application of the First Order Decay (FOD) multi-phased model in the context of the *ex-ante* estimation of emission reductions in the registered GS4GG PDD ^{/02/} are applicable for the *ex-ante* estimation of emission reductions for the GS project activity. The Applus+ Certification verification team has confirmed that it is reasonable to assume that the uncertainties associated with the application of such decay model have somehow underestimated the amount of LFG to be generated and collected by the GS project activity during the considered monitoring period.

Correction in the ex-ante determined parameter Efficiency of the LFG capture system installed in the GS project activity (η_p):

As appropriately outlined in the Monitoring Report and confirmed by the Applus+ Certification verification team, the applied value for the efficiency of the LFG capture system installed at the project activity (default value of 50%) in the GS4GG PDD for the ex-ante estimation of emission reductions is significantly lower than the actual value observed for the project activity, which thus resulted in a significant underestimation in the calculated ex-ante estimation of emission reductions in the GS4GG PDD.

Applus+ Certification verification team considers the project and monitoring description of the project contained in the Monitoring report to be complete and accurate. The Monitoring report complies with the relevant methodology, tools, forms and guidance which are in line with that available in the documents made available (including GS4GG PDD ^{/02/} for the GS project activity) with Gold Standard.

Applus+ Certification's verification team identified that the emission reductions effectively achieved by the GS project activity were higher than those estimated in the GS4GG PDD ^{/02/}. The verification team analyzed whether this difference impacts the fundamental assumptions of the project (scale, additionality, methodology applicability) and concludes the following:

- Project scale: The GS project activity remains within the same operational scale as described in the GS4GG PDD ^{/02/}. The volume of waste received, landfill area, and installed infrastructure have not undergone material changes that would characterize a change in project scale.
- Additionality: The investment, technological, and regulatory requirements that substantiated the additionality demonstration in the GS4GG PDD ^{/02/} remain valid. The higher value of achieved emission reductions does not alter the baseline scenario nor invalidate the applied steps of the CDM methodological tool "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" (version 03.0.1) nor the CDM methodological tool "Combined tool to identify the baseline scenario and demonstrate additionality" (version 07.0) as required by the applied CDM baseline and monitoring methodology (ACM0001 (version 19.0)) that proved the project's additionality.
- Methodology applicability: The project continues in full compliance with the applicability criteria of methodology ACM0001 (version 19.0). There have been no changes in the fundamental characteristics of the landfill or capture system that would invalidate the application of the methodology.

Opinion:

- a) In the opinion of the assessment team the implementation and operation of the GS project activity is in compliance with the project description in the GS4GG PDD for the GS project activity.
- b) There is no revision of the monitoring plan or post registration change for the current monitoring period.

The adequacy and compliance of the monitoring plan in the Monitoring Report ^{/04/} was found as per the requirements laid by the registered GS4GG PDD ^{/02/}. The information flow (from data generation, aggregation, to recording, calculation and reporting) is already included under respective parameters above. The verification team has verified all the data and collected evidence as per the required monitoring frequency and found it to be correct and appropriate meeting the requirements of the applied methodology and the registered GS4GG PDD ^{/02/} for the GS project activity.

As a part of continuous feedback from stakeholders, the grievances register is being placed at site and is being continuously monitored and addressed through the grievances cell on regular basis and maintained in a register at Orizon Valorização de Resíduos S.A. site office. The comments received have been described in the Monitoring report ^{/04/} along with the actions undertaken. The grievance register provided to verification team was also checked. It was found that during the current monitoring period, no comments/feedback were received from the local stakeholders.

Moreover, as part of an interview conducted with the representative of the project developer Mr. Vinicius Cavalcante Ferreira, it was confirmed that regular technical & non-technical trainings were conducted with employees and collaborators. Furthermore, it was also confirmed that salaries/compensations for employees and collaborators are in line with the industry standard.

In Summary, it is Applus+ Certification's opinion that the monitoring of the project owner regarding sustainability is in line with requirement of the GS4GG guideline.

5.12 Management and Operational System

The responsibilities of data measurement, collection, verifying, archiving etc. have been clearly defined in the registered GS4GG PDD ^{/02/} for the GS project activity. The specified procedures have been followed by the designated operational staff of the GS project activity, as confirmed by the Applus+ Certification's verification team during conducted interviews with representatives of Orizon Valorização de Resíduos S.A. The data related to ER calculation as well as data monitoring, collection process etc. have been internally reviewed by the management of the Monitoring team regularly. The responsibility of each function is consistent with the monitoring plan in the registered GS4GG PDD ^{/02/} for the GS project activity.

The information flow of each parameter has been verified by the assessment team via interviewing with responsible personnel.

It was verified during the onsite inspection, the monitoring procedure as well as the internal quality management and control procedures are stipulated in the registered GS4GG PDD ^{/02/} for the GS project activity. The monitoring personnel have been interviewed by the assessment team and it's confirmed that the monitoring is implemented as per the procedure. Also, the training record (Training register and attendance sheet) has been checked by the assessment team and it is confirmed that the monitoring personnel have got sufficient training to perform the monitoring.



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All the data and documents, either hard copies or soft copies, will be kept for two years after the end of the last crediting period or the last issuance of GS VERs for this Project, whichever occurs later.

6. SAFEGUARDS REPORTING ASSESSMENT

The Applus+ Certification's verification team has confirmed that, as outlined in both the registered GS4GG PDD ^{/02/} and the Monitoring Report ^{/04/}, the following Safeguarding Principles were identified as potentially relevant to the GS project activity:

Assessment Questions/Requirements	Applus+ Certification's verification team's assessment of the relevance of safeguarding principle and the proposed mitigation measures
6.1 Labour Rights	
1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions. 2. Workers shall be able to establish and join labour organizations. 3. Working agreements with all individual workers shall be documented and implemented and include: a) Working hours (must not exceed 48 hours per week on a regular basis), AND b) Duties and tasks, AND c) Remuneration (must include provision for payment of overtime), AND d) Modalities on health insurance, AND e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND	The Applus+ Certification's verification team has confirmed, based on its local knowledge and through assessment of related documentation and records, the appropriateness of the information presented in the registered GS4GG PDD ^{/02/} for the GS project activity regarding applicable Labour laws and how the project developer will comply with such laws and requirements along the project implementation and operation phases. As also appropriately outlined in the registered GS4GG PDD ^{/02/}, all direct employees of the GS project activity are protected by the Brazilian Federal set of labour regulations denominated Consolidation of Labour Laws (CLT) which represents the regulatory framework that regulates labour relations in Brazil. The principles and standards embodied in the International Labour Organization (ILO) fundamental conventions are also followed. It is imperative to note that, as a practice in Brazil, compliance with labor law and working conditions are subject to government regular inspection/surveillance. While the rights to establish and join labour organizations or unions are protected by Brazilian Labour Laws, the GS project activity has to fully respects the employees' rights (in accordance with all labour related laws endorsed in Brazil) as also appropriately outlined in the registered GS4GG PDD ^{/02/}. As also confirmed by the Applus+ Certification's verification team, in order to have the project developer Orizon Valorização de Resíduos S.A. meeting applicable related requirements from Brazilian Labour Law, working agreements between the company and individual workers employed by the GS project activity and by the Ecoparque Candeias landfill are documented and implemented, including working hours, duties and tasks, remuneration, modalities on health insurance, modalities on termination of contract, provision for annual leave, etc. Based on its local country expertise, the Applus+ Certification's verification team is able to confirm that the employment model applied by the project developer Orizon Valorização de Resíduos S.A. with

f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave. 4. No child labour is allowed (Exceptions for children working on their families' property requires an <u>Expert Stakeholder</u> opinion) 5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures	employees or the GS project activity is locally, nationally and culturally appropriate. It is also confirmed that Orizon Valorização de Resíduos S.A. does not employ and is not complicit in any form of child labour for the GS project activity, Ecoparque Candeias landfill and/or any other site or infrastructure operated by the company. As also confirmed by the Applus+ Certification's team, training sessions related to health, safety and working conditions have been regularly performed by employees/collaborators prior and during the operation of the GS project activity. As a conclusion, it is opinion of the Applus+ Certification's verification team that the health, safety and working conditions related measures proposed and incorporated by the project developer Orizon Valorização de Resíduos S.A. as part of the implementation and operation of the project activity are deemed sufficient to mitigate the risks associated to potential negative impact related to this safeguarding principle/requirement in question.
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7. VERIFICATION OPINION

It is the opinion of Applus+ Certification's verification team that reported GHG emission reductions for the GS4GG project activity "Ecoparque Candeias Landfill Gas Project" for the monitoring period from 29/09/2023 to 31/08/2025, as reported in the latest version of the Monitoring Report ^{/04/}, are calculated and reported without material misstatements and in a correct manner. Moreover, the Applus+ Certification's verification team has confirmed that all information presented in the latest version of the Monitoring Report ^{/04/} and all applied calculations for the determination of emission reductions achieved during the considered monitoring period are under full conformance with provisions and requirements of the registered GS4GG PDD ^{/02/}, monitoring and baseline methodology ACM0001 - 'Flaring or use of landfill gas' (version 19.0.0) ^{/06/} and all applicable methodological tools ^{/12/ /11/ /10/ /14/ /15/ /17/ /47/ /57/ /64/}.

The Applus+ Certification's verification team thus confirms the following regarding verified emission reductions:

Project title	Ecoparque Candeias Landfill Gas Project
GS4GG ref no.	GS12047
GS4GG PDD	Version 7.1, dated 22/07/2025
Monitoring Report	Version 2.0, dated 25/11/2025
Methodology used for verification:	ACM0001 (version 19.0.0)
Applicable monitoring period:	29/09/2023 to 31/08/2025 (first and last day included)
Achieved emission reductions:	1,341,274 tCO ₂ e

8. CERTIFICATION STATEMENT

LGAI Technological Center, S.A. (hereinafter referred to as "Applus+ Certification") was engaged by the project developer and project owner Orizon Valorização de Resíduos S.A. to perform the 3rd periodical verification of the GS project activity titled "Ecoparque Candeias Landfill Gas Project" for the monitoring period from 29/09/2023 to 31/08/2025.

The management of Orizon Valorização de Resíduos S.A. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions on the basis set out within the project's Monitoring Plan in the registered GS4GG PDD ^{/02/} for the GS project activity and the applied CDM methodology ACM0001 (version 19.0) ^{/06/} + applicable CDM methodological tool.

During the considered monitoring period, the project design encompassed solely collection and destruction (through combustion) of LFG under efficient and controlled conditions through flaring in high temperature enclosed flare at the Ecoparque Candeias landfill. As part of the operation of the GS project activity during the considered monitoring period, LFG has been combusted in the installed high temperature enclosed flare for the unique purposes of avoiding direct emissions of methane (CH₄) into the atmosphere (that would otherwise occur in the absence of the GS project activity (baseline scenario)) and for electricity generation utilizing LFG as gaseous fuel. No utilization of upgraded/purified LFG to external consumer(s) (through natural gas distribution network) has occurred during the considered monitoring period.

During the considered monitoring period, the GS project activity thus promoted permanent and real reduction of emissions of methane (CH₄) into the atmosphere (that would otherwise occur in the absence of the GS project activity).

As per the design of the GS project activity, the electricity demand of the GS project activity is to be met by consumption of grid-sourced electricity, by electricity generated in the installed backup off-grid generator (fueled by diesel) and/or by electricity sourced by the project's electricity generation infrastructure.

LFG (which is rich in CH₄) has been historically generated at the Ecoparque Candeias landfill as a result of the anaerobic decomposition of municipal solid waste (MSW) disposed in the site using appropriate MSW landfilling techniques and procedures.

The verification approach of Applus+ Certification was based on requirements/criteria as defined under the Kyoto Protocol ^{/63/}, Marrakesh accord ^{/08/}, as well as those defined by the CDM Executive Board and Gold Standard.

The approach by the Applus+ Certification's verification team is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. The verification can confirm that:

- the project is operated as planned and described in the registered GS4GG PDD ^{/02/} for the GS project activity;
- the monitoring plan is in accordance with the applied methodology;
- the monitoring activities presented in the Monitoring Report ^{/04/} are in accordance with the GS4GG PDD and the monitoring plan approved by GS4GG;
- the development and maintenance of records and reporting procedures are in accordance with the monitoring plan;

- the installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately (with few instances of delay for some equipment);
- the monitoring system is in place and generates GHG emission reductions data;
- the GHG emission reductions are calculated without material misstatements.

In Applus+ verification team opinion, the GHG emission reductions for "Ecoparque Candeias Landfill Gas Project" for the monitoring period 29/09/2023 to 31/08/2025 (Both days included) as reported in Monitoring Report ^{/04/}, prepared on the basis of the project's Monitoring Plan are fairly stated.

Based on the information we have seen and evaluated, we confirm the following statement:
Reporting period: 29/09/2023 to 31/08/2025 (Both days included) Verified emissions in the above reporting period:

Leakage emissions	0 tCO ₂ e equivalent
Project emissions	17 tCO ₂ e equivalent (rounded value)
Baseline emissions	1,341,291 tCO ₂ e equivalent (rounded value)
Emission reductions	1,341,274 tCO ₂ e equivalent

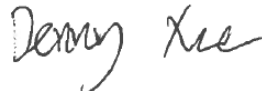
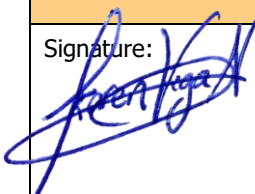
Date: 19/12/2025

Lead Auditor: Mr. Guilherme Horiuchi

Tech. Reviewer: Mr. Denny Xue

Approver (*Applus+ Certification VVB Technical Manager*)

Ms. Karen Elizabeth Vega Nonalaya

ASSESSMENT TEAM	
Lead Auditor: Mr. Guilherme Horiuchi	Technical Reviewer: Mr. Denny Xue
Signature: 	Signature: 
Approver: Ms. Karen Elizabeth Vega Nonalaya	
Signature: 	

9. **ABBREVIATIONS**

ABBREVIATIONS	
ACM	Approved Consolidated Methodology
AM	Approved Methodology
AMS	Approved Methodology Small Scale
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CL/CR	Clarification Request
CM	Combined Margin
CMP	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
CTR	Centro de Tratamiento de Resíduos (Waste Treatment Center)
DNA	CDM Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GS4GG (or GS)	Gold Standard for Global Goals
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-Governmental Organization
SDG	Sustainable Development Goal
TAC	Gold Standard Technical Advisory Committee
OM	Operational Margin
PDD	Project Design Document
PD	Project Developer
PRC	Post Registration Changes
UNFCCC	United Nations Framework Convention for Climate Change

VVB	Validation and Verification Body
VVS	Validation and Verification Standard

10. REFERENCES

LIST OF DOCUMENTS	
No.	Document/ Evidence/ Reference/ Web link, version, date
/01/	GS4GG Principles and Requirements (version 2.1) Available online: https://globalgoals.goldstandard.org/101-par-principles-requirements/
/02/	GS4GG PDD for the GS project activity for the GS4GG Project activity: "Ecoparque Candeias Landfill Gas Project" (version 7.1, dated 22/07/2025) GS Validation Report for the GS project activity "Ecoparque Candeias Landfill Gas Project" for the 2 nd crediting period under the GS4GG from 29/09/2023 to 28/09/2026) (version 4.0, dated 23/07/2025).
/03/	GS4GG GHG Emission Reduction & Sequestration Product Requirements Available online: https://globalgoals.goldstandard.org/501-pr-ghg-emissions-reductions-sequestration/
/04/	Monitoring Report for the GS project activity "Ecoparque Candeias Landfill Gas Project" – monitoring period from 29/09/2023 to 31/08/2025 (version 1.0 dated 01/11/2025 and version 2.0 dated 25/11/2025).
/05/	Emission reduction calculation spreadsheets for the GS project activity "Ecoparque Candeias Landfill Gas Project" – monitoring period from 29/09/2023 to 31/08/2025 (version 1.0 dated 01/11/2025 and version 2.0 dated 25/11/2025). Files name: "202309.xlsb" "202310.xlsb" "202311.xlsb" "202312.xlsb" "202401.xlsb" "202402.xlsb" "202403.xlsb" "202404.xlsb" "202405.xlsb" "202406.xlsb" "202407.xlsb" "202408.xlsb" "202409.xlsb" "202410.xlsb" "202411.xlsb"

	"202412.xlsb" "202501.xlsb" "202502.xlsb" "202503.xlsb" "202504.xlsb" "202505.xlsb" "202506.xlsb" "202507.xlsb" "202508.xlsb" ""MR3 GS - Ecoparque Candeias LFG Project - V.2.0.xls"
/06/	ACM0001 – "Flaring or use of landfill gas" (version 19.0.0) Available online: https://cdm.unfccc.int/methodologies/DB/JPYB4DYQUXQPZLBDVPHA87479EMY9M
/07/	GS4GG Activity Requirements: Renewable Energy Activity Requirements (version 1.4) Available online: https://globalgoals.goldstandard.org/202-ar-renewable-energy-activity-requirements/
/08/	Decision 3/CMP. 1 (Marrakesh – Accords) Available online: https://unfccc.int/cop7/documents/accords_draft.pdf
/09/	1996 IPCC Guidelines for National Greenhouse Gas Inventories: workbook; Available online: https://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html 2006 IPCC Guidelines for National Greenhouse Gas Inventories: workbook. Available online: https://www.ipcc-nggip.iges.or.jp/public/2006gl/
/10/	CDM methodological tool "Project emissions from flaring" (version 04.0) Available online: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-06-v3.0.pdf
/11/	CDM methodological tool "Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation" (version 03.0) Available online: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-05-v3.0.pdf
/12/	CDM methodological tool "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion" (version 03.0) Available online:

	https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-03-v2.pdf/history_view
/13/	CDM methodological tool "Emissions from solid waste disposal site" (version 08.0) Available online: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-04-v8.0.pdf
/14/	CDM methodological tool "Tool to determine the mass flow of a greenhouse gas in a gaseous stream" (version 03.0) Available online: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-08-v3.0.pdf
/15/	CDM methodological tool "Tool to calculate the emission factor for an electricity system" (version 07.0) Available online: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf
/16/	Monthly invoice receipts for consumption of grid-sourced electricity by the GS project activity for the periods from September/2023 to August/2025.
/17/	CDM methodological tool "Emissions from solid waste disposal sites" (version 08.1) Available online: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-04-v8.1.pdf/history_view
/18/	Alta Geotecnia Ambiental Ltda. Evaluation/declaration reports for the monitoring parameter "Management of SWDS", issued on 25/05/2023, 01/11/2023, 25/10/2024 and 04/09/2025.
/19/	Calibration certificate for the installed LFG flow meters: Certificate No. 12661/2022 for the Flow meter S/N 683688 issued by Hirsá Sistemas de Automação e Controle Ltda. on 07/11/2022. Certificate No. LMH 137/2025 for the Flow meter S/N 683688 issued by Hirsá Sistemas de Automação e Controle Ltda. on 24/07/2025. Certificate No. LMH 1779/2024 for the Flow meter S/N 683689 issued by Hirsá Sistemas de Automação e Controle Ltda. on 26/02/2024. Certificate No. 2103000243 1122 C7 for the Flow meter S/N 2103000243 issued by CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICOS LTDA. on 01/11/2022. Certificate No. 2103000243 0224 C7 for the Flow meter S/N 2103000243 issued by CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICOS LTDA. on 21/02/2024. Certificate No. 2108000299 1023 C7 for the Flow meter S/N 2108000299 issued by CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICOS LTDA. on 24/10/2023.

	Certificate No. 2103000244 0125 C7 for the Flow meter S/N 2103000244 issued by CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICOS LTDA. on 21/01/2025.
/20/	Calibration certificate for the installed continuous CH₄ fraction gas analyzer units: Certificate No. 2482-1/23 for the Gas analyzer unit S/N N1W3009 issued by Aselco Indústria Comércio Importação Exportação on 25/08/202 Certificate No. 2619-01/24 for the Gas analyzer unit S/N N1W3009 issued by Aselco Indústria Comércio Importação Exportação on 21/08/2024. Certificate No. ISO0273/2025 for the Gas analyzer unit S/N N1W3009 issued by ISOCELL Soluções em Análítica on 18/03/2025. Certificate No. ISO11459/2023 for the Gas analyzer unit S/N N1RO280 issued by ISOCELL Soluções em Análítica on 29/11/2023.
/21/	Calibration certificate for the installed continuous CH₄ and O₂ fraction gas analyzer units: Certificate No. 2482-1/2023 for the Gas analyzer unit S/N N1M6685 issued by Aselco Indústria Comércio Importação Exportação on 25/08/2023. Certificate No. ISO07298/2025 for the Gas analyzer unit S/N N1M6685 issued by ISOCELL Soluções em Análítica on 14/08/2025. Certificate No. 2619-03/2024 for the Gas analyzer unit S/N N1C7779 issued by Aselco Indústria Comércio Importação Exportação on 21/08/2025.
/22/	Calibration certificate for the installed temperature sensors: Certificate No. 9W3W1923 for the temperature sensor S/N N2035.748336 issued by Trescal Brasil Teclabor Servicos de Metrologia e Calibracao Ltda. on 18/01/2023. Certificate No. 14363/23 for the temperature sensor S/N N2321.306656 issued by ECIL Laboratório de Metrologia on 13/12/2023. Certificate No. Z08K1025 for the temperature sensor S/N N2321.306656 issued by Trescal Brasil Teclabor Servicos de Metrologia e Calibracao Ltda. on 20/06/2025. Certificate No. E60QWZ24 for the temperature sensor S/N N2321.306655 issued by Trescal Brasil Teclabor Servicos de Metrologia e Calibracao Ltda. on 31/07/2024.
/23/	Calibration certificate for the installed pressure sensor: Certificate No. 2022/04/691 for the pressure sensor S/N U658008 issued by SMAR Technology Company on 07/10/2022. Certificate No. P-8807/24 for the pressure sensor S/N U658008 issued by CTJ Tecnologia e Confiabilidade on 15/08/2024. Certificate No. P-9998/23 for the pressure sensor S/N U635935 issued by SMAR Technology Company on 10/10/2023. Certificate No. P-7530/25 for the pressure sensor S/N U635935 issued by CTJ Tecnologia e Confiabilidade on 13/06/2025.

/24/	Calibration certificate issued by the company "3C Services S.A." for the electricity meter used for measuring consumption of grid-sourced electricity and the electricity generated by the project activity. Certificate No. CAL005/2018. Calibration event date: 22/11/2018. Calibration certificate issued by the company "Metrum Equipamentos de Medição e Testes" for the electricity meter used for measuring consumption of grid-sourced electricity and the electricity generated by the project activity. Certificate No. CC-0046-24. Calibration event date: 06/03/2023.
/25/	Calibration certificate for the installed thermocouples: Certificate No. T-3051/23 for the thermocouple S/N N2010.963440 issued by CTJ Tecnologia e Contabilidade on 09/05/2023. Certificate No. T-7325/23 for the thermocouple S/N N2220014163 issued by CTJ Tecnologia e Contabilidade on 11/10/2023. Certificate No. 9127/24 for the thermocouple S/N N2418.336632 issued by ECIL Laboratório de Metrologia on 28/08/2024.
/26/	CO₂ emission factor for electricity generation in Brazil National Interconnected System, annual values. Available online: https://www.gov.br/mcti/pt-br/acompanhe-o-mcti/sirene/dados-e-ferramentas/fatores-de-emissao
/27/	CDM Project Standard for Programmes of Activities (CDM-PS-PoA), version 03.0 Available online: https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210921115735176/reg_stan03_v03.0.pdf
/28/	CDM Project Cycle Procedure for Programmes of Activities (CDM-PCP-PoA), version 03.0 Available online: https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210921110741000/pc_proc03_v03.0.pdf
/29/	CDM Guideline "Guideline – Application of materiality in verifications", (version 02.0) Available online: https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20150225171039008/iss_guid08.pdf
/30/	Internal service and maintenance logbook (with details about historical of interventions, service and instrument/equipment calibration and replacement) for the GS project activity "Ecoparque Candeias landfill has project" during the considered monitoring period.
/31/	GS4GG Monitoring Report Form (version 1.1)

	Available online: https://globalgoals.goldstandard.org/t-perfcert-monitoring-report/
/32/	GS4GG Audit techniques template Available online: https://globalgoals.goldstandard.org/t-vvb_audit-techniques/
/33/	Specification details for the flow meter unit manufactured by Fluid Components International, model ST51. Available online: https://www.fluidcomponents.com/assets/media/Manuals-Guides/Flow-Meters/ST51-Series/ST51-Guide-(06EN003389-).pdf
/34/	Specification details for the flow meter unit manufactured by CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICOS LTDA. Ind. Model FT1 Available online: https://www.CONTECH INDUSTRIA E COMERCIO DE EQUIPAMENTOS ELETRONICOS LTDA.ind.com.br/produtos/medidor-de-vazao/massico-termal-2/
/35/	Technical specification sheet for the continuous CH ₄ and O ₂ fraction gas analyzer units Gas Analyzer SIEMENS AG AG - ULTRAMAT 23 Available online: https://www.SIEMENS AG.com/global/en/products/automation/process-analytics/extraktive-continuous-process-gas-analytics/ultrammat-23.html
/36/	Specification sheet for the thermocouple manufactured by Elsi s.r.l. type S. http://www.elsi.it/en/products/thermocouple/ELSI_TC_M2_UK.pdf
/37/	Specification details for the temperature sensor unit manufactured by Ecil Produtos e Sistemas de Medição e Controle de Temperatura, model PT 100. Available online: https://ecil.com.br/pirometria-2/termorresistencias/
/38/	Specification details for the pressure sensor manufactured by SMAR Technology Company, model LD301. Available online: https://www.smar.com.br/pt/produto/ld301-hart-4-to-20-ma-transmissores-inteligentes-de-pressao
/39/	Technical specification sheet for the electricity meter manufactured by Schneider Electric Brazil model ION 8650. Available online: https://www.se.com/br/pt/product/M8650C0C0H6E1A0A/medidor-ion8650c-32mb-base-1-5a-65120vac-eth/
/40/	Technical specification sheet for the thermocouple manufactured by Inor Process AB model MIN-LAPQ.

	Available online: https://www.directindustry.com/pt/prod/inor-transmitter-gmbh/product-16911-2328931.html Technical specification sheet for the thermocouple manufactured by Ecil Produtos e Sistemas de Medição e Controle de Temperatura model Type S. Available online: https://ecil.com.br/pirometria-2/termopares/termopar-tipo-s/
/41/	Input data for the emission reduction calculation spreadsheet for the GS4GG project activity "Ecoparque Candeias Landfill Gas Project" – monitoring period from 29/09/2023 to 31/08/2025. Files name: "202309-raw data.xlsb" "202310-raw data.xlsb" "202311-raw data.xlsb" "202312-raw data.xlsb" "202401-raw data.xlsb" "202402-raw data.xlsb" "202403-raw data.xlsb" "202404-raw data.xlsb" "202405-raw data.xlsb" "202406-raw data.xlsb" "202407-raw data.xlsb" "202408-raw data.xlsb" "202409-raw data.xlsb" "202410-raw data.xlsb" "202411-raw data.xlsb" "202412-raw data.xlsb" "202501-raw data.xlsb" "202502-raw data.xlsb" "202503-raw data.xlsb" "202504-raw data.xlsb" "202505-raw data.xlsb" "202506-raw data.xlsb" "202507-raw data.xlsb" "202508-raw data.xlsb"
/42/	Comparative emission reduction calculation spreadsheet for the GS project activity "Ecoparque Candeias Landfill Gas Project" – monitoring period from 29/09/2023 to 31/08/2025. Created as

	part of the Data authenticity checking procedure performed during the conducted onsite inspection. Files name: "202309-comparative.xlsb" "202310-comparative.xlsb" "202311-comparative.xlsb" "202312-comparative.xlsb" "202401-comparative.xlsb" "202402-comparative.xlsb" "202403-comparative.xlsb" "202404-comparative.xlsb" "202405-comparative.xlsb" "202406-comparative.xlsb" "202407-comparative.xlsb" "202408-comparative.xlsb" "202409-comparative.xlsb" "202410-comparative.xlsb" "202411-comparative.xlsb" "202412-comparative.xlsb" "202501-comparative.xlsb" "202502-comparative.xlsb" "202503-comparative.xlsb" "202504-comparative.xlsb" "202505-comparative.xlsb" "202506-comparative.xlsb" "202507-comparative.xlsb" "202508-comparative.xlsb"
/43/	Blank version of the emission reduction calculation spreadsheet applied for the GS project activity "Ecoparque Candeias Landfill Gas Project" – monitoring period from 29/09/2023 to 31/08/2025. Files name: "202309-blank.xlsb" "202310-blank.xlsb" "202311-blank.xlsb" "202312-blank.xlsb" "202401-blank.xlsb" "202402-blank.xlsb"

	"202403-blank.xlsb" "202404-blank.xlsb" "202405-blank.xlsb" "202406-blank.xlsb" "202407-blank.xlsb" "202408-blank.xlsb" "202409-blank.xlsb" "202410-blank.xlsb" "202411-blank.xlsb" "202412-blank.xlsb" "202501-blank.xlsb" "202502-blank.xlsb" "202503-blank.xlsb" "202504-blank.xlsb" "202505-blank.xlsb" "202506-blank.xlsb" "202505-blank.xlsb" "202506-blank.xlsb" "202507-blank.xlsb" "202508-blank.xlsb"
/44/	EIA REPORT for the construction of the Ecoparque Candeias landfill. Dated July 2005.
/45/	Monitoring Report for the GS project activity "Ecoparque Candeias Landfill Gas Project" – 1st monitoring period from 01/01/2021 to 28/02/2023 (version 4.3, dated 02/07/2024). GS Verification Report for the GS project activity "Ecoparque Candeias Landfill Gas Project" for the 1st monitoring period from 01/01/2021 to 28/02/2023 (version 4, dated 08/07/2024). Monitoring Report for the GS project activity "Ecoparque Candeias Landfill Gas Project" – 2nd monitoring period from 01/03/2023 to 28/09/2023 (version 4.0, dated 02/06/2025). GS Verification Report for the GS project activity "Ecoparque Candeias Landfill Gas Project" for the 2nd monitoring period from 01/03/2023 to 28/09/2023 (version 4, dated 02/07/2025).
/46/	GS4GG Validation and Verification Standard (version 2.0) Available online: https://globalgoals.goldstandard.org/113-par-validation-and-verification-standard/
/47/	CDM methodological tool "Assessment of the validity of the original/current baseline and to update the baseline at the renewal of a crediting period" (version 03.0.1)

	Available online: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v1.pdf/history_view
/48/	List of all the employees from the project developer Orizon Valorização de Resíduos S.A. which are directly involved in the operation of the GS project activity during years 2023, 2024 and 2025.
/49/	UNFCCC/CDM-EB: Monitoring Report Form (CDM-MR-FORM). Version 09.0. Dated 08/10/2021. Available online: https://cdm.unfccc.int/Reference/new_reg.html
/50/	Specification sheet for the installed GE Jenbacher engine-generator set model J420.
/51/	Declaration from the manufacturer of flare 1 "Biotecnogas s.r.l." indicating the operational ranges for LFG flow sent to the flares and temperature of the exhaust gases in order to ensure high efficiency combustion of LFG.
/52/	Orizon Valorização de Resíduos S.A.: "Relatório anual de Sustentabilidade" (Annual Sustainability Report) years 2023 and 2024 Available online: https://ri.orizonvr.com.br/sustentabilidade/relatorio-anual-de-sustentabilidade/
/53/	Specification sheet for the installed electricity meter model ION 8650, manufactured by Schneider Electric, used to measure consumption of grid-sourced electricity and electricity generation by the project activity. Available online: https://www.se.com/br/pt/product-range/61053-ion8650/
/54/	2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories Available online: https://www.ipcc-nggip.iges.or.jp/public/2019rf/index.html
/55/	SDG Impact Tool for the GS project activity "Ecoparque Candeias landfill gas project".
/56/	CDM Validation and Verification Standard for project activities (CDM-VVS-PA) (version 03.0), dated 09/09/2021. Available online: https://cdm.unfccc.int/Reference/Standards/index.html
/57/	CDM methodological tool "Determining the baseline efficiency of thermal or electric energy generation systems" (version 03.0) Available online: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-09-v3.0.pdf/history_view
/58/	Technical specification sheet for the UV flame detector manufactured by Honeywell Analytics Ltd. model C7061A Dynamic Self check Ultraviolet flame detector. Available online: https://process.honeywell.com/us/en/products/thermal-solutions/burner-management-systems/flame-detectors/c7061a-f

/59/	Input raw-data generated for checking emission reduction calculation spreadsheet for the GS4GG project activity "Ecoparque Candeias Landfill Gas Project" – monitoring period from 29/09/2023 to 31/08/2025. Files name: "202309-for checking.xlsb" "202310-for checking.xlsb" "202311-for checking.xlsb" "202312-for checking.xlsb" "202401-for checking.xlsb" "202402-for checking.xlsb" "202403-for checking.xlsb" "202404-for checking.xlsb" "202405-for checking.xlsb" "202406-for checking.xlsb" "202407-for checking.xlsb" "202408-for checking.xlsb" "202409-for checking.xlsb" "202410-for checking.xlsb" "202411-for checking.xlsb" "202412-for checking.xlsb" "202501-for checking.xlsb" "202502-for checking.xlsb" "202503-for checking.xlsb" "202504-for checking.xlsb" "202505-for checking.xlsb" "202506-for checking.xlsb" "202507-for checking.xlsb" "202508-for checking.xlsb"
/60/	Electric Energy Trading Chamber (in Portuguese language "Câmara de Comercialização de Energia Elétrica" - CCEE): Monthly reports dated: From September 2023 to August 2025.
/61/	Sample of vacancy announcement posted in January/2024 for a position at the operation of the Ecoparque Candeias landfill.
/62/	SDG Impact Tool for the GS project activity "Ecoparque Candeias landfill gas project" valid for the considered monitoring period from 29/09/2023 to 31/08/2025.
/63/	Kyoto Protocol to the United Nations Framework Convention on Climate Change

	Available online: https://unfccc.int/resource/docs/convkp/kpeng.pdf
/64/	CDM methodological tool "Combined tool to identify the baseline scenario and demonstrate additionality" (version 7.0) Available online: https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-02-v2.2.pdf/history_view
/65/	Monitoring Report for the CDM project activity "CTR Candeias Landfill Gas Project" – 1st monitoring period from 29/09/2011 to 31/12/2013 (version 1, dated 26/02/2014). CDM Verification Report for the CDM project activity "CTR Candeias Landfill Gas Project" for the 1st monitoring period from 29/09/2011 to 31/12/2013 (version 0, dated 26/06/2014). Monitoring Report for the CDM project activity "CTR Candeias Landfill Gas Project" – 2nd monitoring period from 01/01/2014 to 31/12/2014 (version 1, dated 12/02/2015). CDM Verification Report for the CDM project activity "CTR Candeias Landfill Gas Project" for the 2nd monitoring period from 01/01/2014 to 31/12/2014 (version 1, dated 23/03/2015). Monitoring Report for the CDM project activity "CTR Candeias Landfill Gas Project" – 3rd monitoring period from 01/01/2015 to 31/12/2015 (version 1, dated 05/02/2016). CDM Verification Report for the CDM project activity "CTR Candeias Landfill Gas Project" for the 3rd monitoring period from 01/01/2015 to 31/12/2015 (version 1.0, dated 12/07/2016). Monitoring Report for the CDM project activity "CTR Candeias Landfill Gas Project" – 4th monitoring period from 01/01/2016 to 31/08/2016 (version 1, dated 06/09/2016). CDM Verification Report for the CDM project activity "CTR Candeias Landfill Gas Project" for the 4th monitoring period from 01/01/2016 to 31/08/2016 (version 1.0, dated 19/12/2016). Monitoring Report for the CDM project activity "CTR Candeias Landfill Gas Project" – 5th monitoring period from 01/09/2016 to 28/09/2018 (version 01, dated 30/01/2019). CDM Verification Report for the CDM project activity "CTR Candeias Landfill Gas Project" for the 5th monitoring period from 01/09/2016 to 28/09/2018 (version 1, dated 03/09/2019). Monitoring Report for the CDM project activity "CTR Candeias Landfill Gas Project" – 6th monitoring period from 29/09/2018 to 02/03/2020 (version 4, dated 07/05/2021). CDM Verification Report for the CDM project activity "CTR Candeias Landfill Gas Project" for the 6th monitoring period from 29/09/2018 to 02/03/2020 (version 1, dated 10/05/2021).

	Monitoring Report for the CDM project activity "CTR Candeias Landfill Gas Project" – 7th monitoring period from 03/03/2020 to 31/12/2020 (version 4, dated 07/05/2021). CDM Verification Report for the CDM project activity "CTR Candeias Landfill Gas Project" for the 7th monitoring period from 03/03/2020 to 31/12/2020 (version 1, dated 10/05/2021).
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Appendix 1: Corrective Action Requests / Clarification Request / Forward Action Request resolution table

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

FAR ID		Date: 19/05/2023
Description of FAR		
The project developer should include a declaration in the Monitoring Reports submitted to the GS4GG that the project will not issue both CERs/other compliance units under the Paris Agreement and a GSVER for the same vintage. Moreover, the project developer should agree to comply with all future UNFCCC COP/CMP decisions including adjustment of GWP values.		
Project developer response		Date: 25/11/2025
As a response to the raised FAR, a declaration confirming that the project will not issue both CERs/other compliance units under the Paris Agreement and a GSVER for the same vintage (for the considered and also for future monitoring periods within the GS4GG) was included in Appendix 1 of the Monitoring Report.		
Documentation provided by project developer		
-		
DOE assessment		Date: 04/12/2025
The Applus+ Certification's verification team confirmed that the declaration included in Appendix 1 of the Monitoring Report sufficiently addresses the raised FAR for the considered monitoring period.		

Table 2. CAR from this verification

CAR ID	1	Date: 18/11/2025
Description of CAR		
The initial version of the Monitoring Report presents incorrect or incomplete technical specifications/calibration information for the following monitoring instruments/equipment: - LFG flow meters - thermocouples - gas analyzer units		
Project participant response		Date: 25/11/2025
As a response to the raised CAR, details about selected monitoring instruments/equipment (LFG flow meters, thermocouples, gas analyzer units and electricity meter) were corrected/completed in Section D.2. of the revised version of the Monitoring Report.		
Documentation provided by project participant		
-		
DOE assessment		Date: 04/12/2025
The Applus+ Certification's verification team confirmed that related corrections made in the revised version of the Monitoring Report sufficiently address the raised CAR. This CAR is thus closed.		

Table 3. CAR from this verification

CAR ID	2	Date: 18/11/2025
Description of CAR		
Section D.2 of the Monitoring Report presents incorrect/incomplete information regarding the ex-post monitored parameter "Management of SWDS".		
Project participant response		Date: 25/11/2025

As a response to the raised CAR, Section D.2 of the Monitoring Report was corrected accordingly.

Documentation provided by project participant

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DOE assessment

Date: 04/12/2025

The Applus+ Certification's verification team confirmed that related corrections made in the revised version of the Monitoring Report sufficiently address the raised CAR. This CAR is thus closed.

Table 4. CAR from this verification

CAR ID	3	Date: 18/11/2025
Description of CAR		
Table 1 of the Monitoring Report presents incorrect/incomplete information regarding the Sustainable contributions achieved, moreover, Table 2 also presents incorrect/incomplete information regarding Product vintages.		
Project participant response		Date: 25/11/2025
As a response to the raised CAR, Tables 1 and 2 of the Monitoring Report were corrected accordingly.		
Documentation provided by project participant		
-		
DOE assessment		Date: 04/12/2025
The Applus+ Certification's verification team confirmed that related corrections made in the revised version of the Monitoring Report sufficiently address the raised CAR. This CAR is thus closed.		

Table 5. CAR from this verification

CAR ID	4	Date: 18/11/2025
Description of CAR		
While the Applus+ Certification's verification team has confirmed, during the conducted on-site visit, that a new infrastructure for promoting upgrade of LFG and supply/export of biomethane was under commissioning/testing phase during the considered monitoring period, the Monitoring Report does not make any references to such infrastructure.		
Project participant response		Date: 25/11/2025
As a response to the raised CAR, Section B.1 of the Monitoring Report was revised by including a brief explanation about the new LFG upgrade infrastructure which is being implemented at the Ecoparque Candeias landfill but that will not be a part of the GS project activity.		
Documentation provided by project participant		
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DOE assessment		Date: 04/12/2025

The Applus+ Certification's verification team confirmed that related corrections made in the revised version of the Monitoring Report sufficiently address the raised CAR. This CAR is thus closed.

Table 6. CAR from this verification

CAR ID	5	Date: 24/12/2025
Description of CAR		
Section D.2 of the Monitoring Report presents incorrect/incomplete information regarding the operation period of the measurement instruments of the ex-post monitoring parameters Volumetric fraction of component i in the residual gas on a dry basis in the minute m ($v_{i,RG,m}$) and Volumetric fraction of CH_4 in the collected LFG in time interval t on a dry basis for j (where j is the LFG delivery pipeline to the flare and/or to each engine-generator set). ($v_{CH_4,t,db,j}$). Moreover, Section D.2 of the monitoring Report also presents incorrect/incomplete information between the operation period and the calibration validity of the measurement instrument for measuring the Temperature in the exhaust gas of the enclosed flare in minute m ($T_{EG,m}$).		
Project participant response		Date: 25/12/2025
As a response to the raised CAR, Section D.2 of the Monitoring Report was revised by including correct information and also applying the discount factor for the identified delay in the calibration of the thermocouple.		
Documentation provided by project participant		
-		
DOE assessment		Date: 25/12/2025
The Applus+ Certification's verification team confirmed that related corrections made in the revised version of the Monitoring Report and the emission reductions spreadsheet sufficiently address the raised CAR. This CAR is thus closed.		

Appendix 2: Verification Team CVs

Name	Short CV. Background Information
Mr. Guilherme Horiuchi	Mr. Guilherme Horiuchi (Bachelor's Degree in Environmental Engineering) has worked with GHG projects in Latin and Central America since 2011. Member of the UNFCCC Roster of Experts and Certified GHG Auditor with practical experience in verification and validation activities within waste and renewable energy sectors. Specialized in applying CDM/VCS/GS4GG/IPCC Guidelines, GHG Protocol and ISO 14064 standards to conduct accurate, independent assessments of GHG inventories, landfill gas utilization/destruction and renewable energy initiatives. Mr. Guilherme Horiuchi is based in Curitiba, Brazil. Mr. Guilherme Horiuchi is based in Curitiba, Brazil. Mr. Guilherme Horiuchi may participate in the project assessment as Lead Auditor.
Mr. Denny Xue	Mr. Denny Xue (master's degree in environmental engineering, Bachelor's Degree in Thermal Engineering) is a GHG auditor appointed by Applus+ Certification for performing GHG project assessments, auditing and technical reviews. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and technical review with Applus+ Certification. Before he joined Applus+ LGAI, he worked for Shanghai Chuanji Investment and Management which is a CDM consultancy company as a project manager for CDM project development. Mr. Denny Xue is based in Shanghai, China. Mr. Denny Xue participates in the project's technical review team.