

Gap Validation report form for GS4GG project activities

(Gold Standard for the Global Goals)

BASIC INFORMATION		
Title and GS reference number of the PA	CTL Landfill Gas Project GS ref. no. – GS12062	
Version number of the validation report	2.0	
Completion date of the validation report	29/01/2024	
Version number of PDD to which this report applies	Version – 5 Dated- 27/01/2024	
Project Participants	EcoUrbis Ambiental S.A	
Host Parties	Brazil	
Applied methodologies and standardized baselines for the PA	ACM0001 – version 19.0 – Flaring or use of landfill gas	
Sectoral scopes for the PA (Indicate mandatory and conditional sectoral scopes)	Sectoral Scope 13 & 1	
Activity requirements applied	☐ Community Services Activities ☒ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A	
Product requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A	
Sustainable Development Goals Targeted / SDG Impact	Estimated in PDD for the CP	Units or products
SDG 13 (Climate action) / 13.2 emission reductions achieved	1,203,298	tCO2e/y
SDG 4 (Quality Education) / Number of people from local community attending company's socioenvironmental activities events. Based on monthly attendance list	1	Participants

and/or monthly activities reports		
SDG 5 (Gender equality) Quantity of women in managerial positions	1	Women in leadership and decision-making positions
SDG 7 (Affordable and Clean Energy) / 7.2 – Amount of electricity generated using LFG by the project activity in year y	35,369	MWh/y
SDG 7 (Affordable and Clean Energy) / Amount of LFG selling to costumers through dedicated pipeline	57,537,579	m ³ /y
SDG 8 (Decent Work and Economic Growth) - Total jobs generated as a result of the project	1	Jobs/y
Name of the Gold Standard approved auditor VVB	Lead auditor – Marcelo Sebben VVB - Earthood Services Private Limited	
Name, position and signature of the approver of the validation report	 Managing Director Dr. Kaviraj Singh	

SECTION A. Executive summary

The project activity consists in capturing methane resulted from the decomposition of organic waste in CTL Ecourbis Landfill which is then flared, distributed to consumers through a pipeline or used to generate electricity (this last stage is not yet implemented). It uses a collecting system composed by horizontal trenches which is diverted to a distribution system through pipelines or to three high efficiency enclosed flare unit to burn the LFG, so reducing the greenhouse gas emissions previously emitted into the atmosphere.

The LFG collection, distribution system and flaring system installed at CTL Ecourbis Landfill are located at Av. Sapopemba, 22,254 – km 32, São Paulo (city), São Paulo (State), Brazil – 23° 37' 52.17" S and Longitude: 46° 25' 30.29" W).

Scope of Validation

EcoUrbis Ambiental S.A. has contracted ESPL to perform gap validation of the project from CDM to GS4GG. The project is currently registered under CDM and is now seeking registration under GS. The scope of validation is to assess the claims and assumptions made in the project design document (PDD) against the GS4GG Principles and Requirements version 1.2, UNFCCC criteria, including but not limited to, CDM PS, CDM VVS, applied methodology and other relevant rules and requirements established for CDM project activities.

Validation Process and Methodology

The validation process is undertaken by a competent validation team and involves the following:

- A desk review of documents and evidences submitted by the project participant in context to GS for GS criteria along with CDM rules and guidelines issues by CDM EB,
- Conducting site visit, interview and interactions with representatives of the project participant during on-site inspection and phone calls,
- Reporting audit findings w.r.t to clarifications and non-conformity and closure of the findings as appropriate and
- Preparing a draft validation opinion based on the auditing findings and conclusions
- Technical review of the draft validation opinions along with other documents as appropriate by an independent competent technical review team
- Finalization of the validation opinion (this report)
- An independent technical review team reviews the validation report made by the validation team. Once the final report is accepted by the Technical Reviewer, the report is then approved by Earthood Services private Limited which is then further processed according to the GS and CDM procedures.

Conclusion

ESPL has performed the gap validation in GS4GG requirements of the PA "CTL Landfill Gas Project", with GS Ref. Number 12062. The validation team has confirmed the implementation of the project as per description in the PDD, the monitoring plan of the PDD and the application of the monitoring methodology (ACM0001 – version 19.0).

In addition, it was confirmed that the monitoring system is in place and the estimated emission reductions is reliable.

The validation team concluded that PA complies with all relevant GS4GG procedures/standards/guidance and, therefore, the Design Certification and Performance Certification is being submitted in accordance with the GS4GG procedures.

SECTION B. Validation team, technical reviewer and approver

B.1. Validation team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g., name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection*	Interviews*	Validation findings
1.	Team Leader	OR	Sebben	Marcelo	Verifit	Y	Y	Y	Y
2.	Validator	OR	Kamimura	Camila	Verifit	Y	N	N	Y
3.	Technical Expert (TA 1.1 and 13.1)	OR	Sebben	Marcelo	Verifit	Y	Y	Y	Y
4.	Methodology Expert	OR	Sebben	Marcelo	Verifit	Y	Y	Y	Y
5.	Local Expert	OR	Sebben	Marcelo	Verifit	Y	Y	Y	Y

B.2. Technical reviewer and approver of the validation report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g., name of central or other office of VVB or outsourced entity)
1.	Technical reviewer	IR	Garg	Shreya	Central Office
2.	TE to TR (TA 1.1 and 13.1)	IR	Singh	Kaviraj	Central Office
3.	Approver	IR	Singh	Kaviraj	Central Office

SECTION C. Means of validation

C.1. Desk/document review

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

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

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

C.2. On-site inspection

Duration of on-site inspection: 06/06/2023				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening Meeting: introduction, scope and objective of work, roles and responsibilities of audit team, resources required, and timetable of the onsite audit including venue for closing meeting and any concerns from PP	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
2.	Project Activity (technology, location, implementation, changes)	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
3.	Physical inspection of the project activity: Site visit and interview of monitoring personnel - Walk around landfill area - Residues entrance - Biogas capture - Biogas treatment - Flare station - Electricity generation (if applicable) - Maintenance log book	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
4.	Monitoring plan (feasibility of monitoring arrangements described in PDD, QA/QC procedures, responsibility of implementation of monitoring plan, data recording & storage procedures)	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben

5.	Extraction of Raw data from landfill, electricity generation (if applicable) and LFG sold to costumers	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
6.	Transition to GS Interviews to HR regarding safeguarding principles and applied SDGs Assessment regarding gender sensitive requirements	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
7.	Interviews to Stakeholders 1. Carlos Eduardo Pereira de Sousa (resident of neighbourhood and Community leader)	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
8.	Review of ER calculations in accordance with applied methodology and relevant tools	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
9.	Verification checklist: compliance of monitoring procedures followed at project site with registered PDD and monitoring methodology.	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
10.	GS4GG Transition Checklist	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
11.	Compilation of the audit findings and delivery of Draft validation report.	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben
12.	Closing Meeting: submission of the audit findings to the client and agreement on the issues raised and agreement on timelines	CTL Ecourbis Landfill – Biogas Plant	06/06/2023	Marcelo Sebben

C.3. Interviews

C.3.1. Interviews with PP:

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			

1.	Sprovieri	João	BENG – Consultancy	06/06/2023	Site visit Monitoring plan, Monitoring frequency, ER calculation	Marcelo Sebben
2.	Raimundo	Marcia	O&M Management CRE	06/06/2023	Operation of Biogas Plant, Site visit, installed technology, monitoring plan	Marcelo Sebben
3.	Ferreira	Ludmila	O&M Management CRE	06/06/2023	Operation of Biogas Plant, Site visit, installed technology, monitoring plan	Marcelo Sebben
4.	Sousa	Marcelio	CRE Operator	06/06/2023	Site visit Operation and maintenance of Biogas plant	Marcelo Sebben
5.	Santaella	Maysa Fernandes	Environmental and Social Assistant	06/06/2023	Environmental and social projects Local Stakeholder consultation Safeguarding principles Gender sensitive aspects Human resources	Marcelo Sebben
6.	Pereira de Sousa	Carlos* Eduardo	Neighbour of Project activity (3a Divisão Neighbourhood)	06/06/2023	Aspects related to impact of Landfill in community,	Marcelo Sebben

The interviews were conducted at on-site, with exception of Mr. Carlos Eduardo, which has been interviewed by phone.

C.3.2. Type of questions asked by the team members:

(a) To Project developers

- Project Implementation status, Location and Technology
- Monitoring Plan (Monitoring Schedule and Data management)
- SDG Contribution and ER calculation
- Sampling Plan
- Social and Environmental aspects of the project activity

- Safeguarding principles and gender sensitive aspects

(b) To the local stakeholders*:

- Do you live close to the project activity? Live closed to the PA (3a Divisão neighbourhood).
- Are you aware about the project activity? He has received an invitation for meeting the project activity.
- Do you find the project beneficial? Initially himself and the community did not accept the implemetation of the landfill in the community as it caused a great impact. However, the company has demonstrated transparency and openness to conversation with community, thorough their dedicated channels.
- Does the project have any postive impact on the environment? The mentioned that the company has recovered the nearby roads of the community, organize site visits to schools, community or other entities
- Does it have any negative impact? Increase of trucks traffic in the nearby community.
- Do you know any social programs related to the Project: No
- Do you know about any programs occurring in surrounding schools? No.
- Do you have any comment regarding the project activity? He mentioned that he would like to have the project activity more disclosed to the community.

C.4. Sampling Approach

No sampling plan was applied by the VVB. As VVB could validate all the details of the project through the interview of the PP representatives and evidence related to project as mentioned in detail under section C.3 of this report.

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

Areas of Validation/Verification findings	No. of CL	No. of CAR	No. of FAR
General description of project activity	CL 01 CL 02 CL 06	-	-
Eligibility Criteria	CL 03	CAR 01	-
Application and selection of methodologies and standardized baselines	-	-	-
Demonstration of additionality	-	-	-
Estimation of emission reductions or net anthropogenic removals or SDG outcomes	-	-	-
Start date, crediting period type and duration	CL 04	-	-
Safeguarding Principles	CL 05	-	-
Stakeholders' consultation requirements	-	-	-
Compliance of the project implementation and operation with the registered PDD	-	-	-
Others (please specify)(evidences)	-	-	-
Total	06	01	-

SECTION D. Validation findings

D.1. General description of project activity

Means of validation	The project activity consists in capturing and use the biogas resulted from the decomposition of organic waste in CTL Ecourbis Landfill. The uses of biogas can be combusting it into a flare, supplying it to consumers through a dedicated pipeline or generated electricity. The project activity uses a collecting system composed by horizontal trenches, a high efficiency enclosed flare unit to burn the LFG and a dedicated pipeline system to distribute it to consumers and by this is reducing the greenhouse gas emissions previously emitted into the atmosphere. The electricity generation stage is still not implemented. The main equipment used at the project activity is given below: 1. 03 enclosed flare with burning controlled system John Zinc , model Zule 13'x60' – Serials # 9130943, 9130943 (two equals) and BF - 9173240; 2. 03 blowers Huston Service Industries, Inc – model 12604- – Serial #s 0612311-34764, 0612312-34764 and 0612313-34764; 3. Thermal flow meters; 4. Residual gas analysers 5. Thermocouples 6. Electricity meter For details in the measurement equipment, refer to section E.5.2 below. The project qualifies the eligibility criteria for Gold Standard. The project is located at site CTL Ecourbis, in São Paulo/SP – Brazil, with geographical coordinates 23° 37' 52.17" S and Longitude: 46° 25' 30.29" W. The co-ordinates of the location of the site were appropriately included in the PDD. The location has also been confirmed through website Google Maps^{/08/}. The validation team confirmed the implementation status of the project activity through photographic and documentary evidence^{/12/} along with the data from data loggers and is deemed sufficient for monitoring of emission reductions. It is therefore, confirmed that the project is installed and in operation since 01/04/2013, which is the start date of the 1st crediting period under original program (CDM). The summary of the proposed project and the technology involved are described in the Transition form^{/06/}, which is in accordance with latest valid version of PDD^{/13/} with sufficient details and clarity. The accuracy of the project description was determined based on the on-site inspection as part of validation/verification audit, review of supporting documents (as mentioned in Appendix 3), and interaction with the key personnel as listed under section C.3 of this report. The project activity consists in two phases: 1. Phase 1: the landfill gas collection is performed by horizontal collecting system connected to a centralized blower system by collecting and transmission pipeline. The destruction of the methane is done by enclosed flare or supplied to consumers through a dedicated pipeline. This
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	phase has been implemented and it is operational. The validation team has interviewed the employees and visited the installations to confirm this information.; 2. Phase 2: although planned, electricity generation from biogas has not started to date. The baseline scenarios have been found in accordance to the applied methodology ACM0001 V.19.0. No assessment of baseline scenario has been taken place in this transition. This assessment will be carried out at the Crediting period renewal process as applicable. The baseline scenario comprehends: 1. For the landfill gas, the baseline scenario is the LFG that would be released to atmosphere or destructed in drained wells by passive venting to address safety and odour concerns. 2. For the electricity generation, in the absence of the project activity, the electricity would be generated in the grid by a mix of sources (including fossil fuels plants which composes of Brazilian Interconnected Electrical System – SIN) 3. For the supply of LFG through dedicated pipeline, the baseline scenario would be that the end-user would be supplied by natural gas. The baseline scenario is in accordance with applied methodology and information could be duly confirmed in the on-site inspection. The project is expected to deliver the following estimated sustainable development contributions:		
	SDGs	SDG impact	Estimated Annual Average
	13- Climate action	13.2	1,203,298 ¹
	4 Quality Education	4.7 – Number of people from local community attending company's socioenvironmental activities events. Based on monthly attendance list and/or monthly activities reports	1
	7 Affordable and clean energy	Amount of electricity generated using LFG by the project	29,329
			Participants
			MWh/y

¹ Average annual value along the crediting period.

		activity in year y		
		Amount of methane selling to costumers through dedicated pipeline	57,537,579	m ³ /y
	SDG 8 – Decent Work and Economic Growth	Total jobs generated as a result of the project	At least one job in the determined year	Jobs
Nevertheless, some issues were found in the transition request form and therefore CLs have been raised.				
Findings	CL 01; CL 02; CL 06			
Conclusion	The project activity is being transitioning from CDM in accordance with GS4GG requirements. The sustainable development goals and their outcome is transparently discussed under section B.6 of the Transition Request Form^{/03/}. The assessment team has checked and reviewed the PDD with supportive evidence and found the details to be correct. The project has been registered under CDM and is now seeking the registration under GS4GG. The validation team looked out for the signs of any ODA that project might have received but did not find anything in this regard. Therefore, it can be confirmed that proposed PA did not receive any ODA. Additionally, a declaration ^{/26/} in this regard was obtained from PP. The PP has applied methodologies ACM0001 V.19.0. No sampling has been conducted during the validation process. The proposed GS project activity is not a CPA that has been excluded from a registered PoA as a result of erroneous inclusion of CPAs and did not find anything to contradict the same. The validation team confirms; (a) The process undertaken to validate the accuracy and completeness of the project is described above (under MoV); (b) The project description contained in the PDD/4/ of the proposed GS project activity is accurate and complete; The on-site inspection was conducted by the validation team as described in this report. The validation team confirms that the proposed GS project activity meets the eligibility criteria for large-scale project activities. Moreover, the validation team confirms that the description of the proposed GS project activity, as contained in the PDD^{/10/} sufficiently covers all relevant elements, is accurate and complete and that it provides the reader with a clear understanding of the nature of the proposed GS project activity.			

	Moreover, • The team could confirm that all physical features (technology, project equipment, and monitoring and metering equipment) of the registered CDM project activity are in place and that the project participants have operated the project activity as per the revised approved PDD during the concerned monitoring period. • There are no actual or proposed deviations or changes in the implementation of the registered project activity. • The project activity has been divided in two implementation phases at the PDD: ◦ Phase 1: the landfill gas collection is performed by horizontal collecting system connected to a centralized blower system by collecting and transmission pipeline. The destruction of the methane is done by enclosed flare or supplied to consumers through a dedicated pipeline. This phase has been implemented and it is operational. The validation team has interviewed the employees and visited the installations to confirm this information.; ◦ Phase 2: although planned, electricity generation from biogas has not started to date. • The validation team confirms that the project boundary/Area does not overlap with another GS or other voluntary compliance standard programme of similar nature. Information has been confirmed through interviews and on-site inspection.
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D.2. Eligibility criteria

D.2.1. Eligibility Check for Transition

Means validation of	Each eligibility criterion has been assessed in accordance with GS requirements. They are as follows:	
	<u>Criterion</u>	<u>Assessment</u>
	(a) The project must have a crediting period start date with CDM/other standard on or after 01 January 2016	The project activity has its crediting period starting on 01/04/2020 on CDM i.e. after 01/01/2016 as per UNFCCC webpage ^{/29/} . Therefore this condition is fulfilled.
	(b) The project that has a crediting period start date with CDM/other standard before 01 January 2016 shall demonstrate the risk of discontinuation without carbon revenue.	The project activity has its crediting period starting on 01/04/2020 on CDM i.e. after 01/01/2016 as per UNFCCC webpage ^{/29/} . Therefore this condition is Not applied
	(c) The project that has a crediting period start date with CDM/other standard before 01 January 2016 shall demonstrate how the project has been operational in the absence of carbon revenue, if carbon credits	The project activity has its crediting period starting on 01/04/2020 on CDM i.e. after 01/01/2016 as per UNFCCC webpage ^{/29/} . Therefore this condition is Not applied

	have not been issued to the project in recent years.	
Findings	-	
Conclusion	The validation team confirms that the PA meets all the Transition eligibility criteria of the GS4GG as per section TRF 1 Eligibility Check for Transition from Transition Request form	

D.2.2. General eligibility criteria

Means of validation	Each eligibility criterion has been assessed in accordance with GS requirements.	
	They are as follows:	
	<u>Criterion</u>	<u>Assessment</u>
	(a) <u>Types of Project</u> : eligible projects shall include physical action/implementation on the ground. Pre-identified eligible project types are identified in the Eligibility Principles and Requirements section.	The project is a Waste management and handling project that deliver energy or a usable product with sustainable development benefits such as composting, biogas etc. The PDD foresees the implementation of electricity generation with biogas. Therefore, the project is in compliance with Renewable Energy Activity Requirements which states that <i>"Methane recovery project activities shall be eligible for emission reductions from both methane avoidance (including from the flared biogas fraction) and non-renewable fuel substitution as long as evidence is provided on time for validation to demonstrate that the system was designed in a way to at least make use of some of the biogas recovered for the delivery of energy services"</i> Therefore, evidences have been checked during the site visit, such as project description and interviews to the project developer, which demonstrated that the system was designed in a way to at least make use of some of the biogas recovered for the delivery of energy services (e.g., electricity, heat), the criteria is fulfilled by the PA.
	(b) <u>Location of Project</u> : projects may be located in any part of the world.	The project is located in São Paulo, Brazil and therefore eligible. Therefore, the criteria is fulfilled by the PA. Environmental license has been taken as evidence ^{19/}
	(c) <u>Project Area, Project Boundary and Scale</u> : the Project Area and Project Boundary shall be defined.	The project activity (Biogas plant) is located inside the Ecourbis Landfill, in São Paulo/SP, Brazil. The boundary comprehends:

	Projects may be developed at any scale although certain rules, requirements and limitations may apply under specific Activity Requirements, Impact Quantification Methodologies and Products Requirements. In order to avoid double counting the Project shall not be included in any other voluntary or compliance standards programme unless approved by Gold Standard (for example through dual certification). Also, if the Project Area overlaps with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature, the project shall demonstrate that there is no double counting of impacts at design and performance certification (for example use of similar technology or practices through which the potential arises for double counting or misestimation of impacts amongst projects).	- the site where the LFG is captured (Ecoumbis Landfill) - the site where the LFG is flared/used consists of the collection system, biogas upgrading facility, gas station facilities (including flaring) - Captive power plant(s) (including emergency diesel generators) and power generation sources connected to the grid, which is displaced by electricity generated by captured LFG in the project activity (when installed) - All the power generation sources connected to the Brazilian National Grid once electricity from the grid will be consumed by the LFG plant Project description and site visit were used as evidence. Project corresponds to a large scale project activity. A declaration from Project developers that the project will not claim VERs/CERs from the same vintage from GS and CDM have been provided^{/26-1/} It is confirmed that the method of avoiding double counting is reasonable. Finally, it is confirmed that the project is located in an area where there is no other Gold Standard or any carbon standard programme of similar nature. Comparison with GS project's list (https://registry.goldstandard.org/projects?q=&page=1) has been used for this assessment. Therefore, the criteria is fulfilled by the PA.
	(d) <u>Host Country Requirements:</u> projects shall be in compliance with applicable Host Country's legal, environmental, ecological and social regulations.	The project is in accordance with Brazilian legal, environmental, ecological and social regulations. Therefore, the criteria is fulfilled by the PA.

		Environmental/Operational license has been used as evidence ^{/19/} . In order to grant the operational license (evidence 19), all legal, environmental, ecological and social aspects have to be in compliance with legislation. Therefore it is concluded that the project is in compliance with all these aspects.
	(e) <u>Contact Details</u> : as part of the Project Documentation the Project Developer shall provide (i) name and (ii) contact details of all Project Participants; AND in case of an organization (iii) the legal registration details and (iv) documentation by the governing jurisdiction that proves that the entity is in good standing (defined as being a legal or other appropriate entity registered in or allowed to operate within the required jurisdiction and with no evidence of insolvency or legal/criminal notices placed against it or any of its Directors). Gold Standard retains the right (at its own discretion) to refuse use of the Standard where reputational concerns are highlighted.	The PP's name, contact details and legal registration details were checked in the Appendix 2 of the PDD and Cover Letter. Furthermore, through checking the company information, it is confirmed that PP is in good standing and legally operating, with no reputational concerns. Therefore, the criteria is fulfilled by the PA. Environmental license has been used for confirming this information ^{/19/}
	(f) <u>Legal Ownership</u> : full and uncontested legal ownership of any Products that are generated under Gold Standard Certification, (for example carbon credits) shall be demonstrated. Where such ownership is transferred from project beneficiaries this must be demonstrated transparently and with full, prior and informed consent (FPIC). Note that for certain Project types there is a requirement for full and uncontested legal land title/tenure to be demonstrated. These are contained within specific Activity or Product	Ecourbis is a private company and is the legal owner of the carbon credits as can be seen in the UNFCCC website, where it is listed and as can be checked by Environmental license ^{/19/} . Therefore, the ownership could be evidenced and the criteria is fulfilled by the PA.

	Requirements. All projects shall immediately report to Gold Standard any land title/tenure disputes arising.	
	(g) <u>Other Rights</u> : as well as legal title and ownership, the Project Developer shall also demonstrate where required uncontested legal rights and/or permissions concerning changes in use of other resources required to service the Project (for example, access rights, water rights etc.). Any known disputes or contested rights must be declared immediately to Gold Standard by the Project Developer and resolved prior to further project implementation in affected areas.	EcoUrbis has the right of treating the landfill to extract the biogas as per Environmental license ^{19/} . In addition, the project developer is the owner of all equipment and has all licenses necessary for the implementation and operation of the Biogas Plant. Therefore, the criteria is fulfilled by the PA.
	(h) <u>Official Development Assistance (ODA) Declaration</u> : all Project Developers applying for project activities located in a country named by the OECD Development Assistance Committee's ODA recipient list and seeking Gold Standard Certification for carbon credits shall declare the Official Development Assistance (ODA) support. The Project Developer shall follow the GHG Emissions Reduction & Sequestration Product Requirements and submit the declaration at the time of Design Certification.	By the ODA declaration signed by the project developer ^{26-2/} , it is verified that no ODA is provided under the condition that the credits generated by the project will be transferred, either directly or indirectly, to the donor country providing ODA support. Therefore, the criteria is fulfilled by the PA.
Findings	-	
Conclusion	The validation team confirms that the PA meets all the eligibility criteria of the GS4GG as per section 3.1.1 of GS4GG Principles & Requirements.	

D.2.3. Activity requirements

Means of validation	By checking the information provided by project proponents, it is not clear which activity requirements will be applicable to the project activity. Moreover, the activity requirements have not been evaluated in the Transition Report and therefore a CL has been raised.
Findings	CL 03
Conclusion	They are as follows:

<u>Renewable energy activity requirements</u>		
	15) Projects shall generate and deliver energy services (e.g., mechanical work/electricity/heat) from non-fossil fuel and renewable energy sources	The project refers to a project activity using Biogas (landfill gas) with provision of biogas through dedicated pipeline to consumers and with plans of generating renewable energy to grid. Project description and interviews have been used as evidence. Therefore, the criteria is fulfilled by the PA.
	b) Projects shall comprise of renewable energy generation units, such as solar photovoltaic, tidal/wave, wind, hydro, geothermal, waste to energy and renewable biomass, that are: • Supplying energy to a national or a regional grid; OR • Supplying energy to an identified consumer facility via national/regional grid through a contractual agreement such as wheeling.	The project refers to a project activity using Biogas (landfill gas) with provision of biogas through dedicated pipeline to consumers and with plans of generating renewable energy to grid. Project description and interviews have been used as evidence. Therefore, the criteria is fulfilled by the PA.
	c. Any Project supplying electricity to a mini-grid ¹ shall refer to Community Services Activity Requirements.	Not applicable
	d. Projects generating on-site energy for captive consumption at an industrial facility shall refer to the requirements in this document.	Not applied. The project will generate renewable energy for injecting in grid and methane to be sold to consumers via dedicated pipeline.
	2.1.3 New Gold Standard Verified Emission Reductions (GS VER) or Gold Standard labels for Certified Emission Reductions (GS CER), Renewable Energy projects connected to national or a regional electricity grid ² must be located in either a; a. Least Developed Country (LDC), Small Island Developing State (SIDS) or a Land Locked Developing Country (LLDC) ³ or b. Low Income and Low Middle-income country where the penetration level of the proposed	Not applied. Refer to requirement stated in the paragraph 2.1.4 below

	Renewable Energy Technology type is less than 5% of the total grid installed capacity, at the time of the first submission to preliminary review Renewable Energy projects connected to national or a regional electricity grid are ineligible for GS VERs/CERs, if located in: - an Upper Middle-Income Country or High-Income Country ⁵ or - SIDS and LLDC, defined as a High- Income Country ⁶	
2.1.4	Grid Connected off-shore wind projects and waste to energy projects that involve utilization of landfill gas/biogas to electricity generation with or without thermal energy production are exempted from eligibility requirement outlined in paragraph 2.1.3 from Renewable Energy Activity requirements v1.4.	As this project refers to utilization of landfill gas/biogas to electricity generation with or without thermal energy production, paragraph 2.1.3 from Renewable Energy Activity requirements v1.4 does not apply. Project description and interviews have been used as evidence. Therefore, the criteria is fulfilled by the PA.

In addition, besides the GS Renewable energy activity requirements renewable energy projects seeking Gold Standard certification have to meet the following additional principles and requirements:

Criterion	Assessment
4.1 <u>Principle 1: Contribution to Climate Security & Sustainable Development</u>	
4.1.1 Project shall mandatorily contribute to SDG 13 (Climate Action) and two other SDGs. It is recommended to include a contribution to SDG 7 (Affordable and Clean Energy) as one of the other 2 SDGs.	The project contributes to SDG 13, SDG 4, SDG 5, SDG 7 and SDG 8. Therefore, the criteria is fulfilled by the PA.
4.2 <u>Principle 2: Safeguarding Principles</u>	
4.2.1 Project developers shall conduct a Safeguarding Principles Assessment and conform to the Safeguarding Principles & Requirements	The Safeguarding Principles Assessment is performed in Appendix 1 of the PDD and in Section D.2.4 of this report. Therefore, the criteria is fulfilled by the PA.
4.3 <u>Principle 3 – Stakeholder Inclusivity</u>	
4.3.1 Projects shall identify and engage relevant stakeholders and seek expert stakeholder input where necessary in the design, planning and implementation. Specific stakeholder consultation requirements for hydropower.	A full stakeholder consultation process has been performed at the original validation process of the PA as it could be checked during the document check carried out during the validation assessment.

	renewable biomass, MSW incineration projects are outlined in Annex A of this document.	Moreover, a new stakeholder consultation has been carried out to fill the GS4GG gaps. There are open channels for continuous input and a grievance mechanism in place (grievance book/ ^{24-8/}), as per GS requirements. Interviews to local stakeholders have been conducted to confirm this information. Therefore, the criteria is fulfilled by the PA.
	4.4 Principle 4 – Demonstration of Real Outcomes	
	4.4.1 The project start date shall be determined as per paragraph 4.1.39 of Principles & Requirements	The start date of the PA is 29/02/2012 as determined in CDM programme and it is in accordance with GS requirements. Therefore, the criteria is fulfilled by the PA.
	4.4.2 Projects may receive Issuance of Certified Impact Statements or Products for a maximum of three Certification Renewal Cycles i.e., a total of 15 years, unless mentioned otherwise in the Product Requirements	The PA is a transitioned project. As per instruction of GS4GG, the project is retroactive. This crediting period starts on 01/04/2020 and will last until 31/03/2025. Therefore, from the 1 st CP start date (01/04/2013) until the end of this crediting period, less than 15 years will have passed. Therefore, the criteria is fulfilled by the PA.
	4.4.3 Projects shall mandatorily undergo Design Certification Renewal every 5 years as per Principles & Requirements	As the PA is a transitioned project and its crediting period will be of 5 years, when it undergoes Design Certification Renewal. Therefore, the criteria is fulfilled by the PA.
	4.4.4 The baseline shall be reassessed at the time of Crediting Period Renewal following the applicable methodology and Principles & Requirements	As this is a transition from CDM to GS4GG and verification and not a renewal of the crediting period. This step is not applied during this process. The baseline will be reassessed. In the end of the current crediting period. Therefore, the criteria is fulfilled by the PA.
	4.5 Principle 5 – Financial Additionality & Ongoing Financial Need	

	4.5.1 Projects seeking the issuance of Certified Impact Statements or Products (for example GS VERs) shall demonstrate financial additionality and Ongoing Financial Need in accordance with Principles & Requirements unless mentioned otherwise in the Product Requirements.	Additionality has been assessed during the validation phase of the project activity under original program (CDM). The Ongoing Financial Need of the PA is to be assessed at the renewal of CP. Therefore this step is not applicable.
	4.5.2 Project and VPAs, where applicable may refer to valid CDM TOOL32: Methodological tool: Positive list of technologies to demonstrate additionality. Under no circumstances should deemed automatic additionality conditions imply an exemption from the Gold Standard eligibility criteria related to the technology types.	Not applicable to the PA, as it does not apply TOOL32.
	4.5.3 Projects and VPAs shall meet prior consideration requirements in accordance with paragraph 4.1.49 and 4.1.50 of Principles & Requirements.	Not applicable to the PA, as this is a transition from CDM to GS4GG and therefore it is not applicable.
	4.5.4 An eligible Microscale project that meets any one of the criteria below shall be deemed additional: a. The project is located ¹⁴ i. In a Least Developed Country (LDC), Small Island Developing States (SIDS) or Land Locked Developing Country (LLDC) or in a special underdeveloped zone (SUZ) of the Host Country; OR ii. In a host country or part of the host country different from those defined above, provided that the Project Developer can demonstrate that project implementation will essentially benefit poor communities. The Project Developer shall seek approval from Gold Standard providing a detailed description as to how the activity will benefit poor communities; b. The project is supplying electricity to regional or national grid; however, convincing evidence can be provided to demonstrate that project implementation will significantly improve access to electricity for the local communities, households or SMEs; c. The project involves the installation of Solar Photovoltaic	Not applicable to the PA, as it is a large scale project activity.

	and Solar Thermal electricity generation, off-shore wind, marine technology, household rooftop wind turbine of size up to 100 kW or biomass integrated gasification combined cycle; d. Other renewable energy technologies or measures for which the CDM EB has adopted the host country recommendation. The end date of the validity shall be before the time of first submission to Gold Standard OR approved by The Gold Standard as part of positive list.	
	4.5.5 In case the deemed additionality criteria are also valid at the time of Renewal of Crediting Period, the Ongoing Financial Needs assessment is deemed to be met unless otherwise stated in product requirements.	As this is a transition from CDM to GS4GG and therefore it is not applicable.
The validation team confirms that the PA meets all the requirements of Renewable energy activity requirements – version 1.4.		

D.2.4. Gender Sensitive Requirements

Means validation of	The Gender Equality Requirements & Guidelines will apply to all new projects that are seeking certification under the Gold Standard for Global Goals (GS4GG). The following questions were answered by project developers		
	Question	Answer from Project developer	VVB Assessment
	Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	The company structure has few employees. However, it is possible to verify the existence of women in management positions and the non-existence of wage discrimination between men and women. It is also important to note that this system includes guidelines for internal and external company communication to ensure that all actors directly or indirectly involved in its operations are well informed about the project. In this sense, it is important to highlight the relevance of the public	Presence of women in managerial positions could be observed during the on-site inspection. Moreover, it could be observed that both men and women have equally participated from stakeholder consultation as per Stakeholder Consultation report ^{24-2/} . Therefore, it could be concluded that the project design and implementation reflects the key issues and requirement of gender policy.

		meeting held in the past about the implementation of the project, which was widely advertised in the community, had an effective participation of the invited actors, and counted with a significant presence of women, as reported in the Stakeholder Consultation Report	
	Explain how the project aligns with existing country policies, strategies and best practices	Brazil is a signatory to the identified commitment, which can be verified at the following electronic address: https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtsg_no=IV-8&chapter=4&clang=_en Additionally, as mentioned in the previous answer, a woman is responsible for the execution of the project, which can be seen in the organization chart of the company.	Presence of women in managerial positions could be observed during the on-site inspection. Moreover, it is known that Brazil is signatory of the "Convention on the Elimination of All Forms of Discrimination against Women". Considering that the company is complying with all applicable legislation and by observations carried out during the on-site inspection, it can be concluded that the project aligns with existing country policies, strategies and best practices.
	Is an Expert required for the Gender Safeguarding Principles & Requirements?	No. The project is a LFG collection and utilization project and it does not discriminate among gender nor reduce access to or control of resources for women. The Project beneficiaries in terms of employment and social ascension of the area are common for both gender and it does not involve any kind of discrimination in any form.	It is agreed that expert for gender safeguarding principles is not needed for this project activity
	Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	A Stakeholder's consultation was held in 2022/2023 by following the applicable requirements for Gold Standard Project. Since the project complies with the requirements of	It is agreed that no expert is needed.

		"Principle 2 – Gender Equality and Women's Rights" and also achieves SDG 5, no Expert would be required to assist with Gender issues at the Stakeholder Consultation.	
Findings	-		
Conclusion	The validation team confirms that the PA meets all the requirements of GS4GG Gender Equality Requirements & Guidelines – version 1.1.		

D.3. Application and selection of methodologies and standardized baselines

D.3.1. Application of methodologies and standardized baselines

Means of validation	The PDD employs the approved baseline methodology ACM0001 Flaring or use of landfill gas v. 19.0 The applicability condition of the methodology is duly referenced in the approved CDM PDD and duly validated in this standard. The applicability conditions of this methodology under GS4GG and the applicability criteria of GHG emission reductions & Sequestration product requirements are being assessed below. ACM0001 Flaring or use of landfill gas v. 19.0		
	Applicability criteria of applied methodology	Justification from PP	MoV
	<u>This methodology applies to project activities that include the destruction of methane emissions and displacement of a more-GHG-intensive service by capturing landfill gas from the landfill site and/or flaring and/or using to produce energy (i.e. electricity, thermal energy); and/or using to supply consumers through natural gas distribution network, dedicated pipeline or trucks</u> <u>This methodology is applicable under the following conditions:</u>	<u>This methodology is applied to the project activity since the CH₄ is destructed in flare and groups generators and there is a displacement of CO₂ by capturing landfill gas from the landfill site used to generate electricity to the grid and used to supply consumers through dedicated pipeline</u> <u>A) This methodology is applicable because it was installed a new LFG capture system in an</u>	<u>Information has been duly assessed during the on-site inspection and through interviews to the project participants. Moreover, Project design document has been used to confirm the installed equipment.</u> <u>Interviews have been conducted and project description was analysed. It</u>

	(a) Install a new LFG capture system in an existing or new (Greenfield) SWDS where no LFG capture system was or would have been installed prior to the implementation of the project activity; or (b) Make an investment into an existing LFG capture system to increase the recovery rate or change the use of the captured LFG, provided that: (i) The captured LFG was vented or flared and not used prior to the implementation of the project activity; and (ii) In the case of an existing active LFG capture system for which the amount of LFG cannot be collected separately from the project system after the implementation of the project activity and its efficiency is not impacted on by the project system: historical data on the amount of LFG capture and flared is available; I Flare the LFG and/or use the captured LFG in any (combination) of the following ways: (15) Generating electricity; (ii) Generating heat in a boiler, air heater or kiln (brick firing only) or glass	existing SWDS where no LFG capture system was installed prior to the implementation of the project activity (there was only in the SWDS a passive system where the LFG was released to atmosphere through drained wells). b) An investment was made into an existing LFG capture passive system to increase the recovery rate where the LFG was vented and not used prior to the implementation of the project activity. Thus, there was not an existing active LFG capture system. c) In the project activity, the LFG is flared in the enclosed flares, used to generate electricity, and supplied to consumers through a dedicated pipeline. D) The amount of organic waste is the same in the project activity as well as in the absence of the project activity, since there is no organic waste recycling plant in the area that is served by the landfill.	could be confirmed that there was no LFG capture system prior to the implementation of the project activity apart from passive system. The 24ulfilent carried out was to increase the recovery rate of the LFG comparing to the situation prior implementation of project activity. This information was checked by interviewing the employees and by checking the technical description of project activity. Enclosed flares are installed and used to destroy the collected LFG. Moreover, LFG is also distributed through dedicated pipeline to costumers. Information observed during the on-site inspection. During the on-site inspection, it could be observed that there are spots dedicated to future installation of electricity generators. Moreover, information could be confirmed through interviews performed to employees. Nevertheless, no electricity generation is being carried out in the project activity at the moment of on-site inspection. Moreover, current waste deposition quantities were
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	melting furnace;1 and/or (iii) Supplying the LFG to consumers through a natural gas distribution network; (iv) Supplying compressed/liquefied LFG to consumers using trucks;2 (v) Supplying the LFG to consumers through a dedicated pipeline; (d) Do not reduce the amount of organic waste that would be recycled in the absence of the project activity.		provided evidencing that there was no reduction of organic waste that is being recycled due to the project activity. Therefore it is concluded that the project activity complies with this requirement.
	This methodology is only applicable if the application of the procedure to identify the baseline scenario confirms that the most plausible baseline scenario is: (a) Atmospheric release of the LFG or capture of LFG and destruction through flaring to comply with regulations or contractual requirements, to address safety and odour concerns, or for other reasons; and (b) In the case that the LFG is used in the project activity for generating electricity and/or generating heat in a boiler, air heater, glass melting furnace or kiln: (i) For electricity generation: that electricity would be generated in the grid or in captive	A) This methodology is applicable because in this project activity, the LFG would be released to atmosphere or destructed in drained wells by passive venting to address safety and odour concerns. b) In the project activity, the LFG is used to generate electricity which in the absence of the project activity, the electricity would be generated in the grid by a mix of sources (including fossil fuels plants which composes of Brazilian Interconnected Electrical System – SIN). c) In the project activity, the LFG is also used to supply to end-user through a dedicated pipeline where in the absence of the project activity, the end-user would be supplied by natural gas.	Baseline scenario defined by the project activity could be identified in the Project Description Document: LFG would be released to atmosphere in absence or project activity or vented to address safety and odour concerns; Electricity would be generated by grid connected power plants; Consumers would be supplied by natural gas in the absence of the project activity. Therefore, the project activity fulfils the requirement.

	fossil fuel fired power plants; and/or (ii) For heat generation: that heat would be generated using fossil fuels in equipment located within the project boundary; (15) In the case of LFG supplied to the end-user(s) through natural gas distribution network, trucks or the dedicated pipeline, the baseline scenario is assumed to be displacement of natural gas. (d) In the case of LFG from a Greenfield SWDS, the identified baseline scenario is atmospheric release of the LFG or capture of LFG in a managed SWDS and destruction through flaring to comply with regulations or contractual requirements, to address safety and odour concerns, or for other reasons.	(d) The SWDS is not a Greenfield site, thus, this case is not applicable.	The project activity does not comprehend application of other methodology as per PDD. No changes in the
	This methodology is not applicable: (a) In combination with other approved methodologies. For instance, ACM0001 cannot be used to claim emission	A) The project activity does not claim emission reductions for the displacement of fossil fuels in a kiln or glass melting furnace or for implementation energy efficiency measures at a	

	reductions for the displacement of fossil fuels in a kiln or glass melting furnace, where the purpose of the CDM project activity is to implement energy efficiency measures at a kiln or glass melting furnace; (b) If the management of the SWDS in the project activity is deliberately changed during the crediting in order to increase methane generation compared to the situation prior to the implementation of the project activity.	kiln or glass melting furnace. b) The project activity will not change, deliberately, the management of the SWDS to change during the crediting period in order to increase methane generation compared to the situation prior to the implementation of the project activity (e.g. addition of liquids, pre-treating waste and so on).	management of the SWDS have been observed during the on-site inspection. Neither a significant difference in the waste quantities have been observed. The project activity complies with this requirement.
	Applicability criteria as per GHG Emissions Reductions & Sequestration Product Requirements	Justification from PP	MoV
	8.1.1: All Projects shall conform to the relevant Activity Requirements and Gold Standard Approved Methodologies, including eligible CDM Methodologies.	The project applies the version of the methodology and applicable tools applied for CDM/other standard registration or renewal	The validation team confirms that the project activity complies with 427_V2.0_List-of-eligible-CDM-GS-methodologies by applying ACM0001 v.19.0 as can be seen in the approved version of the PDD, in the UNFCCC website.
Requirements of "427_V2.0_List-of-eligible-CDM-GS-methodologies"			
	Applicability criteria as per 427_V2.0_List-of-eligible-CDM-	Justification from PP	MoV

	GS-methodologies		
	<u>Type of project activity:</u> Project activities that capture landfill gas (LFG) and flare and/or use it to produce energy and/or use to supply consumers through natural gas distribution network.	The project applies the version of the methodology and applicable tools applied for CDM/other standard registration or renewal	The validation team confirms that the project activity comprehends capture of landfill gas and flare. It is also designed for generating electricity with this gas, measure which is still not implemented. Evidences such as pictures ^{09/} and project design have been used for this conclusion.
	<u>Additional GS4GG requirements:</u> Emission reduction associated with methane avoidance (including from the flared biogas fraction) and for substitution of non-renewable fuel shall be eligible if PP demonstrates that the system is designed in a way to at least make use of some of the biogas recovered for energy services (heat & power generation).	The plant is currently supplying a consumer with generated biogas through a dedicated pipeline and flaring the exceeding part. Moreover, the plant design demonstrates that in phase 2, which is planned to be implemented soon, that the plant is designed for generating electricity from biogas.	The validation team confirms that the project activity comprehends capture of landfill gas, flare and supplying it to costumers via dedicated pipeline. It is also designed for generating electricity with this gas, measure which is still not implemented. Evidences such as pictures ^{09/} and project design have been used for this conclusion.
	The applicability of the methodology was found to be fulfilled, no deviation from methodology was observed.		
Findings	N/A		
Conclusion	The validation team confirms that; • It has critically assessed each applicability condition listed in the selected methodology and the relevant information contained in the PDD against these criteria. • The selected methodology for the proposed GS project activity is applicable. • The methodology was found to be in accordance with the applicable requirements in GS4GG requirements.		

D.3.2. Deviation from methodology and/or methodological tool

Means of validation	Compliance of monitoring plan with respect to the monitoring methodology has been reviewed by the document review, review of the data and information presented, review of the monitoring plan, monitoring
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	methodology including the applicable tool(s), evaluation of data management and the quality assurance and quality control system. The applicability of the methodology was found to be fulfilled, no deviation from methodology was observed.
Findings	No findings were raised
Conclusion	The validation team confirms that no deviation from the selected methodology was applied in the validation of the proposed GS project activity.

D.3.3. Clarification on applicability of methodology, tool and/or standardized baseline

Means of validation	The validation team did not find any event/observation, which may raise concern about the applicability or application of the methodology on the project activity.
Findings	No findings were raised
Conclusion	The validation team confirms that no clarification needed on the selected methodology.

D.4. Demonstration of additionality

Means of validation	As per Principle 5 (FINANCIAL ADDITIONALITY AND ONGOING FINANCIAL NEED) of GS4GG PP has demonstrated additionality applying methodological tool is as per clause 3.5.1.2 of GS4GG. The PP has used the methodology ACM0001 v.19.0. According to the guidelines of GHG emissions reduction and sequestration product requirements para 3.1.2, Gold Standard CDM and JI projects do not require to carry out additional assessment for demonstration of additionality over and above what has been done for registration/determination with the CDM EB/JISC unless the Project falls into a category that is deemed non-Additional in an applicable Gold Standard Activity Requirement. In such cases the relevant Activity Requirement shall take precedence. The project activity was registered under CDM on 08/05/2012 and the assessment team confirmed the project's additionality using the validation report^{13/}. As such, additional assessment for the demonstration of additionality is not required and is determined in line with CDM EB requirements. In line with the procedure for the CDM renewal of a crediting period, this section is that applied in the original PDD. The assessment team has reviewed the details in PDD in line with the documentary evidence. The details are also confirmed during site assessment. Hence, the assessment team is of the opinion that the PA is additional. On-going Financial Need: Not applicable during the transition of this project activity from CDM to GS4GG. Only applicable during the renewable of crediting period.
Findings	N/A
Conclusion	The validation team confirms that all the documented evidence listed and reviewed during the validation process are found correct and is able to confirm that: a) The GS benefits were considered necessary in the decision to undertake the project as a proposed project activity.

	b) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources; c) All underlying assumptions are appropriate and reasonable in context of the project activity d) The capacity and technology details are correct and in line with the requirements for Auto additional projects.
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D.5. Estimation of emission reductions or net anthropogenic removals or SDG outcomes

Means of validation	SDG 13: Climate Action																												
	SDG Target: 13.2: Integrate climate change measures into national policies, strategies and planning.																												
	Indicator: Reduction in GHGs emissions																												
	The applied methodology ACM0001 defines the methodological steps to determine the emission reduction. The assessment of the determination eRs is already validated in the current valid version of the PDD.																												
	The Emission Reductions are determined as Baseline emissions minus Project emissions. No leakage is accounted. The estimated values are as follows:																												
	<table><tr><th>Year</th><th>BE_y (tCO₂/yr)</th><th>PE_y (tCO₂/yr)</th><th>ER_y (tCO₂/yr)</th></tr><tr><td>From 01/04/2020</td><td>736,652</td><td>2,982</td><td>733,670</td></tr><tr><td>2021</td><td>1,151,910</td><td>4,296</td><td>1,147,614</td></tr><tr><td>2022</td><td>1,205,149</td><td>4,558</td><td>1,200,590</td></tr><tr><td>2023</td><td>1,249,866</td><td>4,778</td><td>1,245,088</td></tr><tr><td>2024</td><td>1,288,286</td><td>4,967</td><td>1,283,319</td></tr><tr><td>Until 31/03/2025</td><td>329,352</td><td>1,283</td><td>328,069</td></tr></table>	Year	BE _y (tCO ₂ /yr)	PE _y (tCO ₂ /yr)	ER _y (tCO ₂ /yr)	From 01/04/2020	736,652	2,982	733,670	2021	1,151,910	4,296	1,147,614	2022	1,205,149	4,558	1,200,590	2023	1,249,866	4,778	1,245,088	2024	1,288,286	4,967	1,283,319	Until 31/03/2025	329,352	1,283	328,069
	Year	BE _y (tCO ₂ /yr)	PE _y (tCO ₂ /yr)	ER _y (tCO ₂ /yr)																									
	From 01/04/2020	736,652	2,982	733,670																									
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2024	1,288,286	4,967	1,283,319																										
Until 31/03/2025	329,352	1,283	328,069																										
SDG 4: Quality Education:																													
SDG Target: 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship																													
Indicator: Number of people from local community attending company's socioenvironmental activities events. Based on monthly attendance list and/or monthly activities reports. The value estimated in the PDD is equal to 1 person per year																													
SDG 5: Gender Equality.																													
SDG Target: 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life																													
Indicator: The parameter monitored would be "Quantity of women in managerial positions". The estimated value in the PDD is that at least one woman in leadership and decision-making positions.																													

	SDG 7: Affordable and Clean Energy SDG target: 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix Indicators: the following parameters will be monitored: - Amount of electricity generated using LFG by the project activity in year y. In baseline scenario the value was equal to 0 MWh. The project estimates to generate an average of 35,369 MWh/y during the crediting period - Amount of LFG selling to costumers through dedicated pipeline. In baseline scenario the value was equal to 0 MWh. The project estimates to provide an average of 57,537,579 m³/y of methane through a dedicated pipeline during the crediting period SDG 8: Decent Work and Economic Growth – SDG target: 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value Indicator: Total jobs generated as a result of the project: the estimated value is at least one job / year
Findings	<i>CAR 01</i>
Conclusion	The validation team has cross checked the parameters and values related to the emission reduction and confirmed that justification of the mentioned values is correct. Moreover, the parameters related to SDGs 13, 4, 5, 7 and 8 have been duly included in the PDD. The chosen targets and indicators are correct and coherent between the PD and the SDG tool.

D.6. Start date, crediting period type and duration

Means of validation	It is confirmed that the start date of the project activity, as per Principle requirements paragraph 4.1.39 was on 29/02/2012, which is the estimated date for purchasing the main equipment. This was the information available at the time of validation process, and therefore this date has been used as the project start date. Considering that this project was already validated in the CDM, the CDM PDD^{/10/} has been used as evidence of this process. The start date of the 1st crediting period of the project is 01/04/2013, which is also the registration date on CDM. Moreover, the start date of 2nd crediting period under CDM is on 01/04/2020, which follows the same start date as for the original program (CDM) and lasting until 31/03/2025, i.e, lasting 5 years. Nevertheless, as per para 6.4.1. of GHG EMISSIONS REDUCTIONS & SEQUESTRATION PRODUCT REQUIREMENTS, the transition project may request issuance of GSVERs, for maximum two years before the date of first submission (submission for preliminary review). Considering that in this case submission for pre-liminary review was made on 20/01/2023, then the ERs are being claimed only from this date onwards and not before that. The crediting period will remain as per original program, starting on 01/04/2020 and lasting 5 years as per GS4GG requirements.
Findings	<i>CL 04</i>

Conclusion	A crediting period of 5 years has been selected by the PP as per principles and requirements of GS4GG in order to fulfil the GS4GG requirements. The expected lifetime of the project is indicated as 25 years in the PDD and evidence provided ^{/28/} .
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D.7. Safeguarding Principles

Means of validation	Each principle has been assessed in accordance with Safeguarding Principles and Requirements. They are as follows:			
	<u>Safeguarding principles</u>	<u>Assessment of relevance to the project (Yes / Potential / No)</u>	<u>Mitigation measure</u>	<u>Assessment</u>
	1. <u>Human Rights</u>			
	1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights.	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations, which are in accordance with the Universal Declaration of Human Rights and against discrimination.
	2. The Project shall not discriminate with regards to participation and inclusion.			
	2. <u>Gender Equality and Women’s Rights</u>			
	1. The Project shall not directly or indirectly reinforce gender-based discrimination and shall not lead to/contribute to adverse impacts on gender equality and/or the situation of women. Specifically, this shall include (not exhaustive): (a) Sexual harassment and/or any forms of violence against women – address the multiple risks of gender-based violence, including sexual exploitation or human trafficking. (b) Slavery, imprisonment, physical and mental drudgery, punishment or	No	No mitigation measure is required for this indicator.	Refer to Section D.2.4 for assessment

	coercion of women and girls. (c) Restriction of women's rights or access to resources (natural or economic). (d) Recognise women's ownership rights regardless of marital status – adopt project measures where possible to support to women's access to inherit and own land, homes, and other assets or natural resources.			
	2. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work, specifically: (a) Where appropriate for the implementation of a Project, paid, volunteer work or community contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities. (b) Introduce conditions that ensure the participation of women or men in Project activities and benefits based on pregnancy, maternity/paternity leave, or marital status. (c) Ensure that these conditions do not limit the access of women or men, as the case may be, to Project participation and benefits.			
	3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks.			
	3. Community Health, Safety and Working Conditions			
	1. The Project shall avoid community exposure to increased health risks and shall not adversely affect	Potentially	The project uses urban solid waste as resource	The parameter environmental permit has been included

	the health of the workers and the community.		to generate biogas and energy.	in the monitoring plan.
			The project counts with valid operational licence issued by the Local Environmental Agency.	
			Therefore, project does not affect any marginalized or vulnerable communities.	
	<u>4. Cultural Heritage, Indigenous Peoples, Displacement and Resettlement</u>			
	<u>4.1. Sites of Cultural and Historical Heritage</u>			
	1. The Project shall not involve or be complicit in the alteration, damage or removal of any sites, objects or structures of significant cultural heritage.	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations, and according to reports, there are no critical cultural heritage, historical relics and no rare, threatened or endangered ecosystems in the area. As part of the environmental licensing, CTL obtained the respective approval from the National Historical and Artistic Heritage
	2. Where a Project proposes to utilise Cultural Heritage, including the knowledge, innovations, or practices of local communities, affected communities shall be informed of: (a) Their rights under Applicable Law, (b) The scope and nature of the proposed commercial development; and (c) The potential consequences of such development.			
	3. The Project shall provide for equitable sharing of benefits from commercialisation of such knowledge, innovation, or practice, consistent with			

	their customs and traditions.			Institute – IPHAN (expert) Moreover, the VVB team leader is local expert in Brazil and therefore is aware of the legislation applied to the project activity. The project activity refers to the implementation of a Biogas Plant inside an already operative landfill. Therefore, project has not been implemented in sites of cultural or historical heritage. Therefore it is concluded that the principle has been taken into account.			
	4. The opinions and recommendations of an Expert Stakeholder(s) shall be sought and demonstrated as being included in the project design.						
	4.2. Forced Eviction and Displacement						
	5. The Project shall not involve and shall not be complicit in the involuntary relocation of people.				No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations, and it did not involve any kind of resettlement. It is confirmed that the Landfill site was the subject of a Public Utility Decree in
	6. Projects shall avoid physical (i.e., relocation or loss of shelter) and economic displacement (i.e., loss of assets or access to assets that leads to loss of income sources or means of livelihood), and mitigate displacement impacts on displaced persons and host communities when displacement cannot be						

	avoided. In such cases, the Project shall integrate into the Project documentation a Resettlement Action Plan or Livelihood Action Plan as appropriate. Please refer to UNDP Standard 5: Displacement and Resettlement requirements for further details in this regard.			1995 issued by São Paulo City Hall (expert), which established that the area would be used to treat landfill waste. Moreover, the VVB team leader is local expert in Brazil and therefore is aware of the legislation applied regarding forced eviction and displacement. The project activity refers to the implementation of a Biogas Plant inside an already operative landfill. Therefore, the implementation of the project activity did not cause Forced Eviction and Displacement. Therefore it is concluded that the principle has been taken into account.	
	7. The opinions and recommendations of an Expert Stakeholder(s) shall be sought and demonstrated as being included in the project design.				
	4.3. Land Tenure and other rights				
	8. The Project Developer shall identify all such sites/matters potentially affected by the Project. For all such sites/matters identified the Project shall respect and safeguard: (a) Legal rights, or	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations, and the PA has all	

	(b) Customary rights (c) Special cultural, ecological, economic, religious or spiritual significance of people shall be demonstrably promoted/protected.			licenses and concessions to perform the activity. The area is currently owned by the Public Services Concessionaire, EcoUrbis Ambiental S/A. This concession took into account expert inputs regarding land tenure. Moreover, The VVB team leader is local expert in Brazil and therefore is aware of the legislation applied regarding land tenure. The project activity refers to the implementation of a Biogas Plant inside an already operative landfill. The operational license is only provided if land tenure has been evidenced. Therefore, it is concluded that this principle has been fulfilled
	9. Changes in legal arrangements must be in line with relevant law and regulation and must be carried out in strict adherence with such laws. All legal disputes must be resolved prior to the Project being carried out in such areas. All such changes must be demonstrated as having been agreed with free, prior and informed consent.			
	10. The Project Developer must hold uncontested land title for the entire Project Boundary to complete Project Design Certification.			
	11. The opinions and recommendations of an Expert Stakeholder(s) shall be sought and demonstrated as being included in the project design.			
	4.4. Indigenous people			
	12. The Project Developer shall identify all communities of Indigenous Peoples within the Project area of influence who may	No	No mitigation measure is required for	The PA is developed in compliance with Brazilian regulations,

	be affected directly or indirectly by the Project.		this indicator.	and the PA is not located at on land claimed by indigenous people. It worth mentioning that the biogas plant is located inside a landfill which was already in operation. Therefore, the area has no influence of indigenous people. The team leader is local expert in Brazil and therefore is aware of the legislation applied regarding indigenous land. Moreover, the operational license^{/19/} is only granted if land is free of dispute. Therefore it is concluded that the principle has been taken into account.
	13. The Project Developer shall recognise and respect the indigenous people's collective rights to own, use, and develop and control the lands, resources and territories that they have traditionally owned, occupied or otherwise used or acquired, including lands and territories for which they do not yet possess title.			
	14. The Project Developer shall respect, protect, conserve and shall not take the cultural, intellectual, religious and spiritual property of indigenous peoples without their free, prior and informed consent (FPIC).			
	15. The Project Developer shall ensure that the indigenous people are provided with the equitable sharing of benefits to be derived from utilisation and/or commercial development of natural resources on lands and territories or use of their traditional knowledge and practices by the Project. This shall be done in a manner that is culturally appropriate and inclusive and that does not impede land rights or equal access to basic services including health services, clean water, energy, education, safe and decent working conditions and housing.			
	16. The opinions and recommendations of an Expert Stakeholder(s) shall be sought and demonstrated as being included in the project design.			
5. <u>Corruption</u>				

	1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects.	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations.
	6. <u>Economic Impacts</u>			
	6.1. Labour Rights			
	1. The Project Developer shall ensure that there is no forced labour and that all employment is in compliance with national labour and occupational health and safety laws, with obligations under international law, and consistency with the principles and standards embodied in the International Labour Organization (ILO) fundamental conventions. Where these are contradictory and a breach of one or other cannot be avoided, then guidance shall be sought from Gold Standard. It requires that: (a) Workers shall be able to establish and join labour organisations. (b) Working agreements with all individual workers shall be documented and implemented. These shall, at minimum, comprise: i. Working hours (must not exceed 48 hours per week on a regular basis), AND ii. Duties and tasks, AND iii. Remuneration (must include provision for payment of overtime), AND iv. Modalities on health insurance, AND v. Modalities on termination of the contract with provision for voluntary resignation by employee, AND vi. Provision for annual leave of not less than 10 days per year, not including sick and casual leave.	Potentially	The project developer does not complicit in any form of forced or compulsory labour. All employees offering their services on a voluntary basis and are free to quit the services at any time without a menace or penalty. The project participants are committed to apply safe and healthy working conditions during all phases of the project. All employees of the project are protected by the Consolidation of	The PA is developed in compliance with Brazilian regulations, and all labour rights/requirements/obligations are followed. Total number of jobs generated by the project activity will be monitored. Working conditions are in accordance with the Consolidation of Labor Laws (CLT), created by Decree-Law No. 5,452 of May 1, 1943, to regulate labour relations in Brazil, in addition to following collective bargaining agreements (ACT) of the relevant categories. This information is confirmed by the project developers human resources (HR) which

	2. Child labour, as defined by the ILO Minimum Age Convention is not allowed. The Project Developer shall use adequate and verifiable mechanisms for age verification in recruitment procedures. Exceptions are children for work on their families' property as long as: (a) Their compulsory schooling (minimum of 6 schooling years) is not hindered, AND (b) The tasks they perform do not harm their physical and mental development AND (c) The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the project design. (d) 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.		Labour Laws Brazil signed the Universal Declaration of Human Rights (UDHR), adopted by the United Nations General Assembly.	are experts in this topic. The VVB team leader is local expert in Brazil and is aware about the applied labour legislation. The VVB has interviewed the project developers and carry out an on-site inspection confirming that no child labour occurs in the Biogas plant. Therefore it is concluded that the principle has been taken into account.
	6.2. Negative Economic Consequences			
	3. The Project Developer shall demonstrate the financial sustainability of the Projects implemented, also including those that will occur beyond the Project Certification period. 4. The Projects shall consider economic impacts and demonstrate a consideration of potential risks to the local economy and how these have been taken into account in project design, implementation, operation and after the Project. Particular focus shall be given to vulnerable and marginalised social groups in targeted communities	No	No mitigation measure is required for this indicator.	The financial assessment of the PA was presented in the original validation process, in accordance with GS rules.

	and that benefits are socially-inclusive and sustainable.			
	7. <u>Climate and Energy</u>			
	7.1. Emissions			
	1. Projects shall not increase greenhouse gas emissions over the Baseline Scenario unless this is specifically allowed within Activity Requirements or Gold Standard Approved Impact Methodologies.	No	Mitigation measures due to implementation of project activity will be carried out to reduce the baseline emissions	The PA contributes to the reduction of emissions of GHG.
	7.2. Energy Supply			
	2. The Project shall not affect the availability and reliability of energy supply to Other users.	no	The project will not increase GHG emissions over the baseline scenario.	The PA contributes to the increase of availability of energy supply as it is expected that renewable energy will be generated and injected into the grid
	8. <u>Water</u>			
	8.1. Impact on Natural Water Patterns/Flows			
	1. The Project shall ensure that water resources are conserved. For surface waters this means: (a) Maintaining credible environmental flows, demonstrated by providing a verifiable calculation that shows conservation is maintained at a level as advised by the independent Expert Stakeholder, and (b) Ensuring that any discharged wastewater is of a high enough standard to allow beneficial reuse. For ground water this means limiting abstractions to levels less than, or equal to, rates of recharge. Managed aquifer recharge may be used to conserve	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations, and there is no impact on natural water patterns and flows. During the environmental licensing process for the CTL landfill, a specialized consultancy firm was hired to carry out a hydrogeological study of the

	groundwater resources. The project can use historical records, ongoing monitoring and reporting through data logging of physical measurements, online sources and/or government data to assess the project risks/impacts.			region and assess the environmental impacts that the implementation of the CTL landfill would cause in the region, as well as proposing measures to mitigate these impacts. The environmental license has been granted by competent agency (CETESB). It is important to mention that the landfill is not the project activity. The biogas plan (project activity) has low impact in water patterns as it only collects the landfill gas and combust it in flares or sell it to costumers. Moreover, the VVB team leader is local expert in Brazil and is aware about the applied environmental legislation. Therefore it is concluded that the principle has been taken into account.
	2. At each Performance Certification the Project shall assess whether it is in an area of physical water stress or scarcity. The project can conduct an analysis of the water scarcity within the Project's physical area of influence (e.g., basin, watershed) and shall monitor the impact frequently. The project can use Aqueduct, GWSP Digital water Atlas, Water Risk Filter, WBCSD Global Water Tool, Water Stress Index Maplecroft, Water Scarcity Index Pfister or other recognised tools for water stress and scarcity assessment within the Project's physical area of influence.			
	3. The Project shall provide verifiable evidence of water stress experienced in the basin(s) in which the Project is active and demonstrate that consumption of water by the Project (over Baseline) is negligible or will bring positive impacts or, at a minimum, not increase the overall annual basin stress.			
	4. The risk(s) of the Project negatively impacting the catchment shall be assessed and addressed to ensure its ongoing, long-term viability and impact on surrounding social-economic and environmental assets. The project can use mapping tools, or other appropriate nationally recognised tools in this regard.			

	Recommended methods include online tools, engineering or physical assessment, historical flow records, land use records, and verbal or written surveys with local agencies and residents. Examination of longitudinal and lateral conductivity to check connectivity of flows, including vertical connectivity (i.e., sufficient flows or dead zones).			
	5. Where the Project is involved in abstraction from water resources required to support biodiversity and other ecosystem services, and flow assessment consistent with good practice, including a modern method outlined in one of the key references listed below must be undertaken. Alternatively, where local, national or regional regulation exists or where alternative approaches may be more appropriate than these may be put forward to Gold Standard for approval.			
	6. Where environmental flow assessments are impractical, the Project is required to demonstrate that the flow rate and variability is maintained from the abstracted water resource. A verifiable calculation shall be provided for each water source demonstrating total flow rates do not fall below levels that are contextually appropriate, as advised by an independent Expert Stakeholder.			
	7. The opinions and recommendations of Expert Stakeholder(s) shall be sought and demonstrated as being included in the project design and Monitoring Plan.			

8.2. Erosion and/or Water Body Instability				
	8. The risk of the Project negatively impacting the catchment and any risks impacting the Project's success shall be assessed and addressed. The project shall ensure its ongoing, long-term viability and impact on surrounding social-economic and environmental assets. The project shall assess the sensitivity of the physical area of influence due to low percentage of impervious cover in a project (e.g., basin, catchment), susceptibility to erosion and water body instability, and lack of terrestrial habitat connectivity. The project can use mapping tools, or other appropriate nationally recognised tools, academic or published studies on the relevant area. The recommended methods include online tools, visual inspection, engineering or physical assessment, historical land use records, aerial photographs, and verbal or written surveys with local agencies and residents on the characterisation of geomorphology of water bodies.	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations, and no risk of erosion and/or water body instability is verified. During the environmental licensing process for the CTL landfill, a specialized consultancy firm was hired to carry out a hydrogeological study of the region and assess the environmental impacts that the implementation of the CTL landfill would cause in the region, as well as proposing measures to mitigate these impacts. The environmental license has been granted by competent agency (CETESB). It is important to mention that the landfill is not the project activity. The biogas plan (project activity) has low impact in water patterns as it only collects the
	9. The Project shall demonstrate that measures to ensure soil protection and minimised erosion are in place prior to the commencement of the Project.			
	10. The Project shall demonstrate that measures will be undertaken to ensure that surface and ground waters are protected from erosion and that these measures are in place prior to the commencement of the Project.			

	11. Measures shall be incorporated to reduce soil erosion on slopes (e.g., hedge and tree rows, natural terracing, infiltration strips, permanent ground cover). For these measures, the concept of the effective slope length shall be taken into account.			landfill gas and combust it in flares or sell it to costumers. Moreover, the VVB team leader is local expert in Brazil and is aware about the applied environmental legislation. Therefore it is concluded that the principle has been taken into account.
	12. Impact shall be reassessed at a frequency appropriate to the context of the ecosystem affected. The monitoring approach and frequency shall be justified by reference to natural patterns and variations.			
	13. Where the Project takes place in a water scarce or water stressed area, the opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being considered and incorporated into the project design.			
	9. <u>Environment, ecology and land use</u>			
	9.1. Landscape Modification and Soil			
	1. The Project shall identify the functions and services provided by the landscape and demonstrate no net degradation in existing landscape function and services.	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations and it does not involve the use of land and soil for production.
	2. To ensure healthy soils the following aspects shall be identified, and appropriate measures shall be put in place to protect them: (a) Soil types, AND (b) Biota, AND (c) Erosion			
	3. Measures shall be incorporated to minimise soil degradation (e.g., through crop rotation, composting, no use of heavy machinery, use of N-fixing plants, reduced			

	tillage, no use of ecologically harmful substances).			
	4. Projects that involve the production, harvesting, and/or management of living natural resources by small-scale landholders and/or local communities shall adopt the appropriate and culturally sensitive sustainable resource management practices.			
	9.2. Vulnerability to Natural Disaster			
	5. The Project shall avoid or minimise the exacerbation of impacts caused by natural or man-made hazards, such as landslides or floods that could result from land use changes due to Projects. The Project Developer shall include mitigation measures (if possible), the emergency preparedness plan and response strategies. The Project Developer shall disclose appropriate information about emergency preparedness and response Projects, resources, and responsibilities to affected communities.	No	No mitigation measure is required for this indicator.	The activities of the PA do not lead to increase the vulnerability to natural disasters.
	9.3. Genetic Resources			
	6. Projects involving the use of GMOs are not eligible for Gold Standard Project Design Certification.	No	No mitigation measure is required for this indicator.	The PA does not have any impact by used GMOs.
	7. An assessment for the risk of GMO contamination from outside the Project area and reasonable and appropriate counter measures should be taken.			
	9.4. Release of pollutants			
	8.The Project shall avoid the release of pollutants. This applies to the release of pollutants to air, water, and land due to routine, non-routine and accidental circumstances.	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations and the PA

	9. The Project Developer shall ensure that pollution prevention and control technologies and practices consistent with national regulation or international good practice are applied during the Project life cycle.			has measures to avoid the release of pollutants. The project refers to the biogas collection and flaring and supplying biogas to consumer via pipeline, which are in accordance with regulations.
	10. All potential pollution sources that may result from the Project that cause the degradation of the quality of soil, air, surface and groundwater within the Project's area of influence shall be identified. Appropriate mitigation measures and monitoring shall be implemented to ensure the protection of resources. The project can use historical records, ongoing monitoring and reporting through data logging of physical measurements, online sources, government data. The recommended methods include quantitative documentation of all sources and volumes of water abstractions, use of weirs and gauges, flow meters, pump energy consumption, transpiration rates, government data.			
	9.5. Hazardous and Non-hazardous Waste			
	11. Projects shall avoid or, when avoidance is not feasible, minimise and control release of hazardous materials resulting from their production, transportation, handling, storage and use in the Project. Where avoidance is not possible, the health risks, including potential differentiated effects on men, women and children, of the potential use of hazardous materials shall be addressed appropriately.	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations and has all measures to avoid the release of hazardous and non-hazardous waste.

	12. Projects shall consider the use of less hazardous substitutes for such chemicals and materials and will avoid the manufacture, trade, and use of chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer.			
	13. All sources of waste and waste products shall be identified and classified. Waste products include amongst others: (a) Chemical wastes, AND (b) CoIners, AND (c) Fuels and oils, AND (d) Ian waste, AND (e) Rubbish (including metals, plastics, organic and paper products), AND (f) Abandoned buildings, machinery or equipment.			
	14. Where waste generation may not be avoided, the Project shall reduce the generation of waste, and recover and reuse waste in a manner that is safe for human health and the environment.			
	15. Where waste may not be recovered or reused, it shall be treated, destroyed, or disposed of in an environmentally sound manner that includes the appropriate control of emissions and residues resulting from the handling and processing of the waste material.			
	16. If the generated waste is considered hazardous, reasonable alternatives for its environmentally sound disposal will be adopted while adhering to the			

	limitations applicable to its transboundary movement.			
	17. The Project shall not make use of chemicals or materials subject to international bans or phase-outs. For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol.			
	9.6. Pesticides & Fertilisers			
	18. Projects involving pest management, the integrated pest management (IPM) and /or integrated vector management (IVM) approaches shall be adopted and aim to reduce reliance on chemical pesticides.	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations and the activity does not involve the application of pesticides and/or fertilisers.
	19. The health and environmental risks associated with pest management should be minimised with support, as needed, to institutional capacity development, to help regulate and monitor the distribution and use of pesticides and enhance the application of integrated pest management.			
	20. When Projects include pest management or the use of pesticides, pesticides that are low in human toxicity, known to be effective against the target species and have minimal effects on non-target species and the environment shall be selected.			
	21. There shall be a 'Chemical Pesticides Policy' that is documented, implemented and regularly updated. This policy shall include at a minimum: (a) Provisions for safe transport, storage,			

	handling and application, AND (b) Provisions for emergency situations.				
	22. The Project Developer shall not purchase, store, manufacture, trade or use products that fall in Classes IA (extremely hazardous) and IB (highly hazardous) of the World Health Organization Recommended Classification of Pesticides by Hazard.				
	23. Fertilisers shall be avoided, or their use shall be minimised and justified. If the aerial application of fertiliser is used, then measures shall be put in place to prevent drift.				
	9.7. Harvesting of Forests				
	24. The Project shall: (a) Enhance the sustainable management of forests, including the application of independent, credible certification for commercial, industrial-scale timber harvesting, AND (b) Maintain or enhance biodiversity and ecosystem functionality in areas where improved forest management is undertaken.	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations and the activity does not involve the harvesting of forests.	
	9.8. Food				
	25. The Project activity shall not negatively influence access to and availability of food for people affected.	No	No mitigation measure is required for this indicator.	The activity has no impact on quantity of food availability.	
	9.9. Animal husbandry				
	26. The welfare of animals shall be ensured by: (a) Provision of sufficient drinking water, AND (b) Access to daylight, AND (c) The prohibition of cattle trainers, AND (d) No hindrance in their sensory perception and performing	No	No mitigation measure is required for this indicator.	The activity does not involve animal husbandry.	

	their basic needs, AND (e) Management policies and staff training to prevent mistreatment (evidence of animal mistreatment shall be treated as an immediate Non-conformity).			
	27. Excessive or inadequate use of veterinary medicines shall be avoided. Thus, all medications shall be: (a) Administered strictly according to label and package instructions, OR (b) According to a trained veterinarian.			
	28. Injured or sick animals shall be treated and isolated, if necessary, for recovery.			
	29. Synthetic growth promoters including hormones shall not be administered.			
	30. Animals shall be exposed to the least stress possible during transportation and slaughtering.			
	31. Appropriate space per animal and stocking rates per land unit should be set according to their developmental and physical needs.			
	9.10. High Conservation Value Areas and Critical Habitats			
	32. No Project that potentially impacts identified habitats as identified above shall be implemented unless all of the following are demonstrated: (a) The risk of the Project negatively impacting the catchment and risks impacting project success shall be assessed and addressed to ensure its ongoing, long-term viability and impact on surrounding HCV and ecological assets. (b) No measurable adverse impacts on the criteria or biodiversity values for	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations and the activity does not impact any HCV areas and/or critical habitats. During the environmental licensing process for the CTL landfill, a specialized

	which the critical habitat was designated, and on the ecological processes supporting those biodiversity values; (c) A robust, appropriately designed, and long-term Habitats and Biodiversity Action Plan is in place to achieve net gains of those biodiversity values for which the critical habitat was designated.			consultancy firm was hired to carry on a study of the region's fauna and flora and assess the environmental impacts that the implementation of the CTL landfill would cause, as well as proposing measures to mitigate these impacts and respective environmental compensation, which resulted in the conservation and forest restoration of 137 ha of native Atlantic Forest vegetation. It is important to mention that the landfill is not the project activity. The biogas plan (project activity) has low impact in water patterns as it only collects the landfill gas and combust it in flares or sell it to costumers. Moreover, the VVB team leader is local expert in Brazil and is
	33. Within the Project the area that is managed by the Project Developer and the area of impact downstream, the following shall be identified and protected/enhanced. In the case of downstream impacts, the Project shall ensure mitigation is in place within the Project Boundary such that the Project shall not adversely affect these areas: (a) Existing patches of native tree species, AND (b) Single solitary stems of native tree species, AND (c) All freshwater resources including rivers, lakes, swamps, ephemeral water bodies and wells (d) Habitats of rare, threatened and endangered species, AND (e) Areas relevant for habitat connectivity shall be identified and managed to protect or enhance biological diversity.			
	34. If the Project is located in such habitats; the Project Developer shall: (a) Minimise unwarranted conversion or degradation of the habitat. (b) Identify opportunities to enhance the habitat as part of the Project. For Projects applying the Land Use & Forest Activity Requirements Projects, a minimum 10% of the Project area shall be			

	identified and managed to protect or enhance the biological diversity of native ecosystems would be followed (www.HCVnetwork.org). This area has to be located within the project region and managed by the Project Developer. The area may also include the areas of the requirement (for example, buffer zones for water bodies in the case of Land Use & Forests).			aware about the applied environmental legislation. Therefore it is concluded that the principle has been taken into account.
	35. The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being included in the Project design. The project can use mapping tools such as LEFT, IUCN Red List, IBAT or other appropriate nationally recognised tools may be used or visual inspection. The recommended methods include online tools, visual inspection, engineering or physical assessment, use historical data and verbal or written surveys with local residents.			
	9.11. Endangered Species			
	36. Under no circumstances shall the Project lead to the reduction or negative impact of any recognised Endangered, Vulnerable or Critically Endangered species	No	No mitigation measure is required for this indicator.	The PA is developed in compliance with Brazilian regulations and the activity does not impact any endangered species.
	37. Habitats of endangered species shall be specifically identified and managed to protect or enhance them.			
	38. The opinions and recommendations of an Expert Stakeholder shall be sought and demonstrated as being considered and incorporated into the project design.			
Findings	CL 05			

Conclusion	The validation team confirms that the PA meets all GS4GG Safeguarding Principles and Requirements.
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D.8. Stakeholder consultation requirements

Means of validation	Stakeholders' consultation have been carried out on 12/12/2022 and it could be evidenced that all required groups of stakeholders were invited.														
Findings	-														
Conclusion	The local stakeholder consultation has been carried out on 12/12/2022, in accordance with GUIDELINE - Stakeholder consultation and engagement. The verification team have access to all information provided during the consultation process^{/24-2/}. Therefore, all requirements for Local Stakeholders consultation from GS4GG have been fulfilled. All evidence were duly provided to the verification team^{/24/}. The validation team can confirm the following: 1. GS requirements on the grievance mechanism have been fulfilled through a registry book available at the company's address. 2. It can be confirmed that the minimum group of stakeholders to be consulted have been duly invited, as per Stakeholder Consultation and Engagement requirements, para 3.3.1, as follows: <table border="1"> <tr> <td>Local people, communities and/or representatives who are expected to be directly or indirectly affected (adversely affected or beneficiaries) by the project or may have an interest in the project</td><td>Flávio Teixeira dos Santos - Neighbour. Mercês da Anunciação Pereira - Jardim Limoeiro I Residents Association</td></tr> <tr> <td>Stakeholders with land-tenure rights within or adjacent to the project and marginalised individuals and groups</td><td>ECOURBIS (Local resident) João Bahia de Oliveira Junior Jose Adilson Ribeiro Genessis Messias P de Carvalho Nathalia Barbosa Valdir Jose da Silva</td></tr> <tr> <td>Local policymakers and representatives of local authorities</td><td>SP Regula - Municipality policy maker Mauro Haddad Néri Aila da Silva Gomes Luciana Mazzilli Mesquita David Tegangno</td></tr> <tr> <td>National government officials or National Focal Point, for example, Designated National Authority (DNA) or equivalent body</td><td>Sonia Regina Bittencourt - MCTI - Ministry of Science, Technology and Innovation.</td></tr> <tr> <td>Local non-governmental organisations (NGOs), Women Groups working on topics relevant to the project or working with communities who are likely to be affected by the project</td><td>Aureni Ferreira de Jesus Pavan - Casa de Lili - NGO</td></tr> <tr> <td>Gold Standard representative</td><td>help@goldstandard.org</td></tr> <tr> <td>Relevant international Gold Standard NGO Supporters with representation in the region and all Gold Standard NGO Supporters located in the host country of the project</td><td>Cool Effect (https://www.cooleffect.org/)</td></tr> </table>	Local people, communities and/or representatives who are expected to be directly or indirectly affected (adversely affected or beneficiaries) by the project or may have an interest in the project	Flávio Teixeira dos Santos - Neighbour. Mercês da Anunciação Pereira - Jardim Limoeiro I Residents Association	Stakeholders with land-tenure rights within or adjacent to the project and marginalised individuals and groups	ECOURBIS (Local resident) João Bahia de Oliveira Junior Jose Adilson Ribeiro Genessis Messias P de Carvalho Nathalia Barbosa Valdir Jose da Silva	Local policymakers and representatives of local authorities	SP Regula - Municipality policy maker Mauro Haddad Néri Aila da Silva Gomes Luciana Mazzilli Mesquita David Tegangno	National government officials or National Focal Point, for example, Designated National Authority (DNA) or equivalent body	Sonia Regina Bittencourt - MCTI - Ministry of Science, Technology and Innovation.	Local non-governmental organisations (NGOs), Women Groups working on topics relevant to the project or working with communities who are likely to be affected by the project	Aureni Ferreira de Jesus Pavan - Casa de Lili - NGO	Gold Standard representative	help@goldstandard.org	Relevant international Gold Standard NGO Supporters with representation in the region and all Gold Standard NGO Supporters located in the host country of the project	Cool Effect (https://www.cooleffect.org/)
Local people, communities and/or representatives who are expected to be directly or indirectly affected (adversely affected or beneficiaries) by the project or may have an interest in the project	Flávio Teixeira dos Santos - Neighbour. Mercês da Anunciação Pereira - Jardim Limoeiro I Residents Association														
Stakeholders with land-tenure rights within or adjacent to the project and marginalised individuals and groups	ECOURBIS (Local resident) João Bahia de Oliveira Junior Jose Adilson Ribeiro Genessis Messias P de Carvalho Nathalia Barbosa Valdir Jose da Silva														
Local policymakers and representatives of local authorities	SP Regula - Municipality policy maker Mauro Haddad Néri Aila da Silva Gomes Luciana Mazzilli Mesquita David Tegangno														
National government officials or National Focal Point, for example, Designated National Authority (DNA) or equivalent body	Sonia Regina Bittencourt - MCTI - Ministry of Science, Technology and Innovation.														
Local non-governmental organisations (NGOs), Women Groups working on topics relevant to the project or working with communities who are likely to be affected by the project	Aureni Ferreira de Jesus Pavan - Casa de Lili - NGO														
Gold Standard representative	help@goldstandard.org														
Relevant international Gold Standard NGO Supporters with representation in the region and all Gold Standard NGO Supporters located in the host country of the project	Cool Effect (https://www.cooleffect.org/)														

	The VVB has conducted interviews with one stakeholder during the on-site inspection by phone call, previously scheduled. This process corresponds to a transition from CDM to GS4GG. The stakeholder consultation has already been carried out and validated during the validation phase of the CDM project activity. Nevertheless, VVB considers that the interviewee is a relevant stakeholder to the project activity as a community leader and therefore the interview fulfils with GS requirements. The project is implemented since 2013, duly licensed and relevant to the community. All stakeholders input have been taken into account as it can be observed in the Stakeholders Consultation report ^{/24-2/}.
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D.9. Implementation of sampling plan

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

D.10. Implementation of monitoring plan

D.10.1. Data and parameters fixed ex ante

Means of verification	The ex-ante parameters were verified in order to check its consistency with CDM tools and guidance to calculate the ex-ante value and methodological requirements for the baseline, project and leakage emission calculations. The fixed parameters and their values are: Parameters related to SDG 13.2 and SDG 7 - EF_{grid,BM,2018} (<i>Build margin emission factor for the grid in year y</i>): 0.1370 tCO₂/MWh; Parameters related to SDG 13.2 - OX_{top_layer} (<i>Fraction of methane that would be oxidized in the top layer of the SWDS in the baseline</i>): 0.1; - GWP_{CH4} (<i>Global warming potential of CH₄</i>): 28 tCO_{2e}/tCH₄; - NCV_{CH4}: (<i>Net calorific value of methane at reference conditions</i>) TJ/tCH₄: 0.0504 TJ/tCH₄ - Ru (<i>Universal ideal gas constant</i>): 0.008314 Pa.m³/kmol.K; - Waste composition - o Wood and wood products: 2.21%; - o Pulp, paper and cardboard (other than sludge): 8.90%; - o Food, food waste, beverages and tobacco (other than sludge): 47.08%; - o Textiles: 19.23%; - o Garden, yard and park waste: 0%; - o Glass, plastic, metal, other inert waste: 22.57%; - SPEC_{flare} (<i>Manufacturer's flare specifications for temperature, flow rate and maintenance schedule</i>); - P_{ref} (<i>Atmospheric pressure at reference conditions</i>): 101,325 Pa; - T_{ref} (<i>Temperature at reference conditions</i>): 273.15 K; - η_{PJ} (<i>Efficiency of the LFG capture system that is be installed in the project activity</i>): 85%;
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	- Φ_{default} (Default value for the model correction factor to account for model uncertainties): 0.75; - OX (Oxidation factor): 0.1; - F (Fraction of methane in the SWDS gas): 0.5; - DOC_{r,default} (Default value for the fraction of degradable organic carbon in MSW that decomposes in the SWDS): 0.5; - MCF_{default} (Methane correction factor): 1.0; - DOC_j (Fraction of degradable organic carbon in the waste type j); - o Wood and wood products: 43%; - o Pulp, paper and cardboard (other than sludge): 40%; - o Food, food waste, beverages and tobacco (other than sludge): 15%; - o Textiles: 24%; - o Garden, yard and park waste: 20%; - o Glass, plastic, metal, other inert waste: 0%; - k_j (Decay rate for waste type j^{24/}) - o Pulp, paper and cardboard (other than sludge), textiles: 0.07 - o Wood, wood products and straw: 0.035; - o Other (non-food) organic putrescible garden and park waste: 0.17; - o Food, food waste, sewage sludge, beverages and tobacco: 0.40; - MM_i (Molecular mass of greenhouse gas i): 16.04 kg/kmol; - MM_k (Molecular mass of greenhouse gas k): 28.01 kg/kmol; - MM_{H2O} (Molecular mass of water): 18.0152 kg/kmol; - DEFT_{SP,y} (Default emission factor from the supply of LFG to consumers through a dedicated pipeline): 2.2 tCO₂/TJ However not all parameters have been determined in accordance with GS4GG requirements
Findings	CL 03
Conclusion	The values in the MR and corresponding emission reduction calculations spreadsheet are consistent with the approved PDD. The applied values are correct.

D.10.2. Data and parameters monitored

Means of verification	The monitoring plan has been verified in order to check its consistency with CDM tools and guidance to determine the baseline, project and leakage emission calculations. The monitored parameters applied to this project activity are: - SDG 7.2.1 and 13.2.1 - EF_{grid,CM,y} CO₂ emission factor of the Brazilian grid electricity during the year y - SDG 7.2.1 and 13.2.1 - EF_{grid,OM,y} Operating margin emission factor of the Brazilian grid - SDG 7.2.1 and 13.2.1 - TDL_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 - SDG 7.2.1 and 13.2.1 - EC_{PJ1,y} = EG_{EC1,y}: Quantity of electricity consumed from the grid by the project activity during the year y - SDG 7.2.1 and 13.2.1 - EC_{PJ2,y} = EG_{EC2,y}: Quantity of electricity consumed from diesel generator by the project activity during the year y - SDG 7.2.1 and 13.2.1 - EF_{CO2,NG,y}: Average CO₂ emission factor of natural gas in the natural gas network or dedicated pipeline or in the trucks in year y - SDG 7.2.1 and 13.2.1 - FC_{i,j,y}: Quantity of fuel type i combusted in process j during the year y - SDG 7.2.1 and 13.2.1 - EF_{CO2,LPG,y}: Weighted average CO₂ emission factor of LPG in year y
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	- SDG 7.2.1 and 13.2.1 – $NCV_{fuel,y}$: Weighted average net calorific value of fuel type i in year y - SDG 13.2.1 - Management of SWDS - SDG 7.2.1 and 13.2.1 – $EG_{PJ,y} = EC_{BL,k,y}$: Amount of electricity generated using LFG by the project activity in year y - SDG 7.2.1 and 13.2.1 – $O_{pj,h}$: Operation of the equipment that consumes the LFG - SDG 7.2.1 and 13.2.1 – $F_{CH4,NG,y}$: Amount of methane in the LFG which is sent to the customer through a dedicated pipeline in year y ($t_{CH4/y}$) - SDG 13.2.1 – $V_{t,db}$: Volumetric flow of the gaseous stream in time interval t on a dry basis - SDG 13.2.1 – $V_{t,wb}$: Volumetric flow of the gaseous stream in time interval t on a wet basis - SDG 13.2.1 – $v_{i,t,db}$: Volumetric fraction of greenhouse gas i in a time interval t on a dry basis - SDG 13.2.1 – $v_{i,t,wb}$: Volumetric fraction of greenhouse gas i in a time interval t on a wet basis - SDG 13.2.1 – T_t: Temperature of the gaseous stream in time interval t - SDG 13.2.1 – P_t: Pressure of the gaseous stream in time interval t - SDG 13.2.1 – Status of biogas destruction device: Operational status of biogas destruction devices - SDG 13.2.1 – $P_{H2O,t,Sat}$: Saturation pressure of H_2O at temperature T_t in time interval t - SDG 7.2.1 $V_{i,RG,m}$ i: Volumetric fraction of component i in the residual gas on a dry basis in the minute m where $i = CH_4, CO, CO_2, O_2, H_2, H_2S, NH_4, N_2$ - SDG 13.2.1 – $V_{RG,m}$: Volumetric flow of the residual gas on a dry basis at reference conditions in the minute m - SDG 13.2.1 – $M_{RG,m}$: Mass flow of the residual gas on a dry basis at reference conditions in the minute m - SDG 13.2.1 – $V_{O2,EG,m}$: Volumetric fraction of O_2 in the exhaust gas on a dry basis at reference conditions in the minute m - SDG 13.2.1 – $F_{CH4,EG,t}$: Mass flow of methane in the exhaust gas of the flare on a dry basis at reference conditions in the time period t (kg) - SDG 13.2.1 – $Flame_m$: Flame detection of flare in the minute m - SDG 13.2.1 – $Maintenance_y$: Maintenance events completed in year y - SDG 13.2.1 – $T_{EG,m}$: Temperature in the exhaust gas of the enclosed flare in minute m - GSDG 4 Quality—ducation-4.4 - - By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship: Number of people from local community attending company's socioenvironmental activities events. Based on monthly attendance list and/or monthly activities reports - SDG 7 – Amount of methane selling to costumers through dedicated pipeline - SDG 7- Amount of electricity generated using LFG by the project activity in year y. It refers to the same parameter $EG_{PJ,y} = EC_{BL,k,y}$. - SDG 5 - Quantity of women in managerial positions - SDG 8 – Safeguarding principle 6.1: Total number of jobs generated as a result of the project activity. - Safeguarding principle 3: Environmental Permit
Findings	-
Conclusion	The parameters reported in the PDD are in accordance with registered CDM PDD and GS4GG rules and requirements.

D.11. Assessment of formulae of emission reductions or net removals

D.11.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks and baseline SDGs

Means of verification	The calculations of baseline emission will be done in accordance with applied methodology. The equation used is as follows: $BE_y = BE_{CH4,y} + BE_{EC,y} + BE_{NG,y}$ Where: - BE_y: Baseline emissions in year y; - $BE_{CH4,y}$: Baseline emissions of methane from the SWDS; - $BE_{EC,y}$: Baseline emissions associated with electricity generation. - $BE_{NG,y}$: Baseline emissions associated with natural gas use. - The baseline emissions are calculated using the following equation: $BE_{CH4,y} = ((1 - OX_{top_layer}) \times F_{CH4,PJ,y} - F_{CH4,BL,y}) \times GWP_{CH4},$ where: - $BE_{CH4,y}$: Baseline emissions of methane from the SWDS, in year y; - OX_{top_layer}: Fraction of methane that would be oxidized in the top layer of the baseline; - $F_{CH4,PJ,y}$: Amount of methane in the LFG which is flared and/or used in the project, in year y; - $F_{CH4,BL,y}$: Amount of methane in the LFG that would be flared in the baseline in year y; - GWP_{CH4}: Global warming potential value of methane. $BE_{EC,y} = \sum_k EC_{BL,k,y} \times EF_{EL,k,y} \times (1 + TDL_{k,y})$ Where: <table> <tr> <td>$BE_{EC,y}$</td><td>= Baseline emissions from electricity generation in year y (tCO₂/yr)</td></tr> <tr> <td>$EC_{BL,k,y}$</td><td>= Net amount of electricity generated using LFG in year y (MWh/yr)</td></tr> <tr> <td>$EF_{EL,k,y}$²</td><td>= Emission factor for electricity generation for source k in year y (tCO₂/MWh)</td></tr> <tr> <td>$TDL_{k,y}$</td><td>= Average technical transmission and distribution losses for providing electricity to source k in year y.</td></tr> </table> $BE_{NG,y} = 0.0504 \times F_{CH4,NG,y} \times EF_{CO2,NG,y}$ Where: <table> <tr> <td>$BE_{NG,y}$</td><td>= Baseline emissions associated with natural gas use in year y (tCO₂/yr)</td></tr> </table>	$BE_{EC,y}$	= Baseline emissions from electricity generation in year y (tCO ₂ /yr)	$EC_{BL,k,y}$	= Net amount of electricity generated using LFG in year y (MWh/yr)	$EF_{EL,k,y}$ ²	= Emission factor for electricity generation for source k in year y (tCO ₂ /MWh)	$TDL_{k,y}$	= Average technical transmission and distribution losses for providing electricity to source k in year y .	$BE_{NG,y}$	= Baseline emissions associated with natural gas use in year y (tCO ₂ /yr)
$BE_{EC,y}$	= Baseline emissions from electricity generation in year y (tCO ₂ /yr)										
$EC_{BL,k,y}$	= Net amount of electricity generated using LFG in year y (MWh/yr)										
$EF_{EL,k,y}$ ²	= Emission factor for electricity generation for source k in year y (tCO ₂ /MWh)										
$TDL_{k,y}$	= Average technical transmission and distribution losses for providing electricity to source k in year y .										
$BE_{NG,y}$	= Baseline emissions associated with natural gas use in year y (tCO ₂ /yr)										

² According to the "Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion",
 $EF_{EL,k,y} = EF_{grid,CM,y}$

	$EF_{CO_2,NG,y}$ = Average CO ₂ emission factor of natural gas in the natural gas network or dedicated pipeline or in the trucks in year y (tCO ₂ e/TJ). $F_{CH_4,NG,y}$ = Amount of methane in the LFG which is sent to the natural gas distribution network or dedicated pipeline or to the trucks in year y (tCH ₄ /yr)
Findings	-
Conclusion	The validation team confirms that appropriate methods and formulae for calculating baseline GHG emissions have been followed, which are in accordance with applied methodology and tools;

D.11.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks and Project SDGs

Means of verification	Project emission calculations will be done in accordance with registered monitoring plan, applied methodology and tool. The equation used is as follows: $PE_y = PE_{EC,y} + PE_{FC,j,y} + PE_{SP,j,y}$ Where: - PE_y: Project emissions in year y; - $PE_{EC,y}$: Emissions from consumption of electricity due to the project activity, in year y; - $PE_{FC,j,y}$: Emissions from consumption of fossil fuels due to the project activity, for purpose other than electricity generation, in year y (fossil fuels: diesel and LPG). - $PE_{SP,y}$: Emissions from the supply of LFG to consumers through a dedicated pipeline, in year y (t CO₂/yr) The project emissions are calculated using the following equations: $PE_{EC1,y} = EC_{PJ1,y} \times EF_{grid,CM,y} \times (1 + TDL_y),$ where: - $PE_{EC1,y}$: Project emissions from electricity consumption from the grid; - $EC_{PJ1,y}$: Quantity of electricity consumed from the grid by the project activity, in year y; - $EF_{grid,CM,y}$ = Emission factor for the grid in year y; - TDL_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. $PE_{EC2,y} = EC_{PJ2,y} \times EF_{diesel\ generator,y} \times (1 + TDL_y),$ where: - $PE_{EC2,y}$: Project emissions from electricity consumption from an off-grid captive power plant (diesel generator); - $EC_{PJ2,y}$: Quantity of electricity consumed from diesel generator by the project activity, in year y; - $EF_{grid,CM,y}$ = Emission factor for the diesel generator in year y; - TDL_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.
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	$PE_{FC,j,y} = \sum_i FC_{i,j,y} \times COEF_{i,y}$ where: - $PE_{FC,j,y}$ = Project emissions from fossil fuel combustion in process j during the year y; - $FC_{i,j,y}$ = Quantity of fuel type i combusted in process j during year y; - $COEF_{i,y}$ = CO₂ emission coefficient of fuel type i in year y. $PE_{SP,y} = 0.0504 \times DEFT_{SP,y} \times F_{CH4,NG,y}$ where: - $PE_{SP,y}$ = Project emissions from the supply of LFG to consumers through a dedicated pipeline, in year y (t CO₂/yr); - $DEFT_{SP,y}$ = Default emission factor from the supply of LFG to consumers through a dedicated pipeline (tCO₂/TJ) - $F_{CH4,NG,y}$ = Amount of methane in the LFG which is sent to the consumer through a dedicated pipeline in year y (tCH₄/yr).
Findings	CL 11
Conclusion	The validation team confirms that appropriate methods and formulae for calculating project GHG emissions have been followed;

D.11.3. Calculation of leakage GHG emissions

Means of verification	No leakage emissions are to be considered, as per the applied methodology. $LE_y = 0 \text{ tCO}_2\text{e}$
Findings	-
Conclusion	The validation team confirms that appropriate methods and formulae for calculating baseline GHG emissions have been followed.

D.12. Sustainable development co-benefits

Means of validation	The project will positively contribute to the following: SDG 4: Quality Education - SDG Target: 4.4: By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship; - Indicator: Number of people from local community attending company's socioenvironmental activities events. Based on monthly attendance list and/or monthly activities reports. SDG 5: Gender Equality: - SDG Target: 5.5: Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life - Indicator: The parameter monitored would be "Quantity of women in managerial positions"
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	SDG7- Affordable and clean energy - SDG target: 7.2 By 2030, increase substantially the share of renewable energy in the global energy mix - Indicators: the following parameters will be monitored: - o Amount of electricity generated using LFG by the project activity in year y. - o Amount of LFG selling to costumers through dedicated pipeline. SDG 8 - Decent Work and Economic Growth - SDG target: 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value - Indicator: Total jobs generated as a result of the project SDG 13- Climate action: - SDG Target: 13.2: Integrate climate change measures into national policies, strategies and planning. Indicator: Reduction in GHGs emissions -
Findings	N/A
Conclusion	SDG impacts are well discussed in the PDD. The validation team confirms the technology which is implemented reflects the good practice in the host country also contributing to sustainable development of the host country. The assessment of all monitored parameters related to above SDGs, refer to section E.5.2 above.

SECTION E. Internal quality control

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

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

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

SECTION F. Validation opinion

ESPL was contracted by EcoUrbis Ambiental S.A for Gap validation of the project activity: CTL Landfill Gas Project, in Brazil. The Gap validation was performed on the basis of rules and requirements defined by GS4GG principles and requirements.

BENG Consultancy is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

ESPL commenced the validation based on the baseline and monitoring methodology ACM0001 – version 19.0, the monitoring plan contained in the registered PDD (CDM) and draft Transition form for GS4GG.

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

The validation team confirms that:

- The project activity is fulfilling all GS4GG transition requirements
- The Sustainable Development Goals claimed are reliable and achievable
- The project information has been correctly transferred from CDM registered PDD to transition form without material misstatement
- the project activity was found implemented as per the description given in the registered PDD; and
- the actual operation conforms to the description in the registered PDD.

In our opinion, the estimated GHG emissions reductions reported for the project activity in the PDD are reliable. The GHG emission reductions were correctly estimated based on the approved baseline and monitoring methodology ACM0001 – version 19.0 and the monitoring plan contained in the transition form/PDD.

ESPL is able to declare that the estimated emission reductions of project activity "CTL Landfill Gas project", during the proposed crediting period are achievable as follows:

Sustainable Development Goals Targeted / SDG Impact	Estimated in PDD for the CP	Units or products
SDG 13 (Climate action) / 13.2 emission reductions achieved	1,203,298	tCO _{2e} /y
SDG 4 (Quality Education) / Number of people from local community attending company's socioenvironmental activities events. Based on monthly attendance list and/or monthly activities reports	1	Participants
SDG 5 (Gender equality) Quantity of women in managerial positions	1	Women in leadership and decision-making positions
SDG 7 (Affordable and Clean Energy) / 7.2 – Amount of	35,369	MWh/y

electricity generated using LFG by the project activity in year y		
SDG 8 (Decent Work and Economic Growth) - Total jobs generated as a result of the project	1	Jobs/y

Appendix 1. Abbreviations

Abbreviations	Full texts
ACM	Approved Consolidated Methodology
BE	Baseline Emissions
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CH ₄	Methane
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CP	Crediting Period
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact Assessment
EPE	Energy Research Company of the Ministry of Mines and Energy – Brazil
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Green House Gas
GS	Gold Standard
GSC/GSP	Global Stakeholder Consultation Process
GS4GG	Gold Standard for Global Goals
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
LFG	Landfill gas
KP	Kyoto Protocol
LoA	Letter of Approval/Authorization
MP	Monitoring Plan
OM	Operating Margin
PA	Project Activity
PCP	Project Cycle Procedure
PDD	Project Design Document
PE	Project Emissions
PP	Project Participant
PS	Project Standard
tCO ₂ e	Tonnes of Carbon di oxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
VT	Verification Team
VVS	Validation and Verification Standard

Appendix 2. Competence of team members and technical Reviewers

Competence Statement			
Name	Marcelo Sebben		
Country	Brazil		
Education	M.Sc. (Sustainable Energy System) B. Eng. (Chemical Engineering)		
Experience	+12.5 Years		
Field	Chemical process industry, CDM, Energy, Climate Change		
Approved Roles			
Team Leader	Yes		
Validator	Yes		
Verifier	Yes		
Methodology Expert	Yes (ACM0001, ACM0002, ACM0006, AM0065, AMS ID, AMS-I.E, AMS-I.C, AM0026, AMS-I.A, AMS-I.F, AMS-III.E, AMS-III.H, AMS-III.I. AMS-III.J. GS: Ecologically Sound Fuel Switch to Biomass with Reduced Energy Requirement, GS: Technologies and Practices to Displace Decentralized Thermal Energy Consumption)		
Local expert	Brazil, Chile, Honduras, Colombia		
Financial Expert	Yes		
Technical Reviewer	No		
TA Expert	Yes (TA 1.1, 1.2, 4.1, 5.1, 9.1, 13.1)		
Reviewed by	Shreya Garg	Date	29/07/2020
Approved by	Anshika Gupta	Date	29/07/2020

Competence Statement			
Name	Camila Kamimura		
Education	B.Sc. Environmental Engineer		
Experience	9+ years		
Field	Environmental Management		
Approved Roles			
Team Leader	NO		
Validator	YES		
Verifier	YES		
Methodology Expert	NO		
Local expert	YES (Brazil)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Trainee	YES		
Reviewed by	Shifali Guleria (Quality Manager)	Date	20/06/2023
Approved by	Deepika Mahala (Technical Manager)	Date	20/06/2023

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

Competence Statement			
Name	Kaviraj Singh		
Country	India		
Education	Ph.D. (Environmental Engineering), IIT Delhi Masters (Energy & Environmental), DAVV Indore		
Experience	15 Years +		
Field	Climate Change & Environment		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.D., AMS-II.D., ACM0006, AMS-I.A., AMS-I.C., AMS-II.B., AMS-III.H, ACM0002, ACM0001, AM0080, ACM0018		
Local expert	YES (India)		
Financial Expert	YES		
Technical Reviewer	YES		
TA Expert	YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1, TA 13.2)		
Reviewed by	Shreya Garg	Date	12/02/2020
Approved by	Anshika Gupta	Date	12/02/2020

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	Gold Standard	Principles & Requirements	Ver 1.2	Others
2.	Gold Standard	VVB-requirements	Ver 1.1	Others
3.	Gold Standard	Transition request form – Project	Version 1.0	Others
4.	Gold Standard	Monitoring report Template	version 1.1	Others
5.	PP	Transition form (draft)	version 1.1 – 18/04/2023	PP
6.	PP	Transition form (CTL Landfill Gas Project)(revised/final)	version 2 - 12/07/2023 Version 3 – 19/09/2023 Version 3.1 – 21/09/2023 Version 4.1 – 25/11/2023 Version 5 – 27/01/2024	PP
7.	PP	Ex-ante ER calculations spreadsheet for the new CP	Version 4	PP
8.	Google Maps	<u>Geographical coordinates</u> The geographical coordinates of project activity have been checked at google maps	https://www.google.com/maps/place/23%C2%B037'52.2%22S+46%C2%B025'30.3%22W/@-23.6311534,-46.4276555,674m/data=!3m2!1e3!4b1!4m4!3m3!8m2!3d-23.6311583!4d-46.4250806?entry=ttu	Other
9.	VVB	<u>Pictures of equipment and process taken during the On site inspection</u>	June/2023	Others
10.	PP	Registered PDD	version 25 – 05/10/2020	Others
11.	UNFCCC	Project activity in UNFCCC website	https://cdm.unfccc.int/Projects/DB/LRQA_Ltd1332768548.38/view	Other
12.	Earthood	1. Validation report on renewal of CP issued on 05/10/2020 by Earthood	https://cdm.unfccc.int/UserManagement/FileStorage/WH5Q8OS	Other

		2. Validation report of CDM project for CTL Landfill Gas project, reference # TCOCT100098_ECURB_C Report, Version 04.1, issued by LRQA Business Assurance on 18/03/2012	PAZ3J6RXEVI40D29L1N7BUG https://cdm.unfccc.int/UserManagement/FileStorage/L6VPJDAK/N0WFUYH4R873XCZ/EGMBTQI	
13.	RINA	Verification report of 1 st monitoring period from 2 nd CP – issued by RINA on 11/03/2021	Version 1.1 Aa	other
14.	PP	Raw data Spreadsheets	Monthly spreadsheets from January/2021 to April/2023	PP
15.	UNFCCC	<u>Methodology</u> ACM0001 – Flaring or use of landfill gas	version 19.0	Others
16.	UNFCCC	<u>Methodological tools</u> - TOOL02 – Combined tool to identify the baseline scenario and demonstrate additionality	version 07.0	Others
		- TOOL03 – Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion	version 03.0	
		- TOOL04 – Emissions from solid waste disposal sites	version 08.0	
		- TOOL05 – Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation	version 03.0	
		- TOOL06 – Project emissions from flaring	version 03.0.0	
		- TOOL08 – Tool to determine the mass flow of a greenhouse gas in a gaseous stream	version 03.0	
		- TOOL09 – Determining the baseline efficiency of thermal or electric energy generation systems	version 02.0	
		- TOOL10 – Tool to determine the remaining lifetime of equipment	version 01.0	
17.	Enel	<u>Invoices</u> 1. Electricity	January/2021 to April/2023	PP
	Ultragaz	2. LPG	04/05/2021	

		8. Grievance mechanism book placed at the Project Activity Plan entrance		
25.	GASGRID METAGAS	<u>Contracts of Biogas supply</u> 1. Contract between ECOURBIS and GASGRID for sold of biogas for energy generation 2. Contract between Ecourbis and Metagas for biogas purification	06/02/2018 01/11/2016	Other
26.	PP	<u>Declarations</u> 1. A declaration from Project developers (Ecourbis) that the project will not claim VERs/CERs from the same vintage from GS and CDM 2. Declaration from project developer stating that no ODA is provided under the condition that the credits generated by the project will be transferred, either directly or indirectly, to the donor country providing ODA support	29/08/2023 03/01/2023	PP
27.	PP	<u>Gender sensitive evidences</u> 1. Company's organigram 2. Employment list 3. Brazilian Signature Evidence to the Convention on the elimination of All Forms of Discrimination against Women	https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtds_g_no=IV-8&chapter=4&clang=_en	
28.	PP	<u>Lifetime of project activity Article: "Landfill-Gas-to-Energy Projects: Analysis of Net Private and Social Benefits", issued by 2005 American Chemical Society; VOL. 39, NO. 19, 2005 / ENVIRONMENTAL SCIENCE & TECHNOLOGY, stating lifetime between 25 and 50 years</u>	https://drive.google.com/file/d/1A0jg0KjDbexUUVg_w1kbk7fAaK4ZCx/view?usp=sharing	other

29.	-	IPCC publications	www.ipcc-nggip.iges.or.jp	Other
30.	-	UNFCCC	http://cdm.unfccc.int	Other

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

Table 1. FARs from previous verification

FAR ID	01	Section no.	XX	Date: XX
Description of FAR				
N/A				
Project participant response				Date: XX
Documentation provided by Project Owner				
VVB assessment				Date:

Table 2. CLs from this Project Validation

CL ID	01	Section no.	D.1	Date : 02/07/2023
Description of CL				
<i>The following inconsistencies have been observed in the transition request form</i> - pg 4: It is stated that the crediting period started prior than 01/01/2016, which is not consistent with actual start date of current crediting period. - Pg 6: it is confirmed that all information different from original PDD is in tracking changes. Nevertheless, the ERs are not in accordance with the original PDD and no tracking changes was observed in the values. - Pg 8 onwards: check the "No" boxes when they are applicable. - Pg 18 to 20: the page is unformatted. - Page 26: it is not clear whether the project is being or has been deregistered from CDM - Pg 27: the annual average and total estimated GHG emission reductions are not in accordance with ER calculations provided - Pg 129: section B.6.3 last line of table and section B.6.4: PE and ERs estimated for 2025 do not take into account the period until 31/03/2025 of the crediting period.				
Project participant response				Date : 12/07/2023
1. CP start date defined as after 01/01/2016 2. Track changes corrected for ERs table values 3. Yes and No boxes fulfilled 4. Amended 5. Included: Also, the CDM project will remain active once met the Gold Standard registration. 6. Amended 7. Amended				
Documentation provided by project participant				
Ecourbis_V1.0-Transition-request-form-project 2023.07 v2 JAS				
DOE assessment				Date: 10/08/2023

1. Information has been duly adjusted in the transition annex
2. It is confirmed that all significant changes in the new version of the PDD are in tracking changes
3. "No" boxes have been duly checked when applicable along the transition report
4. Pages are now correctly formatted
5. It is clear now that the project will remain registered under CDM but the project participants will not claim emission reductions from both standards for the same vintage.
6. Values have been updated in section A.1 of the PDD
7. Information has now been amended in the PDD, which is in accordance with estimated calculations.

CL is closed

CL ID	02	Section no.	D.1	Date	: 02/07/2023
Description of CL					
<i>Transition form pg 19 and section B.7.1 and MR: the SDG impact related to SDG 4 (Based on Internal Reports of the company Education Program) is not clearly defined.</i>					
Project participant response					Date : 13/02/2023
<i>SDG impact amended to "Local community socioenvironmental activities, based on Internal Reports of the company Education Program"</i>					
Documentation provided by project participant					
<i>Ecourbis_V1.0-Transition-request-form-project 2023.07 v2 JAS</i>					
<i>MR version 2</i>					
DOE assessment					Date: 18/03/2023
Information has been duly amended in the above documents. It is now clear that the parameter refers to socioenvironmental activities applied in local communities and the evidences would be attendance lists of these activities.					
CL is closed					

CL ID	03	Section no.	D.2.3	Date	: 02/07/2023
Description of CL					
<i>Transition form pg 29, section A.1.1: eligibility criteria has not been based on Activity requirements defined for the project activity in page 17 of the document (Renewable energy requirements)</i>					
Project participant response					Date : 13/02/2023
<i>Activity requirement applied amended to Renewable energy Activities</i>					
Documentation provided by project participant					
<i>Ecourbis_V1.0-Transition-request-form-project 2023.07 v2 JAS</i>					
DOE assessment					Date: 18/03/2023
It has been observed that the activity requirements applied to the project are Renewable Energy Activities. The eligibility criteria is now in accordance with GS4GG requirements.					
CL is closed					

CL ID	04	Section no.	D.6	Date	: 02/07/2023
Description of CL					
<i>Section C of the transition annex: The following issues have been found:</i>					
- The subsections C.1.1 and C.2.2 are not completed as required by instructions for completing the PDD - Section C.2.1, the 2nd crediting period length is not in accordance with GS4GG rules					

Project participant response	Date : 12/07/2023
Section C.1.1 amended to 29/02/2012, which is the estimated date of the purchase of main equipment, as mentioned in the original CDM PDD.. Section C.2.1 amended in accordance with related footnote Section C.2.2 amended to 5 years and 0 months (The total length will not be more than 15 years).	
Documentation provided by project participant	
Ecourbis_V1.0-Transition-request-form-project 2023.07 v2 JAS	
DOE assessment	Date: 10/08/2023
- Subsections C.1.1 and C.2.2 are now completed as required by GS4GG requirements. - Subsection C.2.1: the CP length is now in accordance with GS4GG requirements.	
<u>CL is closed</u>	

CL ID	05	Section no.	D.1	Date : 02/07/2023
Description of CL				
Transition annex, Section Safeguarding principle 9.5: Hazardous and Non-hazardous waste. In the justification only reference to hazardous waste is being done, unlike required by the principle.				
Project participant response				Date : 12/07/2023
Amended to: Project does not involve emission of waste different from Urban Solid Waste (USW), which has a proper operational license obtained from the local environmental agency.				
Documentation provided by project participant				
Ecourbis_V1.0-Transition-request-form-project 2023.07 v2 JAS				
DOE assessment				Date: 10/08/2023
Information has been duly amended and it is now consistent in Section Safeguarding principle 9.5.				
<u>CL is closed</u>				

CL ID	06	Section no.	E.7.2	Date : 02/07/2023
Description of CL				
Template of transition request form applied is not the latest version available in the GS website.				
Project participant response				Date : 12/07/2023
Transition request form template updated to: PUBLICATION DATE xx/04/2021 VERSION 1.0				
Documentation provided by project participant				
Ecourbis_V1.0-Transition-request-form-project 2023.07 v2 JAS				
DOE assessment				Date: 10/08/2023
The template is now the latest available version.				
<u>CL is closed</u>				

Table 3. CARs from this Project Validation

CAR ID	01	Section no.	D.1	Date : 02/07/2023
Description of CAR				

Excel "2022 10 CTL GS_VERs Spreadsheet v1" – estimated ERs

1. The GWP_{CH4} value applied in the estimated ER calculations, tab baseline emissions, cells AB9 to AB19 does not correspond to the correct value applied for post 2021 as per GS4GG guidelines and AR5 IPCC report.
2. Tab Emission reductions: the applied value in the cell H22 does not take into account only the months applicable to this crediting period.

Project participant response **Date :** 12/07/2023

Amended

Documentation provided by project participant

2022 10 CTL GS_VERs Spreadsheet v2

DOE assessment **Date:** 10/02/2023

Calculations were duly corrected in the Estimated ER calculations spreadsheet.

CAR is closed

CAR ID 02 **Section no.** x **Date :** 14/01/2024

Description of CAR

CAR raised by GS reviewer: Evidence of project start date to be checked and confirmed by VVB

Project participant response **Date :** 14/01/2024

Project starting date correctly addressed as being 29/02/2012. Information included in the original PDD

Documentation provided by project participant

CDM PDD^{10/}

DOE assessment **Date:** 22/01/2024

Information is already included and assessed in the section D.2.3, item 4.4.1, where it is confirmed that the start date of the project activity, as per Principle requirements paragraph 4.1.39 was on 29/02/2012. Considering that this project was already validated in the CDM, the evidence was also validated and the CDM PDD has been used as evidence of this process. Information has also been include in section D.6. In fact, the start date has been estimated in the original CDM PD, which was validated in that program. The additionality has been considered this start date as it was the information available at that time. Therefore, the VVB agrees that the mentioned date has been considered the start date of the project activity, which is the estimated date for the purchase date of the main equipment. It is important to state that this process refers to a transition from CDM to GS4GG and therefore the additionality is not to be reassessed.

CAR is closed

CAR ID 02 **Section no.** x **Date :** 14/01/2024

Description of CAR

CAR raised by GS reviewer: Please provide all applicable clearances at the time of design certification

Project participant response **Date :** 14/01/2024

Main clearance Operation License # 30012899 being valid until 09/04/2026 has been provided to VVB

Documentation provided by project participant

Operation License # 30012899

DOE assessment **Date:** 22/01/2024

The main clearance refers to the operational license, which has been provided to the validation team^{/19/} (Operation License # 30012899) being valid until 09/04/2026

CAR is closed

CAR ID	03	Section no.	x	Date : 14/01/2024
Description of CAR				
<i>CAR raised by GS reviewer:</i> VVB to ensure that the Project has completed Validation (defined as the date of submission of Validation Report by the VVB) within two years of successful listing of the project.				
Project participant response				Date : 14/01/2024
Project has completed Validation within two years of successful listing of the project. Listed project activity in SustainCert Pipeline in January 2023, submitted to Sustaincert on 04/10/2023.				
Documentation provided by project participant				
PDD version 5				
DOE assessment				Date: 22/01/2024
The project developer has listed the project activity in SustainCert Pipeline in January 2023, with date of listing approval on 13/05/2023. The documents including revised PD and Validation Report have been submitted to Sustaincert on 04/10/2023. Therefore, the VVB ensures that the project has completed validation within two years of successful listing of the project.				
<i>CAR is closed</i>				

CAR ID	04	Section no.	x	Date : 14/01/2024
Description of CAR				
<i>CAR raised by GS reviewer :</i> PD shall provide ER sheet and IRR at the time design review				
Project participant response				Date : 14/01/2024
ER sheet and IRR uploaded in SustainCert				
Documentation provided by project participant				
2022 10 CTL GS_VERs Spreadsheet v4 JAS <i>IRR sheet</i>				
DOE assessment				Date: 22/01/2024
IRR and estimated ER spreadsheet have been duly assessed by the validation team but are to be uploaded in the SustainCert portal by project representative.				
<i>CAR is closed</i>				

Table 4. FARs from this Validation

FAR ID	01	Section no.	x	Date : 14/01/2024
Description of CAR				
PD shall supply supporting data for all parameters in time for validation/design review or allocation may be delayed. This includes and is not limited to ER spreadsheets, individual study calculations, survey results, study reports, etc.				
Project participant response				Date : 14/01/2024
All supporting data for all parameters will be supplied				
Documentation provided by project participant				
<i>ER calculations spreadsheet ex-ante</i>				

DOE assessment	Date: 22/01/2024
All supporting data for all parameters have been supplied by PD	
<u>FAR to be checked in the next verification</u>	

FAR ID	02	Section no.	x	Date : 14/01/2024
Description of CAR				
VVB shall confirm that the PDD applies the updated AR5 Global Warming Potentials for the identified sources of GHG				
Project participant response				Date : 14/01/2024
IPCC AR5 GWP value is now being used for demonstrating additionality, determining contributions to SDGs and <u>calculating ex-ante emission reductions and removals.</u>				
Documentation provided by project participant				
PD version 5 ER calculations				

DOE assessment	Date: 22/01/2024
as per “Rule Update, APPLICABILITY OF GLOBAL WARMING POTENTIAL FOR GOLD STANDARD FOR THE GLOBAL GOALS PROJECTS, section 2.1.2 and 2.2.1, from 03/06/2021 “where the time of <u>first submission</u> is on or after 01 January 2021 shall use the IPCC AR5 GWP values for demonstrating additionality, determining contributions to SDGs and <u>calculating ex-ante emission reductions and removals.</u> The values applicable in the ex-ante calculations are now in accordance with AR5.	
<u>FAR to be checked in the next verification</u>	

FAR ID	03	Section no.	x	Date : 14/01/2024
Description of CAR				
VVB to check all the supporting documents provided in the local language by PD and confirm its aptness as per the GS require				
Project participant response				Date : 14/01/2024
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: 22/01/2024
VVB has checked all the supporting documents provided in the local language by PD and confirms its aptness as per the GS requirements				
FAR to be checked in the next verification				

FAR ID	04	Section no.	x	Date : 14/01/2024
Description of CAR				
GS VVB shall validate how safeguarding principal assessments that require an Expert Opinion for the project type is completed				
Project participant response				Date : 14/01/2024
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: 22/01/2024

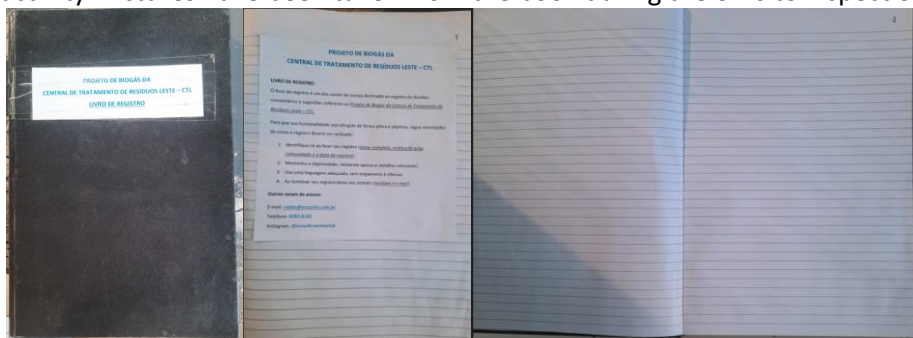
It is important to emphasize that the project activity corresponds to the implementation of biogas treatment plant in an operating landfill and it does not correspond to the implementation of the landfill. The project collects the biogas from a landfill which is already in operation and destroys it. Therefore, for the implementation of biogas plant, which is located inside the landfill, no impact in Sites of Cultural and Historical Heritage, Forced Eviction and Displacement, Land Tenure and other rights, Indigenous people, Labour Rights (child labour), Impact on Natural Water Patterns/Flows, Erosion and/or Water Body Instability or High Conservation Value Areas and Critical Habitats is expected. The only one that could be applicable to the project activity, which is labour rights (child labor), the VVB has interviewed the project developers and carry out an on-site inspection confirming that no child labor occur in the Biogas plant. During the implementation of landfill gas, all approvals have been granted by experts and therefore, they resulted in the issuance of environmental license of the landfill. But again, the landfill itself is not the project activity. Therefore, it is confirmed that all safeguarding principles that require expert opinion have been taken into account. Information has been included in section D.7 of the Validation report.

FAR to be checked during the next verification

FAR ID	05	Section no.	x	Date : 14/01/2024
Description of CAR				
VVB shall check and confirm the validity of all operational licenses issued for the project activity.				
Project participant response				Date : 14/01/2024
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: 22/01/2024
VVB confirms that it has checked and confirmed the validity of all operational licenses issued for the project activity. See reference #19 in the validation report.				
<u>FAR to be checked during the next verification</u>				

FAR ID	06	Section no.	x	Date : 14/01/2024
Description of CAR				
VVB to confirm that a Grievance Book is made available or kept at the project location.				
Project participant response				Date : 14/01/2024
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: 22/01/2024

The VVB confirms that it has checked and there is a grievance book at the entrance of the project activity. Pictures have been taken from the book during the on-site inspection.



FAR to be checked during the next verification

FAR ID	07	Section no.	x	Date : 14/01/2024
Description of CAR				
VVB to verify the phase-wise implementation of the project and provide its opinion on the same in the FVR. VVB to confirm the status of each phase of the project.				
Project participant response				Date : 14/01/2024
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: 22/01/2024
in the section D.1 of the Validation report, a full assessment of each phase has been carried out in the conclusion of this section. Information has now been repeated in the “means of validation” in the same section. The status of the project has been duly confirmed in this section.				
<u>FAR to be checked during the next verification</u>				

FAR ID	08	Section no.	x	Date : 14/01/2024
Description of CAR				
VVB shall check and provide opinion on compliance of project activity with applicable Host Country’s legal, environmental, ecological and social regulations				
Project participant response				Date : 14/01/2024
N/A				
Documentation provided by project participant				
N/A				
DOE assessment				Date: 22/01/2024
The compliance with applicable host country’s legal, environmental, ecological and social regulations was already assessed in section D.2.2, item d) of the Validation report as required. In order to grant the operational license (evidence 19), all legal, environmental, ecological and social aspects have to be in compliance with legislation. Therefore it is concluded that the project is in compliance with all these aspects.				
<u>FAR to be checked during the next verification</u>				