LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

GOLD STANDARD FOR THE GLOBAL GOALS (GS4GG) REPORT
-
VPA DESIGN CERTIFICATION (VALIDATION)

Project/ VPA Title:	GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools
GS project ID:	12240
Internal ID:	BELL_GS_PoA_VAL_CPA INCL_VER_3424
Customer:	Virridy Carbon LLC
Date:	15/12/2024
Revision:	02

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
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SUMMARY			
Reference No.	**Date** *(first version)*	**Version No.**	**Date** *(last version)*
BELL_GS_PoA_VAL_CPA INCL_VER_3424	15/07/2024	02	15/12/2024

Client	Virridy Carbon LLC
Project/VPA Title	GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project for Schools
Project Developer/CME	Virridy Carbon LLC
Project Location	Rwanda
Contact Person	Evan Thomas

GS4GG requirements: 1. Principles and Requirements v1.2 2. Programme of Activity Requirements and Procedures, v2.1 3. Community Services Activity requirements, v1.2 4. GHG Emissions Reduction & Sequestration Product Requirements, v2.3 5. GS4GG Validation and Verification Standard, v1.0 6. Stakeholder Consultation and Engagement Requirements, v2.1 7. Rule update: Application of suppressed demand, project type, and applicable scale threshold (RU 2020 PR-GHG V1.2), 13/08/2020 8. Safeguard principles & Requirements, V2.1, 29/06/2023. 9. Gender Equality Requirements & Guidelines, v2.0, 16/05/2023. Methodology for emission reductions from safe drinking water supply, v1.0	GS4GG Sectoral Scope: 2 UNFCCC CDM Sectoral Scope: 3 Technical Area: 3.1
PoA-DD Version: 1.6 Date: 14/11/2024	
First VPA-DD Version: 1.1 Date: 28/03/2024	Final VPA-DD Version: 1.5 Date: 20/11/2024
Estimated Annual Emission Reductions: 20,663 tons-CO_2/year	
Selected Sustainable Development Goals (SDGs): SDG 6; SDG 7; SDG 8; SDG 13	

Design Certification Summary

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Virridy Carbon LLC to perform the GS VER validation of the VPA titled "GS 12239 VPA-1 Amazi Meza

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(Spain)
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Fax.:+34 93 567 20 01
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SUMMARY

Rwanda Water Supply Project For Schools" (GS ID-12240) from the PoA titled "Amazi Meza Rwanda Water Supply Project for Schools - PoA" /B/ (GS ID-12239) applying the methodology for emission reductions from safe drinking water supply (v1.0).

The purpose of the VPA is to distribute, install, and service low greenhouse gases (GHG) emitting water purification systems at point-of-collection (POC) to provide safe drinking water (SDW) for institutional application at schools. The goal of the PoA is to addresses the lack of safe drinking water in certain schools in Rwanda and the resulting negative impacts on students' health and learning.

The CME of the VPA is Virridy Carbon LLC, which is the sole entity having rights to claim carbon credits from this PoA.

The scope of the validation is defined as an independent and objective review of the project design document, the VPA baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the GS4GG Principle & Requirements, version 1.2.

A desk review and a site visit have been conducted to verify the data submitted in the GS4GG PoA-DD and VPA-DD. Applus+ Certification confirms the following have been reviewed:

a. The PoA-DD/01/ and VPA-DD/04/;
b. GS4GG guideline and requirements/A/;
c. The applied monitoring methodology/B/;
d. Relevant decisions, clarifications and guidance's from different sources (See section 4.2);
e. All information and references relevant to the programme of activity resulting in estimated emission reductions (See section 4.2).

The scope of the validation is defined as an independent and objective review of the Key Project Information & VPA Design Document (VPA-DD) against the guidance, rules and applicable requirements of the Gold Standard and the PoA-DD requirements. The validation report is finalized based on the assessment of the Gold Standard VPA-DD, PoA-DD and applying standard auditing techniques including but not limited to document reviews, follow up actions (e.g. on-site visit, telephone or e-mail interviews) and also the review of the applicable approved methodology and underlying formulae and calculations.

The report and the annexed validation checklist describe a total of 10 findings which include:

- 02 Clarification Requests (CLs/CRs);
- 08 Corrective Action Requests (CARs);
- 00 Forward Action Requests (FARs) raised during the preliminary design review is closed.

The PP has responded these findings by modifying the Gold Standard VPA-DD and providing adequate additional explanations and evidence. Applus confirms that all the findings have been "closed out" before submitting the request for registration to GS board.

As a summary of the validation, the review of the Gold Standard GS4GG VPA-DD and the subsequent follow-up interviews during on-site visit have provided Applus with sufficient evidence for the determination of the project's fulfillment with all stated criteria. In our opinion, the project meets all relevant requirement of the Gold Standard. Therefore, Applus recommends the VPA for registration by the GS Registry as GS VERs project.

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08193 Bellaterra – Barcelona
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ASSESSMENT TEAM*		
Team Members	**Type of Resource[1]**	**Organization** *(for OEs)*
Lead Auditor & Technical Expert: Mr. Raul González Mitre, PhD	☐ IR ☐ EI ☒ OE	NOVA CERT, LLC
Auditor: N/A	☐ IR ☐ EI ☐ OE	N/A
Local Expert: Mr. Munguakonkwa Taka Hubert	☐ IR ☒ EI ☐ OE	External individual
Technical Reviewer & Technical Expert: Mr. Miguel Cortés	☐ IR ☒ EI ☐ OE	External individual

** The same assessment team has conducted combined validation of PoA & real case VPA and the verification of the real-case VPA (with exception of the Technical Reviewer which is different for the verification of the real-case VPA).*

[1] IR (Internal Resource); EI (External Individual); OE (Outsourced Entity)

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ABBREVIATIONS	
Applus / A+	LGAI Technological Center, S.A. (Applus+ Certification)
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CER	Certified Emission Reduction
CL	Clarification Request
CME	Coordinating Management Entity: Virridy Carbon LLC
CWS	Community water supply technologies
CWT	Community level water treatment technologies
DNA	Designated National Authority
EF	Emission Factor
EIA	Environmental Impact Assessment
ER	Emission Reduction
FAR	Forward Action Request
fNRB	Fraction of Non-Renewable Biomass
GHG	Greenhouse Gas(es)
GS4GG (or GS)	Gold Standard for Global Goals
HWT	Household water treatment technologies
IWT	Institutional water treatment technologies
IWS	Improved water sources
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Countries
LifeStraw	LifeStraw®
LLDC	Landlocked Developing Countries
MINEDUC	Ministry of Education
MoU	Memorandum of Understanding
MP	Monitoring Plan
MR	Monitoring Report
N/A	Not applicable
NGO	Non-Governmental Organization
ODA	Official Development Assistance
PD	Project Developer
PDN	Public Distribution Network
PDN / PDS	Public distribution network/system
PoA-DD	Key Project Information & Programme Design Document

PoC	Point-of-collection
PS	Project Standard
RSB	Rwanda Standard Board - Rwanda Bureau of Standard
SDG	Sustainable Development Goal
SDW	Safe drinking water
Real Case VPA	The first VPA involving specific technology/measures and/or methodology/methodological combination proposed to include in a PoA
UN	United Nations
UNFCCC	United Nations Framework Convention for Climate Change
UNICEF	United Nations International Children's Emergency Fund
VPA	Voluntary Project Activity
VPA-DD	Key Project Information & VPA Design Document
VPA-FValR	Final Validation Report of the VPA
VVB	Validation and Verification Body
VT	Validation / Verification team
VVS	Validation and Verification Standard
WHO	World Health Organization

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Appendix:

Appendix 1: Corrective Action Request / Clarification Request / Forward Action Request resolution table.

Appendix 2: Audit Team CVs.

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1. INTRODUCTION, OBJECTIVE AND SCOPE

1.1 Introduction

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Virridy Carbon LLC to perform the GS validation of the VPA titled "GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools" " (GS ID-12240) applying the methodology for emission reductions from safe drinking water supply (v1.0). This VPA is part of the PoA titled "Amazi Meza Rwanda Water Supply Project for Schools - PoA" (GS ID-12239).

The scope of the validation is defined as an independent and objective review of the project design document, the VPA baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the GS4GG Principle & Requirements, version 1.2.

The GS VPA titled "GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools" " (GS ID-12240) is located in Rwanda aims to distribute, install, and service low greenhouse gases (GHG) emitting water purification systems at point-of-collection (POC) to provide safe drinking water (SDW) for institutional application at schools.

The goal of the VPA is to addresses the lack of safe drinking water in certain schools in Rwanda and the resulting negative impacts on students' health and learning.

The objectives of the Gold Standard Program of Activities (PoA) are:

a) Provide water treatment to Schools in Rwanda to address microbiological contamination, and;
b) Avoid CO2e emissions associated with water treatment.

The project will be managed and implemented by Virridy Carbon, LLC, the Coordinating Management Entity (CME) through its wholly owned subsidiary Virridy Rwanda, LTD.

1.2 Objective

The purpose of a validation is to have an independent third-party assessment of the GS4GG VPA-DD, inclusion into the PoA and compliance with the GS requirements as described in the Gold Standard documentation and supporting documents by the CME. Validation is part of the GS VER project cycle and will finally result in a conclusion by Applus+ Certification whether a VPA is valid and should be submitted for registration of a proposed project activity rests at the GS and the Parties involved.

1.3 Scope

The scope of the services provided by LGAI Technological Center, S.A. (Applus+ Certification) (hereafter referred to as Applus) is to perform validation of the VPA. The scope of the validation is defined as an independent and objective review of the VPA-DD, the VPA baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the GS4GG Principle & Requirements, version 1.2.

2. METHODOLOGY

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

(i) The desk review of documents and evidence submitted by the project participant in context of GS along with rules and guidelines issued by the GS,

(ii) Undertaking/conducting on-site visit, interview, or interactions with the representative of the project participant, reporting audit findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate and

(iii) Preparing a draft validation opinion based on the auditing findings and conclusions.

(iv) Technical review of the draft validation opinion along with other documents as appropriate by an independent competent technical review team finalization of the validation opinion (this report)

(v) An independent technical review team reviews the validation report made by the validation team. After the final report is accepted by the technical reviewer it is then approved by Applus+ Certification which is processed further according to the GS.

The Complete List of CAR/CL/FAR is included as Appendix 1 of this report.

2.1 Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, Applus has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System.

The composition of audit team shall be approved by Applus ensuring that the required skills are covered by the team.

The qualification levels for team members that are assigned by formal appointment rules are as presented below:

- Lead Auditor (LA).
- Auditor (A).
- Technical Expert (TE).
- Local Support

- Technical Reviewer (TR).
- Any of the above-mentioned roles in training (iT,e.g. AiT for auditor in training).

The sectoral scope / technical area knowledge linked to the applied methodology/ies shall be covered by the assessment team.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Raul Gonzalez Mitre, PhD	Lead Auditor/Technical expert	3	3.1	N/A	N
Mr. Munguakonkwa Taka Hubert	Local Support	-	-	-	Y
Mr. Miguel Cortés	Technical reviewer/ Technical Expert	3	3.1	N/A	N

The complete list of CVs is included as Appendix 2 of this report.

2.2 Document review

The validation of the VPA is performed primarily as a document review of the VPA design document[/04/], first and final versions. The cross checks between information provided in the PoA DD, VPA DD and information from sources other than those used, if available, the validation team's sectoral or local expertise and, if necessary, independent background investigations.

The complete list of documents/evidence assessed by validation team is included under section 4 of this report.

2.3 Follow up Interviews

An on-site visit was conducted for the project activity from 16/April/2024 to 19/April/2024. It was a combined site visit for the following activities:

- Validation of the PoA;
- Validation/inclusion of the VPA (real case), and
- Verification of the VPA (real case).

The VT visited the following schools based on the determination of a sampling (see calculation below), which is assessed later in this section of this report:

Name of School	District	Sector
1. EP Bumbogo	Kamonyi	Nyamiyaga

2. EP Bibungo	Kamonyi	Nyamiyaga
3. EP Gakoro	Gakenke	Cyabingo
4. EP Kiryamo	Gakenke	Muzo
5. EP Buranga	Gakenke	Kivuruga
6. GS Busogo1	Musanze	Busogo
7. GS Karama	Musanze	Gacaca
8. GS Cyiciro	Muhanga	Nyarusange

VVB validated technical details & metering/monitoring arrangements along with project's technical data and information, monitoring arrangements and records shared by PP. All the documents were cross checked to ensure conservative estimation of emission reductions has taken place. The audit team has conducted several activities during on site assessment, as general approach, the following has been checked:

- Cross-check evaluation, for information received from interviews, under the scope of all information and references provided in VPA-DD and supporting documents.
- An assessment of the design of the VPA as per the registered PoA-DD;

The following table shows the detailed activities performed during on site visit:

No.	Activity performed on-site	Site location	Date	Team member
1.	**Initial meeting** - Scope of work and timelines, main goals of the inspection and Applus+ Certification's assessment process presentation. - Public Comment Period comments and resolution (if any). - Confidentiality, commercially sensitive information. - Sampling method (if applicable). - Potential alternative schedules of the site visit proposed by the project's representatives and agreement of changes, if any.	Kigali	16/April/2024	Raul G. Mitre Munguakonkwa Taka Hubert

2.	**Project site visit and interview with relevant personnel:** - Implementation of design of the project, deviations of the project design. - Geographical location. - Technologies and/or measures, capacity of the project, auxiliary power units, etc. - Project boundary, sources, GHGs. - Environmental impacts, monitoring of environmental requirements. - SDGs Monitoring plan and monitoring methodology implementation, sampling plan - Meeting with residents and social stakeholders around the project site. - Other meetings with stakeholders and third parties in case of necessity and availability. - Compliance of the monitoring activities with the project document and monitoring methodologies, tools and standardized baselines, as applied. Deviations from the methodology(ies). - Internal management controls, calculations and their internal review, data transferring and collection system and procedures, frequency of the monitoring reports. - Metering Equipment and metering practices. - Compliance of calibration requirements for the Metering Equipment.Meeting with residents and social stakeholders around the project site.	- Kamonyi, Nyamiyaga - Gakenke, Cyabingo - Gakenke, Muzo - Gakenke, Kivuruga - Gakenke, Kivuruga - Musanze, Busogo, - Musanze, Gacaca - Muhanga, Nyarusange	From 16/April/2024 to 19/April/2024	Raul G. Mitre Munguakonkwa Taka Hubert

	- Other meetings with stakeholders and third parties in case of necessity and available			
3.	**Project design and characteristics:** - Start date and compliance of period for registration. - Description and design of the project, implementation. - Identification of the project type, project scale and eligibility under GS4GG. - Crediting period start date, type and duration, Monitoring Period reported and used. - Conditions prior to project initiation. - Data collection system, QA/QC procedures and compliance with the Monitoring Plan. - Sustainable Development Goals (SDGs). - Identification of changes occurred in the project description and design (deviations of the project design implementation). - Parties involved, project developer/CME, project participants, ownership.	Kigali	From 16/April/2024 to 19/April/2024	Raul G. Mitre Munguakonkwa Taka Hubert
4.	**Documentary Review:** - Compliance of the Project Design Document and Monitoring Report with the current version of the templates and their required contents. Correct use of other templates. - Baseline scenario and project scenario identification. - Selection, applicability conditions and application of methodologies and standardized baselines. Deviations from the methodology(ies).	Kigali	19/April/2024	Raul G. Mitre Munguakonkwa Taka Hubert

	- Determination of the additionality and financial needs. - Assessment of data and calculations of SDGs and emission reductions or net removals (conservativeness, use of calculation methods and assumptions, emission factors and GWPs, reliability/reproducibility). - Assessment on the differences from the estimated value of SDGs and ERs in the PDD and the achieved SDGs and ERs in the Monitoring Period. - Data and parameters fixed ex ante and monitored parameters and reporting requirements. - Local stakeholder consultation and inclusivity, feedback rounds, consultation report. - Project compliance with applicable laws, statutes and other regulatory frameworks. - Safeguarding Principles Assessment. - FARs (forward action requests) from GS Preliminary Review.			
5.	**Audit team internal meeting:** - Audit Team's discussion in terms of findings, compiled objective evidences, completeness of the audit and compliance of its requirements. - Elaboration of the Findings list (Draft Validation Report).	Kigali	19/April/2024	Raul G. Mitre Munguakonkwa Taka Hubert
6.	**Final meeting:** - Explanation of the assessment results (raised findings), discussion and agreement on the elaboration of the findings.	Kigali	19/April/2024	Raul G. Mitre Munguakonkwa Taka Hubert

	- Timelines for the closure of the findings and next steps of the process for registration.			

List of personnel interviewed during on site visit:

	Name:*	Company and position:	Date:
1	IVAN Hernandez	Consultant Sajoma	16-19/04/2024
2	LAURA MacDonald	Virridy	16-18/04/2024
3	EVAN Thomas	Vrridy	16-18/04/2024
4	MUGABO Lambert	School Program Manager Virridy	16-19/04/2024
5	NTAZINDA Jean	Virridy Rwanda	16-19/04/2024
6	NIYOMUGABO Pacifique Olivier	Field Technician Virridy Rwanda	16-19/04/2024
7	Manirabaruta Gisèle	Water Quality Manager, Virridy Rwanda	19/04/2024
8	Kayitesi Diane	Finance Manager Virridy Rwanda	19/04/2024
9	DUSABUMUREMYI Valens	Headteacher EP Bibungo	16/04/2024
10	NYIRAMANA Christine	Teacher EP Bibungo	16/04/2024
11	NDAHAYO Augustin	Headteacher EP Bumbogo	16/04/2024
12	HARIMWINYUNGU Zachée	Teacher EP Bumbogo	16/04/2024
13	MUSABYIMANA Frodouard	Teacher EP Bumbogo	16/04/2024
14	Rev. HABUMUREMYI Jean Patrick	Headteacher EP Kiryamo	17/04/2024
15	ABIJURU Jeanne d'Arc	Responsible EP Kiryamo	17/04/2024
16	MUGENZI J. Bosco	HeadteacherEP Buranga	17/04/2024
17	NSANZIMANA Venuste	EP Buranga Teacher	17/04/2024
18	AKIMANIZANYE Adeline	Headteacher EP Gakoro	17/04/2024
19	TUYISHIMIRE Egide	Teacher EP Gakoro	17/04/2024
20	Fr. TUYISHIMIRE Jean Damascene	Headteacher G.S BusogoI	18/04/2024
21	MUNEZERO Jean Chrysostome	Teacher G.S BusogoI	18/04/2024
22	MUHIRE Félicien	Teacher G.S BusogoI	18/04/2024
23	BIBUTSUHOZE Léonidas	Headteacher G.S Karama	18/04/2024
24	TWAHIRWA Faustin	Responsible G.S Karama	18/04/2024
25	NKURUNZIZA Aimable	Headteacher G.S Cyiciro	19/04/2024
26	NIKUZE Pélagie	Teacher G.S Cyiciro	19/04/2024

**The respective personnel whose names are mentioned above have provided their consent for publishing their names in this document.*

As a combined on-site visit was done for the Validation of the PoA, the Validation of the VPA (real case) and the Verification of the VPA (real case), the following questions were asked to the stakeholders in order to validate the baseline and project scenario

1. Where is the water coming from?
2. Is the same amount of water available the whole year?
3. Did you do anything (past) to make water safer to drink? How?
4. (In case of boiling) How much fuel did you use for purifying purposes?
5. How did you get the fuel? and how much did you pay for the fuel?

6. Are you still using another purifying system after the implementation of the water filters?
7. Where are the water filters located? how often do you use them?
8. Do you think the children drink more water now that the water filters are installed?
9. How many filters are installed in the school?
10. How many students do you have in the school? teachers? staff?
11. Do you storage the filtered water? Where?
12. Do all water filters work perfectly?
13. When was the last time a water filter was damaged or broken?
14. How often do you need to clean the water filters? How do you do it?
15. Who is responsible of the maintenance or reparation of the water filters?
16. Did you pay something to get the water filter? how much?
17. Did you signed a document to get the water filter? when?
18. Did you receive training/information to operate/clean the water filter? when? Who attend?
19. How do you communicate to project developer if you have any comment, complain or question?
20. Please explain the hygiene campaigns that are taking place in the school
21. How do you know the number of days the school is open/working?
22. Do you want to add something else, do you have any question?

As a result of the application of the questionnaire, it can be concluded that in most of the cases, water source is coming from springs and the availability depends on the raining season. There is no official water supply network in any of the schools. Furthermore, the schools have boiled the water for drinking purposes in the past and in some cases, they just use directly the water from the source. Water used to be boiled using fire wood which was bought. It was observed during on site visit that all schools have kitchen to prepare food for the children and the fuel used is always firewood. It has been also confirmed that no water filters or water deposits for drinking purposes were located inside the classrooms. Hence, children did not drink water on a regular basis. Now the filters are located inside the classrooms and approximately for every 2 classrooms (100 children), a filter being is used. In all cases during interviews, it has been confirmed that a suppressed demand was observed. Children drink more water know as they have it directly available in the classroom.

All filters observed work perfectly. No broken filter was observed. This has been also confirmed during on site interviews. Water filters are cleaned every day either by the teachers or by the children. Once a week a deep cleaning is taking, please as per manufacturer specifications. Check lists are used for its control.

No payment has been done in any case for any filter or training given. A document has been signed between the PD and the representative of the school. The same template is used for all schools visited. The signed documents have been presented and reviewed by the VT for all schools visited. No errors, omissions, misstatements, or incomplete information have been identified.

Training and information on how to handle and operate the water filters have been given by the PD in all schools visited. In all cases, the contact number of the PD is available in case of questions or in case any of the filters have been damaged. Furthermore, hygiene campaigns are taken place on a regular basis in the daily/weekly assemblies with the children. Teachers also stress importance of drinking safe water and to take care of the water filters. Also, during parents' meetings, information on hygiene and safe water to drink is also communicate.

Every school follow the official calendar of the government and information of the number of children can also be obtained from official sources.

In general, the water filters were operational, and the user's informed those have been used without inconvenient. In short, positive feedback was received from the end-users regarding the water filters during the on-site interview conducted by the VT.

It is Validation Team opinion that the interviews performed on site are sufficient to demonstrate that correct operation and behavior of the VPA.

Sampling approach:

As a combined on-site visit was conducted for the validation of the PoA and VPA and also for the verification of the VPA, a single sampling approach was applied to check both, the baseline and project scenarios. This means to check any changes in the PoA as related to the eligibility principles, criteria and requirements and also to assess the physical implementation of the VPA. The incorporation of any relevant updated to the GS requirements has been also checked.

Regarding VT own sample, as stated in paragraph 54 of the Guideline of Sampling[/D-2/], "DOEs may use acceptance sampling where necessary, as described in the "Standard for sampling and surveys for CDM project activities and programme of activities" [/D-1/], in the validation/verification process to verify that the project proponents have implemented a sampling plan to a satisfactory standard. This involves selecting a random sample of the project proponents' sample records and cross-checking against DOE records, i.e. data collected by the DOE". Hence, the VT applied a stratified random sampling (with 90% confidence interval and a 10% margin of error) of the CME sample size, resulting:

School Type	Sample size	Number of samples after Rounding
Gakenke	3.6	4
Kamonyi	1.5	2
Muhanga	1.0	1
Musanze	1.0	1
TOTAL	**7.32**	**8**

The VT has applied a sample size of 8 schools which represents 69 number of filters installed. This approach is aligned with the sampling guidance[/D-2/] and standard[/D-1/].

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08193 Bellaterra – Barcelona
(Spain)
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Fax.:+34 93 567 20 01
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The determination of the selected sample size has been done following the equations described in the Methodology for Sampling and surveys for CDM project activities and programmes of activities[/D-2/].

In order to cross check, the selected sampling approach, the VT calculated as well an acceptance sampling following the requirements stated in paragraph 29-38 of the Standard for Sampling and surveys for CDM project activities and Programmes of activities[/D-1/]. This means VT selected random samples of CME's sampled records, checked the acceptability (or otherwise) of the data for each such record with CME's sample records, and then based on the number of records where there is an agreement, determined if the CME's sample records meet the requirements.

The VT has thus determined the sample size for acceptance sampling by evaluating the following, using guidance in the Standard 'Sampling and surveys for CDM project activities and programme of activities':

- The proportion of discrepancies between the CME's data and verification team's (field or onsite inspection results) data that can be considered acceptable. This is referred to as the AQL (Acceptable Quality Level): 0.5% was considered in this verification.

- The proportion of discrepancies between the CME's data and verification team's (field or onsite inspection results) data that would be considered unacceptable. This is the UQL (Unacceptable Quality Level): 20% was considered in this verification.

- The producer risk: 10% was considered.

- The consumer risk: 20% was considered.

Considering the above input values, a sample size of 8 was required as per Table 2 (Sample size and acceptance number based on AQL, UQL, and producer and consumer risks) in the referred Standard. Accordingly:

AQL	0.5%
UQL	20%
Producer risk	10%
Consumer risk	20%
Sample size (n) schools	8
Sample size (n) filters	69
Acceptance Number (c)	0
Observed Acceptance Number (c)	0

The selected method by the VT (stratified random) shows the same results (8 samples/schools) as the acceptance sampling of the Standard for Sampling and surveys for CDM project activities and Programmes of activities[/D-1/], it can be confirmed that the selected sampling plan for the validation of the PoA and VPA and the verification of the VPA fulfills all applicable requirements.

2.4 Resolution of Clarification and Corrective Action requests

The objective of this phase of the validation was to resolve the requests for corrective actions and clarification and any other outstanding issues which needs to be clarified for Applus positive conclusion on the VPA-DD. The Corrective Action Requests and Clarification Requests raised by Applus were resolved during communications between the Client and Applus to guarantee the transparency of the validation process, the concerns raised, and responses given are summarized in Appendix 1 of this report.

The Gold Standard GS4GG PoA-DD final version serves as the basis for the final assessment presented.

2.5 Internal Quality Control

As final step of a validation the final documentation including the validation report and the protocol must undergo an internal quality control by the technical review committee. Each report must be finally approved either by the head of technical review committee or the deputy. In case one of these two persons is part of the audit team, approval can only be given by the other one who is not part of the team.

After confirmation of the PP the validation opinion and relevant documents are submitted to the GS Registry.

3. PROJECT DESIGN CERTIFICATION ASSESSMENT

3.1 Purpose and general description of the VPA

The VPA "GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools" (GS ID-12240) is the first real case VPA from the PoA titled "Amazi Meza Rwanda Water Supply Project for Schools - PoA"/B/ (GS ID-12239).

The VPA is located in Rwanda aims to distribute, install, and service low greenhouse gases (GHG) emitting water purification systems at point-of-collection (POC) to provide safe drinking water (SDW) for institutional application at educational institutions, mostly, primary and secondary schools. Other educational institutions such as high schools and Universities can also be included. All types of schools, including part-time, full-time, and boarding schools, as well as public, private and government-supported non-profit can be included. The number of filters installed in each school is determined by the student population. Each filter reliably serves 100 students.

The technology is installed free of charge. In exchange for the installation and maintenance of the project technology, each school will sign a carbon waiver relinquishing full and uncontested legal ownership of the carbon credits produced by the project and transferring the rights to Virridy Carbon LLC.

The common practice treatment method (e.g. boiling) or consumption of untreated water is the business-as-usual scenario (baseline scenario) in the selected schools. There is no official water supply network in any of the schools. Furthermore, the schools have boiled the water for drinking purposes in the past and in some cases, they just use directly the water from the source.

The goal of the PoA is to addresses the lack of safe drinking water in certain schools in Rwanda and the resulting negative impacts on students' health and learning.

The objectives of this Gold Standard VPA are:

a) Provide water treatment to Schools in Rwanda to address microbiological contamination, and;

b) Avoid CO_2e emissions associate with water treatment.

The VPA is a small case utilizing the Methodology for Emission Reductions from Safe Drinking Water Supply/B/. This project applies Type III definition: GHG emission reductions for small scale projects shall not exceed more than 60,000 tons CO_2e in any year of the crediting period. This is evaluated in section 3.6 Scale of the VPA of this report.

The proposed real case VPA has only one host party, Rwanda, a geographic reference has been provided (1.9403° S, 29.8739° E) and assessed as correct by the VT. For further details, please refer to section 3.4 Location of VPA of this report.

There is one VPA implementer which is responsible for its operation, Virridy Carbon LLC, as described in section 3.3 Legal ownership.

The VPA has not registered as a project activity nor included in another registered PoA. The VT research any similar project in the main GHG programs/AA/. No discrepancies were identified.

The accuracy of the project description was determined based on the on-site visit as part of validation, review of supporting documents (as mentioned in Section 04), and interaction with the key personnel as listed under section 2.3 of the validation report.

The real case VPA-DD has defined the inclusion criteria for its regular case VPA for inclusion in the PoA. This is evaluated in section 3.2 Eligibility for VPA inclusion as per PoA requirements.

Schools will be identified based on a set of criteria, with the top criterion being that the water currently being provided to students is determined to be unsafe through microbiological testing. The water purification systems that will be installed include the LifeStraw® Community and/or LifeStraw® and/or Amazi Ultrafiltration filters and/or the Amazi ultraviolet disinfection systems.

The purpose and general description of the proposed VPA is described in the VPA-DD/04/ with sufficient details and clarity. It is accurate, complete and provides an understanding of the VPA.

The CME has clearly described the purpose and general description of the VPA according to requirements set in section 4.2 of the Programme of Activity Requirements and Procedures/A-2/. The description provides and understanding of the nature and implementation and monitoring arrangements for VPAs that will be included in the proposed PoA. No discrepancies were identified.

This is the first VPA involving specific technology proposed to include in a PoA. Hence this is the Real Case VPA. The VPA is implemented in Rwanda. The implementation of the PoA and the VPA is a voluntary action by the CME.

The description of the proposed project in the PDD is accurate, complete, and provides an understanding of the proposed project. The VPA-DD has been completed using the valid VPA-DD form v.2.3, following the provided instructions and in accordance with GS4GG requirements and procedures. When error or omissions have been identified, respective CARs or CLs have been raised. After proper correction done by the PD, it can be concluded that no errors, omissions, misstatements, or incomplete information have been identified.

3.2 Eligibility for VPA inclusion as per PoA requirements

According to the Programme of Activity Requirements and Procedures, v2.1, the CME shall define the eligibility criteria for inclusion for its VPAs in the PoA. Below are the eligibility criteria fulfillment for the real case VPA:

#	Eligibility criterion	Required condition PoA	Description of the VPA Vs criteria	VVB assessment
1	Location/ Geographic boundary of the VPA	**Description**: All new project activities will install the project technology within the geographic boundary which is the Rwanda territory. **Means of verification**: GPS coordinates of each technology installed will be recorded and	The schools included in this VPA are: School Name(s)/Separate list An Elementary/Secondary school. The location of the schools included in this VPA are submitted separately.	The location and boundary in the VPA will be clearly specified and it will be confirmed that all parts of the VPA are within the geographical boundary of the host country included in the PoA. This has been cross checked against the

		the location of each VPA will be specified in each VPA-DD, including a statement from the CME confirming the geographical boundary of the VPA that shall be within the boundary of the PoA.	All the schools included are located within Rwanda territory.	inspection on-site visit of the selected schools. The eligibility criterion for inclusion of the real case VPA in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[/A-2/]. Furthermore, the means of verification are considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.
2	Project technology and target users	**Description**: VPAs only involve the use of one technology i.e., distribution of safe drinking water systems (IWT technologies). All new VPAs will install the project technology in educational institutions, mostly, primary and secondary schools. Other educational institutions such as high schools and Universities can also be included. All types of schools, including part-time, full-time, and boarding schools, as well as public, private and government-supported non-profit can be included. **Means of verification:** The VPA-DD specifies the target end-user group	The VPA includes the installation of 1,273 LifeStraw® Community Date of installation from 26/06/2023 to 23/02/2024 The schools included in this VPA are: School Name(s)/Separate list	The technology deployed includes one or more of the advanced water filtration technologies. The Project technology (IWT) will be determined by manufacturer specifications[/12/] which is applicable for the inclusion of VPA in the PoA. The date of installation has been cross checked against the filter installation database[/31/]. No discrepancies were identified. The eligibility criterion for inclusion of real case VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[/A-2/]. Furthermore, the means of verification are

		and the technology being distributed as provided in section A.3 of this document. Supporting evidence is manufacturer specifications and Distribution database.		considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.
3	Methodology	**Description**: All the new VPAs shall apply the Gold Standard methodology "Emission reductions from safe drinking water supply", version 1.0 **Means of verification**: Each VPA clearly states the methodology applied, the applicable requirements of the methodology, and other applicable regulatory documents.	The methodology applied is the "Emission reduction from safe drinking water supply", version 1.0. See details in section B.2 of this VPA-DD	The applied methodology is applicable for the inclusion of VPA in the PoA. The eligibility criterion for inclusion of the real case VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[/A-2/]. Furthermore, the means of verification are considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.
4	Double counting	**Description**: (i) All the project technologies installed in new VPAs will have a unique identification that ensures traceability that prevents any double counting. (ii) The VPA is exclusively included in this PoA. The VPA shall not be proposed as part of another	(i) Unique ID numbers assigned to the water systems installed are submitted to the VVB on a separate basis. (ii) The CME confirms this specific VPA is not part of an ETS, has not participated in any other GHG program, and has not been rejected by other GHG program.	Proper measures are considered to avoid double counting such as unique identification of water filters and review of offsets program which is applicable for the inclusion of VPA in the PoA, which is a valid method for the inclusion of VPA in the PoA. The filter installation database[/31/] was checked.

		programme or offset program i.e., as an individual Gold Standard or CDM project and/or as part of any other CDM PoA and/or any other mechanism that includes climate change mitigation impacts/benefits. The VPA-DDs will include a statement from the CME that the specific VPA will not be part of another Gold Standard or CDM project activity or VPA under another PoA. **Means of verification:** (i) Unique ID number assigned by the monitoring system. (ii) A statement by the CME is included in the VPA-DD and a declaration has also been provided by the CME to the VVB that the specific VPA has not participated in any other GHG program and has not been rejected by other GHG program. Supporting Evidence: This shall be cross-checked and verified by the CME with offset mechanisms like UNFCCC-CDM, VERRA, Gold Standard. Declaration by CME included in each VPA-DD.	VVB to cross-check and verify no offset mechanisms like UNFCCC-CDM, VERRA, Gold Standard includes these schools and locations.	A unique identification is assigned to each filter. Furthermore, confirmation statement has been included in the VPA-DD. No discrepancies were identified. Finally, the VT research any similar project in the main GHG programs/AA/. No discrepancies were identified. The eligibility criterion for inclusion of the real case VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures/A-2/. Furthermore, the means of verification are considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.
5	Legal ownership	**Description**: Carbon rights waivers will be signed by schools and other entities involved in the project to ensure there is no dispute over the certified emission reductions, and to demonstrate the legal	1. Carbon waivers signed by the schools to be submitted to the VVB on a separate basis.	Proper means of documents will be signed to avoid problems with the legal ownership of the carbon credits which is a valid method for the inclusion of VPA in the PoA.

		ownership of the emission reductions lies with the CME. **Means of verification**: Carbon waivers signed by Schools and technology suppliers.		The MoUs signed (legal ownership) between the PD and the schools where the filters are being installed were provided to the VT. The VT checked these documents and found them as correct. It is clearly stated the legal ownership of the ER certificates is the PD. Furthermore, this has been cross checked during interviews with principal of the visited schools. Principals shown the same carbon waivers which were previously provided by the PD. No errors, omissions, misstatements, or incomplete information have been identified. The eligibility criterion for inclusion of the real case VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures/A-2/. Furthermore, the means of verification are considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.
6	Project technology	**Description**: All VPAs will include the installation of LifeStraw® Community (including a LifeStraw® Ultrafiltration Membrane) Or Amazi filters. These meet the drinking water	This VPA installed 1,273 LifeStraw® Community Equipment specifications can be found in the following link: https://lifestraw.com/products/lifestraw-community	The technology deployed includes one or more of the advanced water filtration technologies. The Project technology (IWT) has been cross checked with the manufacturer specifications/12/ given by

		standard required by the methodology and the host country. **Means of verification**: Equipment specifications including manuals, performance data sheets, lab testing reports, and host country certificates.		the PD. This has been cross checked with the LifeStraw web site/I/and during on site assessment. No discrepancies were identified. The eligibility criterion for inclusion of the real case VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures/A-2/. Furthermore, the means of verification are considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.
7	Additionality	**Description**: All VPAs to be included under the PoA will be in compliance with item 1.1.3 of Annex B – positive list mentioned in the "Community Services Activity Requirements", version 1.2. All VPAs will be solely composed of isolated units where the users of the technology/ measure are households or communities or institutions and where each unit results in <= a. 600 MWh of thermal energy savings per year for ICS. b. 600 tCO2 per year for HWT and IWT technologies.	The CME confirms that the thermal energy savings per year at a unit level (i.e., per water filter) is below 600 tCO_2 per year or below 600 MWh of energy savings per year. See ERs spreadsheet.	As stated in item 1.1.3 of Annex B – positive list mentioned in the "Community Services Activity Requirements", the PoA-DD has calculated the ER per filter installed showing 103 tCO_2e in part-time schools, 147 tCO_2e in full time schools and 105 tCO_2e for boarding schools. Hence, the VPA fulfils requirement 1.1.3 of the positive list of the Community Services Activity requirements/A-3/ as it is an isolated unit where the users of the technology is institutions (e.g. Schools in Rwanda) and where each unit results in <= 600 tonnes of emission reductions per year.

		Means of verification: The VPA-DD shall confirm that the thermal energy savings per year at a unit level (i.e., per water purification system) are below 600 tCO_2 per year per unit. This is to be outlined in the ER calculation sheet.		The PD also calculated the thermal energy efficiency (MWh/year) even it not required by the guidance as it is one or the other option. The result of 45.146 MWh is also below 600 MWh. The VT has checked the calculation provided in the PoA-DD and found as correct. Moreover, this is also aligned with the GS rule update regarding Application of suppressed demand, project type and applicable scale threshold (RU 2020 PR-GHG V1.2)/A-7/. No discrepancies were identified. The eligibility criterion for inclusion of the real case VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures/A-2/. Furthermore, the means of verification are considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.
8	Start date	**Description**: All the project technologies are installed from June 26, 2023, onwards. **Means of verification**: The date of installation will be recorded as part of the project database.	The VPA includes the installation of 1,273 LifeStraw® Community. Date of installation from 26/06/2023 to 23/02/2024	The starting date of VPA-01 is 26/06/2023, which is the date of installation of the first water filter/16, 31/. The eligibility criterion for inclusion of the real case VPAs in the proposed GS PoA are defined in

				accordance with paragraph 5.12 of the Activity Requirements and Procedures[/A-2/]. Furthermore, the means of verification are considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.
9	Eligibility criteria for schools to join a VPA	**Description**: In order to make the project feasible, there are minimum elements to be confirmed at the schools to join the VPA. i. Primary or secondary school of at least 200 students in Rwanda. ii. Presently on a water supply (piped utility or self-supply) that tests positive for non-zero e-coli CFUs / 100 ml using the compartment bag test. iii. Has at least one location, but no more than ten, where students and staff collect water for drinking. iv. School will manage site-preparation and incur associated costs. This includes identifying a protected location to install the water purification system.	Each school's eligibility criteria to be submitted to the VVB on a separate basis. The following elements are confirmed for each school joining the VPA: – Number of students and staff – Result of the water test – Locations where students and staff collect water for drinking. – Location(s) to install the water filter(s) – Use firewood or fossil fuels to boil at least some drinking water in the baseline – School committed (Yes/No) – MoU signed – No presence of water filters	The project is implementing institutional water treatment technologies (IWT) in public schools (half or full day/boarding). i. All schools considered in the VPA have at least 200 students. The following information has been checked for this purpose: – Signed MoUs[/17/] with the schools which were sampled. In this document, the number of students is included; – The filter installation database[/31/] with the number of students and filters considered; – Head-master data[/34/] on actual student population; All the above mentioned evidence can be used as evidence to confirm the required condition. Finally, interviews were also done during on site assessment. No discrepancies were identified. The requirements are fulfilled.

		v. The common practice of water treatment is or would have been using firewood or fossil fuels to boil at least some drinking water in the baseline. vi. Have school staff that commit to work with Virridy for the water systems installation, operation, and maintenance. vii. Agree to be bound to the terms of Virridy/ District Government MOU that stipulate that Virridy will provide the water treatment technology, replacement supplies, water quality testing, and training, in exchange for assignment of all carbon credit rights. viii. The school expects to be in operation indefinitely notwithstanding unforeseen circumstances. The school has not received LifeStraw® filters, Amazi filters, or other water quality interventions in the last 3 years. **Means of verification**: School eligibility checklist along with respective supporting documents.		ii. Furthermore, the filter installation database[31] with the same results were also reviewed. Finally, interviews were also done during on site assessment. No discrepancies were identified. The requirement is fulfilled. iii. This requirement has been checked during on site visit, with observation of the site and interviews performed with the head master of each school, teachers and employees of the school. In all cases, the sampled schools have at least one location where students and staff collect water for drinking. Furthermore, the filter installation database[31] with the same information were also reviewed. No discrepancies were identified. The requirement is fulfilled. iv. During on site visit, it has been observed that in all cases, the water filters are located in protected places. Students and teachers are in charge of protecting and taking care of the purification systems. Furthermore, interviews were also performed for cross check purposes. No discrepancies were identified. The requirement is fulfilled. v. This requirement has been checked with the baseline survey results[11] where it can be confirmed that the common practice of water treatment would have been using firewood or fossil fuels to boil at least some drinking water. This can be also observed in the public

				document Policy and market review for modern energy cooking in Rwanda[J]. Finally, interviews were also performed for cross check purposes. No discrepancies were identified. The requirement is fulfilled. vi. The signed MoUs[17] with the schools which were sampled contain a commitment to work with Virridy for the water systems installation, operation, and maintenance. Furthermore, this has been cross checked against interviews with the head master, teachers and employees of the schools. No discrepancies were identified. The requirement is fulfilled. vii. The signed MoUs[17] with the schools which were sampled contain clear clauses where is declared that Virridy will provide the water treatment technology, replacement supplies, water quality testing, and training, in exchange for assignment of all carbon credit rights. Furthermore, this has been cross checked against interviews with the head master, teachers and employees of the schools. No discrepancies were identified. The requirement is fulfilled. viii. The signed MoUs[17] with the schools which were sampled contain a statement that the school has not received LifeStraw® filters, Amazi filters, or other water quality interventions in

				the last 3 years. This has been observed during on site visit and cross checked against interviews with the head master, teachers and employees of the schools. No discrepancies were identified. The requirement is fulfilled. The eligibility criterion for inclusion of the real case VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[/A-2/]. Furthermore, the means of verification are considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.
10	Meet the small-scale and remain within those thresholds throughout the crediting period	**Description**: The CME will ensure that the emission reductions of each VPA are within <60k tCO_2e/year limit. In case the threshold is breached the CME will not claim the ERs above the threshold limit. **Means of verification**: The CME confirms the scale of the VPA, that it will remain within the threshold limits, and forego the ERs if it surpasses the threshold.	The VPA is below the small-scale threshold. The annual average ERs are: 20,663 tCO_2e. See ERs spreadsheet[/7/]	The PoA-DD has calculated the annual average ER of 20,663 tCO_2e. Hence, the VPA fulfils requirement 1.1.3 of the positive list of the Community Services Activity requirements[/A-3/] as it is an isolated unit where the users of the technology is institutions (e.g. Schools in Rwanda) and where each unit results in <= 600 tonnes of emission reductions per year. The VT has checked the calculation provided in the PoA-DD and found as correct. No discrepancies were identified.

				The eligibility criterion for inclusion of the real case VPA in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures/A-2/. Furthermore, the means of verification are considered plausible in the context of implementation of the PoA. No discrepancies were identified. The criterion is plausible as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPA in the PoA.

3.3 Legal Ownership

According to the VPA-DD, Virridy Carbon LLC, holds full and uncontested legal ownership of the emission reductions (GS VERs) generated by the project activity.

The MoUs/17/ signed with Schools/Districts/any other authority for the project implementation were provided to the VT. It is stated in such document:

"3. To recognize that Virridy Rwanda Ltd is the only official recipient of payment for the project efforts in reduction of greenhouse gases emissions and owner of all carbon credits generated under the projects".

As mentioned above, a sample has been calculated and the VT has checked directly all MoUs/carbon waivers of the selected schools during interviews with the principals of the school at the time of on-site visit. All Carbon waivers (MoU) were provided and compared to the documents previously given by the PD. No discrepancies were identified.

It can be concluded that the legal ownership of the PoA and resulting ER are clearly established.

3.4 Location of VPA

The geographical boundaries will cover entire country Rwnda; The coordinates of the location of the site were appropriately included in the PoA-DD/01/. The location has also been confirmed through website https://www.google.co.in/maps. It is confirmed that the VPA is located in the

host country as stated in the VPA-DD. No further information is required as the VPA-DD requires technologies installed in schools in Rwanda and the VPA is located in the host country.

The CME has clearly described the physical/geographical boundary of the proposed PoA according to requirements set in section 4.2.2 of the Programme of Activity Requirements and Procedures[/A-2/]. The established boundary of the proposed PoA has been defined by the CME taking into consideration all applicable national and/or sectoral policies and regulations[/13/].

The description provides and understanding of the nature and implementation and monitoring arrangements for the VPA that will be included in the proposed VPA. No discrepancies were identified.

3.5 Technologies and/or measures

LifeStraw® Community is a point-of-use microbiological water purifier designed for routine use in educational settings. The LifeStraw® Community includes a LifeStraw® Ultrafiltration Membrane with a lifetime filtration capacity of 70,000 – 100,000 liters, which can be replaced. Amazi filters are water filtration systems that provide clean and safe drinking water. Amazi filters come pre-loaded with all cartridges which need to be replaced every 3-6 months. Amazi UV disinfection systems use ultraviolet light to disinfect water.

The water purification systems will reduce both the use of and demand for firewood and other fuels used to boil water for drinking, leading to a reduction and/or demand for carbon dioxide emissions. The project aims to reduce the energy demand and respective carbon emissions from the population served by the project activity for whom the common practice of water treatment is or would have been water boiling, considering the emission factor of the baseline energy source mix, including the displacement of Non-Renewable Biomass (NRB). The project accounts for purified water consumed for drinking. The program will be implemented in Rwanda. The implementation of the PoA and the VPA is a voluntary action by the CME.

The technical description of the programme of activity has been validated by assessing the manufacture specification evidence[/12/] and the actual situation observed during on site assessment. The filters are correctly installed at the schools visited by the VT. No discrepancies were identified. All the information was correctly mentioned in the VPA-DD[/04/].

It can be concluded that the CME has clearly described the Technologies/measures of the proposed VPA according to requirements set in section 5.2.1 of the Programme of Activity Requirements and Procedures[/A-2/]. The description provides and understanding of the nature and implementation of the PoA and monitoring arrangements for VPAs that will be included in the proposed PoA. No discrepancies were identified.

3.6 Scale of the VPA

According to VPA-DD this real case VPA is a small-scale project applying the suppress demand approach. This project applies Type III definition: GHG emission reductions for small scale projects shall not exceed more than 60,000 tons CO_2e in any year of the crediting period.

According to the applied methodology[/B/] paragraph 3.4.2, footnote 14:

"As per GS4GG Principle and Requirements/A-1/, application of suppressed demand baseline is limited to Micro & Small-scale activities. In Refer to GHG Emissions Reduction & Sequestration Product Requirements/A-4/ for definition. For the purpose of this methodology the small scale project applies Type III definition i.e, GHG emission reduction for small scale project shall not exceed more than 60,000 ton CO2e in any year of the crediting period".

Description in the VPA-DD is aligned with the requirements of the applied methodology. No discrepancies were identified. It can be concluded that the VPA real case is small-scale project applying the suppress demand approach.

3.7 Funding sources of VPA

The VPA does not receive public funding, this is a voluntary initiative led by Virridy. The project is implemented by the project developer at the schools. The Official Development Assistance (ODA) declaration form/14/ has been provided and assessed as correct. No discrepancies were identified. Furthermore, the VT has checked the media to confirm that there is no publicity information about the PoA receiving public fundings. Hence, the ODA) declaration form/14/ is found as correct.

The CME has clearly described whether funding sources has been or will be received for the proposed VPA according to requirements set in the Programme of Activity Requirements and Procedures/A-2/. The description provides and understanding of the nature and implementation and monitoring arrangements for the VPA that will be included in the proposed real case VPA. No discrepancies were identified.

3.8 Applied Methodology

The VPA is applying the GS methodology Methodology for emission reductions from safe drinking water supply/B/, v1.0 which is an approved and valid methodology available at the GS web site.

The VPA is also applying other tools as follow:

1. CDM Methodological Tool 30 "Calculation of the fraction of non-renewable biomass"/D-2/, and
2. Guidance: Sampling and surveys for CDM project activities and programmes of activities/D-3/,
3. Rule update: Application of suppressed demand, project type and applicable scale threshold (RU 2020 PR-GHG V1.2)

All applicable methodology and tools are valid at the time of validation. All documents were checked directly from its websites to confirm a valid methodology and tools are being applied. No discrepancies were identified.

3.9 Methodology applicability

The VPA has selected the methodology for emission reductions from safe drinking water supply, v1.0, where in section 2.2 is described the applicability conditions to be followed:

Criteria	PoA justification	VVB assessment
2.2.1 The methodology is applicable under the following conditions:		
a. Eligible household water treatment technologies (HWT), institutional water treatment technologies (IWT), and community level water treatment technologies (CWT) include bleach/chlorine, water filter (ceramic, sand, composite, membrane, etc.), UV disinfection, etc.	The project includes eligible treatment technology. The project activity includes the installation and service of low/zero-emission water purification systems at point-of-collection (POC) to provide safe drinking water (SDW) for institutional application at schools. This activity is defined as institutional water treatment technologies (IWT).	The project is implementing institutional water treatment technologies (IWT) in public schools (half or full day/boarding). Hence applicability condition is fulfilled. This has been checked during on site visit when visiting the selected schools. It was observed that IWT technologies have been implemented. Furthermore, the water filter technical specifications/12/ have been also checked. Moreover, interviews were also done on site for cross check purposes. No discrepancies were identified.
b. Eligible community water supply technologies (CWS) include new installation of new borehole hand-pumps, borehole hand-pumps rehabilitation, solar powered drinking water pumps, etc. Water pumps powered by fossil-fuel engines are not eligible, with the exception of back-up fossil–fuel engines that are used for no more than 10% of operating hours (parameter SWDS 33).	N/A, the project does not include CWS activities.	Not applicable to the VPA as it does not involve community water supply technologies (CWS) but institutional water treatment technologies (IWT). This has been checked during on site visit and reviewing filter technical specifications/12/ of the IWT Furthermore, interviews were also done for cross check purposes. No discrepancies were identified.
c. All projects involving CWT and CWS technologies must also include ongoing maintenance and repair of the project technology.	N/A, the project does not include CWT, nor CWS. However, the project will provide maintenance and repair for the project technology.	Not applicable to the VPA as it does not involve: - Community level water treatment technologies (CWT), nor - Community water supply technologies (CWS). but institutional water treatment technologies (IWT). This has been checked during on site visit and reviewing filter

		technical specifications[12]. Furthermore, interviews were also done for cross check purposes. No discrepancies were identified.
d. Where the project involves the rehabilitation of an existing technology, the project developer shall provide evidence that the existing technology is non-operational and that there is no planned maintenance or repair for at least 3 months after the date it became non-operational.	N/A, the project does not include rehabilitation of an existing technology.	Not applicable to the VPA as it does not involve the rehabilitation of an existing technology but the installation of new institutional water treatment technologies (IWT). This has been checked during on site visit and reviewing filter technical specifications[12]. Furthermore, interviews were also done for cross check purposes. No discrepancies were identified.
e. This methodology allows for project activities to include safe water treatment and/or supply technologies implemented for end-users in households, and/or commercial premises such as shops or institutional premises including half or full day/boarding schools, prisons, army camps & refugee camps.	The project activity includes IWT for half, or full-day/boarding schools.	The project is implementing institutional water treatment technologies (IWT) in public schools (half or full day/boarding). Hence applicability condition is fulfilled. This has been checked during on site visit and reviewing filter technical specifications[12]. Furthermore, interviews were also done for cross check purposes. No discrepancies were identified.
f. In cases where the safe water is retrieved at the CWT or CWS location, the water in its improved form shall be available within a distance of 1 km or less from the end-users, as demonstrated by satellite imaging or GPS coordinates of each CWT or CWS location. Alternatively, as a proxy, a total collection time of 30 minutes or less for a round trip, including queuing, using the travel modes of walking or pedaling may be demonstrated.	N/A, the project does not include CWT, nor CWS.	Not applicable to the VPA as it does not involve: - Community level water treatment technologies (CWT), nor - Community water supply technologies (CWS). but institutional water treatment technologies (IWT). This has been checked during on site visit and reviewing filter technical specifications[12]. Furthermore, interviews were also done for cross check purposes. No discrepancies were identified.

g. Project technology performance level (HWT and IWT): It shall be demonstrated based on report of laboratory testing or official notification that the project technology or equipment achieves either (i) the performance target classification 3-star or 2-star level, meaning "Comprehensive Protection" as per the WHO International Scheme to Evaluate Household Water Treatment Technologies (World Health Organization, 2011) or (ii) compliance with the national standard or guideline for household drinking water treatment technology; if no national guideline or standard is available, then the project technology shall comply with the WHO International Scheme requirements as per (i).	The performance level of the IWT technology is rigorously tested by independent laboratories (including an ISO certified lab) to meet protocols established by the US Environmental Protection Agency (EPA) and NSF International/ANSI. The technologies are also tested and approved for use in Rwanda by the Rwanda Bureau of Standards: Rural Drinking Water Quality Management Framework.	The project is implementing institutional water treatment technologies (IWT) which will demonstrate (on a VPA level) based on report of laboratory testing or official notification that the project technology or equipment achieves either (i) The performance target classification 3-star or 2-star level, meaning "Comprehensive Protection" as per the WHO International Scheme to Evaluate Household Water Treatment Technologies (World Health Organization, 2011) or (ii) Compliance with the national standard or guideline for household drinking water treatment technology; if no national guideline or standard is available, then the project technology shall comply with the WHO International Scheme requirements as per (i). According to VPA-DD, the water performance will be evaluated through independent laboratory analysis at the VPA level. Hence applicability condition is fulfilled. The Lifestraw Community Evidence Dossier/12.3/ containing the internal lab results has been checked. The technology achieved 3-star meaning "Comprehensive Protection" as per the WHO International Scheme to Evaluate Household Water Treatment Technologies (World Health Organization, 2011). Furthermore, also laboratory reports shown fulfilment of the Rural Drinking Water Quality Management Framework/13/ and the RSB evaluation/32/. Hence applicability condition is fulfilled.

h. Project technology performance level (CWT and CWS): For each individual CWT or CWS, it shall be demonstrated at the start of each crediting period with water quality testing reports that the water directly supplied by the project water technology/source achieves both: ii. microbial quality in line with either (i) national standards or guidelines for microbial quality of drinking water, or in the absence of such requirements, (ii) the guideline values for verification of microbial quality from the Guidelines for drinking-water quality (Table 7.10, WHO, 2017) 10; and iii. compliance with (i) national standards or guidelines on priority chemical contamination and physical and aesthetic aspects, or in the absence of such requirements, (ii) international standards or guidelines on priority chemical contamination and physical and aesthetic aspects.	N/A, the project does not include CWT, nor CWS activities.	The project is implementing institutional water treatment technologies (IWT) in public schools (half or full day/boarding). Hence applicability condition is fulfilled. This has been checked during on site visit and reviewing filter technical specifications/12/. Furthermore, interviews were also done for cross check purposes. No discrepancies were identified.
i. The project must conduct annual water hygiene education campaigns for the end-users.	The annual water hygiene education campaign for end-users will include the following aspects: - Access to sanitation amenities, equipment and infrastructure, and the behavioral use of such amenities, including prevention of infections	The project is implementing institutional water treatment technologies (IWT) which will demonstrate (on a VPA level) based on proper evidence to demonstrate water hygiene education campaigns for the end-users (at least once per year). According to VPA-DD, the water hygiene education campaigns will

	from water-related diseases. - The hygiene campaigns will be carried out on a yearly basis and results will be summarized in the monitoring reports. The campaign's outcome report will include any major changes in the health status of the water users as a result of contaminated water and a strategy (when required) to address issues found (e.g., an outbreak of water-related disease).	be done on a yearly basis and results will be summarized in the monitoring reports, including any major changes in the health status of the water users. Hence applicability condition is fulfilled. Evidence of the "Hygiene campaigns" and the "Report of annual hygiene campaigns results" required by the applied methodology have been checked. No discrepancies were identified.
j. A project applying this methodology may make SDG claims if relevant monitoring parameter(s) is included in the monitoring plan to demonstrate and confirm the project's contributions to SDGs.	Besides SDG 13, the project includes impacts to: - SDG 6 indicator: Proportion of population using safely managed drinking water services. - SDG 7 indicator: Number of beneficiaries: Individuals. - SDG 8 indicator: Total number of jobs created (during Distribution and monitoring, and Evaluation).	The sustainable development goals (SDGs) and their outcome is transparently discussed under section B.2 of the VPA-DD/01/. The sustainable development goals (SDGs), the SDG target and its indicator is transparently discussed under section B.7.1 of the VPA-DD/01/. It is VT opinion that the selected SDGs are correctly chosen in the context of the VPA, the host country and the technology implemented. The VT has checked and reviewed the VPA-DD with supportive evidence/09/ and found the details to be correct. Hence applicability condition is fulfilled.

3.10 VPA Boundary and emission sources

According to the applied methodology, the project boundary shall include:

a. the physical, geographical sites of the low- or zero-greenhouse gas emitting technologies to treat/supply safe drinking water installed by the project activity,

b. any back-up engines or other equipment using fossil-fuel related to the low- greenhouse gas emitting technologies,

c. the electricity grid, in the case electricity is used by the project, and the household, commercial and institutional buildings where the end users of safe water provided by the project are located.

According to the VPA-DD, the VPA includes low/zero-energy water filtration technology that displaces the use of woody fuels commonly used to treat drinking water. The water filtration technology installed requires no energy input. This has been checked during on site visit when visiting the schools where the water filters have been installed. No discrepancies were identified between the VPA boundary description and the methodology requirement. Furthermore, according to paragraph 5.8.7 of the Programme of Activity Requirements and Procedures[A-2]:

In accordance with the applied methodology(ies) in real case VPA, the CME shall:

a. define the project boundary including the physical delineation of the VPA, and

b. select the sources and GHGs that are included/excluded in the project boundary and provide explanation with justification for the choice.

The project boundary as per the VPA-DD is the schools located different districts in the (Northern, Southern, Eastern, Western) provinces of Rwanda. The location has also been confirmed through website https://www.google.co.in/maps. The project boundary of the VPA is correctly selected according to the context of the PoA. No discrepancies were identified.

The GHG gases included in the project boundary are:

Scenario	Source	Gas	Included	Justification/Explanation
Baseline scenario	Emissions from wood fuels utilized for obtaining safe drinking water displaced due to project activity	CO_2	Yes	Major source of emissions
		CH4	Yes	Minor source of emissions
		N_2O	Yes	Minor source of emissions
	Emissions from fossil fuels utilized for obtaining safe drinking water displaced due to project activity	CO_2	Yes	Major source of emissions
		CH_4	No	Excluded for simplification
		N_2O	No	Excluded for simplification

Project scenario	Emissions from electricity for operating project water supply/treatment technology	CO_2	No	Limited electrical energy may be required
		CH_4	No	Excluded for simplification
		N_2O	No	Excluded for simplification
	Emission from fossil fuels for operating project water supply/treatment technology	CO_2	No	Limited fuel energy may be required
		CH_4	No	Excluded for simplification
		N_2O	No	Excluded for simplification

The description of how to define VPA boundary of each of the corresponding VPA and the selected sources and gases are correctly justified in the VPA-DD for the proposed real case VPAs. No discrepancies were identified.

After CL 03 was closed, the VT can confirm that the project boundary identified is appropriately addressed in the VPA-DD, in accordance with the applied methodology/B/ and Programme of Activity Requirements and Procedures/A-2/. No discrepancies were identified.

3.11 Baseline scenario

According to paragraph 3.4.1 of the applied methodology:

For users that boil unsafe water for drinking in the pre-project scenario, the general baseline scenario is that users would have boiled water for drinking in the absence of the project activity.

According to the VPA-DD the target population is schools that use either three stone fired wood stove, traditional biomass cookstove, or other kind of stoves. This has been observed and confirmed during on site assessment when visiting the sampled schools. Hence, the baseline scenario has been correctly described as per the applied methodology.

As per the programme of activity requirements and procedures, paragraph 5.9.4, the CME shall explain how to establish the baseline scenario considering relevant national and/or sectoral policies, regulations and circumstances. This has been correctly included in section B.4 of the VPA-DD.

According to the VPA-DD:

a) The proposed project activity does not overlap, displace or is considered redundant to the main national sectoral policies for mitigation of GHG;

b) There are no mandatory laws or specific requirements in Rwanda to foster the installation of water filtration technologies;

c) The common practice treatment method (e.g. boiling) or consumption of untreated water would be taken as the business-as-usual scenario (i.e. baseline scenario) in the selected schools,

d) Water treatment implies costs that schools cannot afford, and Rwanda's frameworks and regulations, while related to water resources, water supply, and sanitation, still fails to provide adequate protection and effective treatment of water, exposing communities, including the schools, to health risks.

To confirm the above information, the following evidence have been checked:

- Rural Drinking Water Quality Management Framework/13/
- Rwanda Standard (RS EAS 12:2014), Potable water – Specification (RSB 2014) /13/
- National Water and Sanitation Policy (2023)/CC/
- Water Law No. 62/2008/DD/
- National Guidelines for Sustainable Rural Water Supply Services (2019)/EE/

It can be confirmed that there is no publicly available evidence to demonstrate installing water filter technologies in schools is mandatory. Furthermore, during on site visit, it has been demonstrated through interviews with head master, teachers and employees of the sampled schools that the common practice for drinking water purposes is to boil the water or drinking directly from its source. Furthermore, without water filters, students drink less water than expected (supresed demand). Hence, it can be concluded that relevant national and/or sectoral policies, regulations and circumstances have been taken into account in the establishment of the baseline scenario.

Furthermore, as per paragraph 3.4.2 of the applied methodology:

For household end-users currently drinking unsafe water, the principles of suppressed demand are applied, such that the general baseline scenario is assumed to be that users would have boiled water for drinking in the absence of the project activity. The suppressed demand baseline does not apply to a large-scale project. A large-scale project can only account the users that boil water in the pre-project scenario. The suppressed demand baseline may be applied for institutional end-users, except where the institution is connected to a public distribution network (PDN) that supplies safe drinking water - unless justified that supplied water quality doesn't meet safe water definition (parameter SDWS 12).

According to the VPA-DD, for the cases of end-users currently drinking unsafe water (because e.g., energy poverty barriers) result in less than the minimum required amount of safe drinking water, the principles of suppressed demand are applied and the baseline is set as a proxy technology (water boiling of an adequate quantity of drinking water) based on the standard of living achieved by peers (adequate supply of safe drinking water). During on site visit in the selected schools, it has been asked in all schools whether children drink more water now that the water filters are installed (see question #8). In all cases, the answer was always affirmative. Furthermore, during on site visit, it has been observed that the filters are located inside the classrooms where children have direct access to filtered water. In the scenario previous the implementation of the project, it has been confirmed by principals and teachers of the schools, that children did not drink enough water as there were no source inside the classrooms and it was only available during lunch times. Hence, suppressed demand is confirmed. This is also

aligned with the rule update from GS regarding Application of suppressed demand, project type and applicable scale threshold (RU 2020 PR-GHG V1.2)[/A-7/]. All requirements from the rule update which are related to threshold of 600 tCO_2 per year for IWT technologies. This has been already checked and assessed in the eligibility condition #7 (additionality). The conditions is fulfilled.

The drinking water sources, treatment methods and stove used at baseline scenario were defined applying a baseline survey[/10/]. The baseline scenario selection and justification, (aligned with the applied methodology paragraph 3.5) for the VPA is summarized in the VPA-DD as follow:

a) Pre-project practices of boiling water, or drinking unsafe water (suppressed demand);
b) Efficiency of water boiling systems, and
c) Baseline fuels.

As stated in the applied methodology[/B/] when sampling is applied to determine mean (average) parameter values or proportion (e.g. yes/no) parameter values for both ex-ante and monitored data and parameters, the guidelines provided in section 4.2 shall always be applied. Furthermore, it is also stated:

A statistically valid sample can be used to determine parameter values as per the relevant requirements for sampling in the "Guidelines for Sampling and surveys for CDM project activities and programme of activities[/D-2/], version 4.0". A minimum of 90% confidence interval and a 10% margin of error requirement shall be achieved for the sampled parameters. In any case, for proportion parameter values, a minimum sample size of 30, or the whole group size if this is lower than 30, must always be applied. Further, cross-VPA sampling is not accepted across groups larger than 10 VPAs.

When a baseline and project survey is used, the following sample size guidelines should be applied, unless otherwise stated for specific parameters:

Group size	Minimum sample size
<300	30 or population size, whichever is smaller
300 to 1000	10% of group size
> 1000	100

All end-users included in surveys or sampling related to baseline determination or operation of the project shall be located within the 1 km radius of the CWT or CWS location.

For guidance, project developers may refer to the valid version of the Guidelines for Sampling and surveys for CDM project activities and programme of activities[/D-2/], for the type of sampling approach (simple random, cluster, stratified etc.) applicable to their project context.

Although the project population expected to be reached by the VPA is 100 schools, the 100% of the schools were sampled, exceeding by far the minimum required (30 samples). It is worth to mention that more schools (+600) were screened, but only those fulfilling the programme inclusion criteria have been included in the baseline assessment. The Baseline survey template questions[/10/] and the Baseline survey results[/11/] were checked. As a result:

a) The pre-project practices of boiling water, or drinking unsafe water (suppressed demand): 1% of Borehole or tubewell, 90% of rainwater collection, 1% of eligible schools supplying water by utility, 85% of protected spring and 2% of unprotected spring; as per baseline survey (Total may be more than 100% because schools can have more than one source);

b) The efficiency of water boiling systems: determined as per baseline survey. Specific information on the weighted average of stove types used are reported under parameter SDWS 11, and

c) The baseline fuels: according to the baseline survey, 99% of schools reported using firewood as main cooking fuel, while 1% of schools used charcoal in unimproved cookstoves in the target area. For simplification proposes, the PD assumed 100% of the schools use firewood. This has been cross checked against traceable and applicable evidence, such as the publication "Policy and market review for modern energy cooking in Rwanda"/J/

The survey results were assessed in the context of the project activity. During on site visit to the selected schools, it was observed that water source is mainly coming from rainwater collection (90%) and local springs (85%). The raining collecting systems were observed. Furthermore, firewood accounts for 93% of the main fuel used for cooking. The same was observed during on site assessment when visiting all kitchens from the selected schools. This was also cross checked with interviews with the principal, teachers and schools' employees. No discrepancies were identified. The baseline survey results correspond to the situation observed during on site assessment to the selected schools. Moreover, this observed situation was also cross checked against public information such as the Rural Drinking Water Quality Management Framework/13/ (See section 2, page 2, current status of rural drinking water quality management). No discrepancies were identified.

Summarizing, the VPA will install Institutional Water Treatment (IWT) technologies to schools under the suppressed demand baseline approach. Thus, it is assumed that in the absence of the project activity, the baseline scenario would be the use of biomass cookstove for boiling unsafe water for drinking purposes, as safe drinking water is not available to the end users.

It can be concluded that the defined baseline scenario is plausible and aligned with the applied methodology and GS requirements.

3.12 Demonstration of Additionality

According, to the applied methodology/B/, there are two conditions for the demonstration of additionality:

- Paragraph 3.3.1 the project developer shall demonstrate that the project could not or would not take place without carbon finance. Possible reasons for the need for carbon finance may be that the initial investment or the on-going marketing, distribution, quality control, manufacturing and maintenance costs are unaffordable for the target population.

  According to the PoA-DD, the proposed project activity is a voluntary action coordinated by Virridy. There is no mandatory laws or specific requirements/13/ in Rwanda to foster the installation of water filtration technologies. In the absence of the project, the common practice treatment method (e.g. boiling) or consumption of untreated water would be taken as the business-as-usual scenario in the selected schools. This has been confirmed through on-site visit and interviews performed. No discrepancies were identified.

The provision of water treatment is not financially viable in the context of implementation of the proposed VPA, which makes it not financially attractive and makes the carbon revenues crucial for the implementation and operation of the VPAs.

Furthermore, this kind of justification is applicable when additionality is demonstrated through financial analysis which this is not the case.

- Paragraph 3.3.2 also states the project developer shall demonstrate additionality by conforming to additionality requirements from different options which applicable GS4GG activity requirements has been selected.

According to requirement 4.1.9 of the Community Services Activity requirements/A-3/, projects that meet any of the following criteria are considered as deemed additional and therefore are not required to prove Financial Additionality at the time of Design Certification:

a) Positive list (Annex B);
b) Projects located in LDC, SIDS, LLDC
c) Microscale projects.

According to Annex B (Positive List) of the Community Services Activity requirements/A-3/, the positive list for community services projects consists of the following types:

1.1.3 Project activities solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year or <= 600 tonnes of emission reductions per year.

The project is implementing institutional water treatment technologies in public schools (IWT). The technology deployed includes one or more of the advanced water filtration technologies as described in section B.5. Moreover, the VPA-DD has calculated the ER per filter installed showing 103 tCO_2e in part-time schools, 147 tCO_2e in full time schools and 105 tCO_2e in boarding schools. Hence, the PoA fulfils requirement 1.1.3 of the positive list of the Community Services Activity requirements/A-3/ as it is an isolated unit where the users of the technology are institutions (e.g. Schools in Rwanda) and where each unit results in <= 600 tonnes of emission reductions per year. This has been checked during on site assessment when observing the water filters installed at each selected school. Furthermore, the calculation of the emission reductions threshold per year included in section B.5 of the VPA-DD has been checked and found as correct.

On the other side, the PD calculated also the energy savings per year which results in 45.146 MWh. This is below the threshold of 600 MWh. Both conditions are fulfilled even it is not necessary and the PD has selected the one related with tCO_2e per year. The ER calculation/7/ has been checked. No errors, miscalculations, omissions, misstatements, or incomplete information have been identified. Hence, the proposed VPA is indeed additional and therefore it is not required to prove additionality at the time of Design Certification.

3.13 Prior consideration

According to paragraph 4.1.50 of the principles and requirements[/A-1/]:

(a) Regular VPAs are exempt from any kind of prior consideration of carbon revenue checks.

(b) Retroactive VPAs with a project start date before or after the time of first submission of the PoA must submit the required documents for preliminary review within one year of its start date. Retroactive VPAs that are submitted at a date later than one year from the VPA start date will not be eligible for Gold Standard Certification.

The physical local consultation took place on 23/06/2023 and the project start date was 26/06/2023, which is the date of installation of the first water filter[/19/] and the first submission of the PoA was 30/11/2023 as observed in the Impact Registry web site[/L, M/]. Hence, the real case VPA is a regular submission and it is exempt from any kind of prior consideration of carbon revenue checks.

3.14 Ongoing Financial Need

According to paragraph 4.1.52 of the principles and requirements[/A-1/], Ongoing Financial Need shall be demonstrated at Design Certification Renewal. Hence, it is not applicable to the VPA as this is design certification.

3.15 Sustainable Development Goals (SDG) outcomes

The following targets have been selected by the PD:

SDGs	SDG Target	Indicator
13 Climate Action (mandatory)	13.2 Integrate climate change measures into national policies, strategies and planning	Reduction in GHGs emissions
6 Clean water and sanitation	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1 Proportion of population using safely managed drinking water services
7 Affordable and clean energy	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	Number of beneficiaries: Individuals
8 Decent Work and Economic Growth	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	Total number of jobs created (during Distribution and monitoring, and Evaluation)

The sustainable development goals (SDGs) and their outcome is transparently discussed under section B.6 of the VPA-DD/04/. The VT has checked and reviewed the VPA-DD with supportive evidence/09/ and found the details to be correct.

The VT reviewed the information provided in the VPA-DD regarding contribution to sustainable development goals and it can be concluded that have demonstrated clear and direct contribution to sustainable development, defined as making demonstrable, positive impacts on at least three Sustainable Development Goals (SDGs), one of which must be SDG 13.

The VT concludes:

a. All assumptions and data used by the PD are listed in the PDD, including their references and sources;

b. All documentation used by the PD as the basis for assumptions and source of data is correctly quoted and interpreted in the VPA-DD;

c. Potential SDG Impacts are a primary effect – an intentional, direct effect of the proposed project and not a 'one off' or an effect generated in design, construction, distribution, start-up or decommissioning of the proposed project;

d. The proposed project has identified potential SDG Impacts by comparing the project scenario to the baseline scenario.

e. The proposed project has identified relevant monitoring indicators and/or monitoring parameters and described the monitoring approach in the PD to inform future Monitoring Reports (MRs).

f. It has been established that no SDGs require an opinion and recommendations of Expert Stakeholder(s).

The SDG Impact Methodological Tool/09/ has been assessed and cross checked against observations performed during on site visit, with interviews done of project users at selected schools. It can be concluded that the CME has clearly described the SDGs of the proposed VPA according to requirements of the Programme of Activity Requirements and Procedures/A-2/. The description provides and understanding of the nature, implementation and monitoring arrangements for VPAs that will be included in the proposed VPA. No errors, miscalculations, omissions, misstatements, or incomplete information have been identified.

3.16 Emissions reductions

According to the applied methodology/B/ the quantification method for baseline, project, and leakage emissions are described as follow:

I. Baseline emissions:

Baseline emissions is calculated as per equation 3:

$$BEy = EF_b \times (1 - Cb - X_{cleanboil,y}) \times Qy \times Mq,y$$

Where:

BEy = Baseline emissions from the use of fuel to obtain safe water in the baseline (tCO_2e)
$Cb\_$ = Proportion of project end-users who in the baseline were already using a safe water supply that did not require boiling (%)
$X_{cleanboil,y}$ = Proportion of project end-users that boil safe water in the project year y (%)
Qy = Quantity of safe drinking water provided by the project in year y (L)
Mq,y = Modifier for the water quality in year y

The baseline emission factor is calculated as per equation 1:

$$EF_b = SE_{w,b,y} * \sum_f (x_f * (EF_{b,f,CO2} * f_{NRB,f,y} + EF_{b,f,nonCO2})) \; f \div 10^9$$

Where:
EF_b = Emission factor for the use of fuel to obtain safe water in the baseline (tCO_2e/L)
$SE_{w,b,y}$ = Specific energy required to boil water (kJ/L), to be calculated as per the paragraph below
x_f = Proportion of fuel f used in the baseline (fraction determined based on an energy basis)
$EF_{b,f,CO2}$ = CO_2 emission factor from use of fuel f (tCO_2/TJ)
$EF_{b,f,nonCO2}$ = Non-CO_2 emission factor arising from use of fuel f, when the baseline fuel f is biomass or charcoal (tCO_2e/TJ). This parameter is omitted when f is a fossil fuel.
$f_{NRB,f,y}$ = Fractional non-renewability status of woody biomass fuel during year y (fraction). For biomass, it is the fraction of woody biomass that can be established as non-renewable. This parameter is omitted when f is a fossil fuel.
f = Index for baseline fuel types

The specific energy required to boil water using the baseline technology ($SE_{w,b,y}$) is determined as follows, by calculating the energy input required to obtain 1 L of boiling water, including boiling and vaporization losses, and taking into account default or measured stove efficiency.

$$SE_{w,b,y} = 360.83/\eta wb$$

Where:

360.83 = Default amount of energy required to obtain 1 L of water after 5 minutes of boiling from a first principles approach kJ/l

The quantity of safe drinking water (Q_y) provided by the project is calculated using one of two methods. Method 1 applies to CWT and CWS, and Method 2 applies to HWT and IWT. As the VPA is implementing institutional water treatment technologies (IWT) in public schools (half or full day/boarding), method 2 shall be used with equation 6:

$$Q_y = \Sigma\, N_{p,y} \times U_{p,y} \times QPW_{hh,p,y} \times DPp,y$$

. p

Where:

$N_{p,y}$	=	Number of premises type p with at least one project technology in year y
$U_{p,y}$	=	Usage rate of the project technology by premises type p during year y (%)
$QPW_{hh,p,y}$	=	Volume of drinking water per premises p per day in year y (L)
$DP_{p,y}$	=	Days the project technology is present for end-users in the premises p in year y

The volume of drinking water per premises per day is determined by considering whether the capacity of the project device is sufficient to provide at least the default amount of drinking water, as equation 7:

$$QPW_{hh,p,y} = \min((qi \times t_{p,y} \times DN_{p,y}), (QPWp \times HN_{p,y}))$$

Where:

qi	=	Capacity of the HWT or IWT individual project technology (L/h)
$t_{p,y}$	=	Usage time of the project technology by premises type p in year y (h/day)
$DN_{p,y}$	=	Average number of individual project technologies in each project premises type p in year y
$HN_{p,y}$	=	Number of individuals per premises type p (e.g., household, school) in year y
QPW_p	=	Volume of drinking water per person per day for premises type p (L). Apply the default value or monitored value through water consumption field tests in the project scenario, capped at 5.5 L per person per day.

II. Project emissions:

According to the applied methodology/B/ project emissions may result from the fossil fuel and/or electricity that is consumed from new low-emission water treatment technologies.

LifeStraw® technology does not use fossil fuel or electricity for filtration/12/; thus, the project emissions would be zero.

III. Leakage emissions:

According to the applied methodology/B/ leakage relating to the non-renewable woody biomass shall be assessed. Other types of leakage are excluded for simplification. Furthermore, according to paragraph 3.8.3:

"If the ex-ante evaluation shows that leakage emissions are less than 5% of total emission reductions, then no monitoring is needed, and emission reductions simply shall be adjusted 5% down. In this case, the sources and magnitude of leakage emissions must be reassessed at the time of crediting period renewal".

According to the VPA-DD:

a) The availability of renewable biomass is limited in the project geographic boundary, this is evident in the value of the fNRB. Therefore, it is not expected the use of renewable biomass or the use of low emitting technology increase among population that do not participate in the project. The fuelwood saved by the project may continue available in the market, however, it is found contra intuitive that users of low emitting technology that consume less fuel than conventional technology, will increase the fuel consumption because it is available.

b) Although the project expects to reduce the demand and consumption of NRB, the contribution in the overall fraction of NRB is not expected to lead a shift that would require other projects to account it in their baseline scenarios. The estimated amount of firewood saved per year is of 218 tonnes (estimated based on the specific energy required to boil 1 liter of water, the firewood NCV, and the amount of water supplied by the project per year). The Commercial woody biomass consumption for energy applications (including institutional uses of woody biomass) is 907,140 tonnes per year. The project savings represent only the 0.024% of the total consumption. Therefore, the impact of the project on the availability of biomass is negligible, as well as the potential source of leakage

c) Because the climate zone where the project is located, space heating does not influence the consumption of biomass fuel. Apart from boarding schools, school kitchens are not occupied permanently as households. Therefore, heating space concerns are not relevant for the present VPA.

Quantification has been given to demonstrate that leakage emissions are less than 5% of total emission reductions. For this purpose, it has been established:

1. The estimated amount of firewood saved per year by the VPA is of 218 tonnes, considering on the specific energy required to boil 1 liter of water, the amount of fuel wood to boil 1 liter of water based on the NCV of the firewood and the amount of water supplied by the project per year. The input values have been checked in the ex-ante ER calculation spread sheet[7]. No discrepancies were identified.

2. On the other side, the (commercial) yearly woody biomass consumption for energy applications is 907,140 tonnes (from the average consumption of wood fuel per household, as applied in the calculation of the fNRB). The input values have been checked in the fNRB calculation[8]. No discrepancies were identified

As a result, the VPA savings represent 24% of the total consumption considered. Hence, it has been concluded by the PD the impact of the project on the availability of biomass is negligible,

as well the potential source of leakage. The estimation was correctly calculated based on traceable sources included in the respective spread sheets. No errors, miscalculations, omissions, misstatements, or incomplete information have been identified

Calculation of the fraction of non-renewable biomass:
The PD has followed the requirements described in the CDM tool 30, which is an acceptable method to calculate the fraction of non-renewable biomass as per the applied methodology Hence, the VT considers using this method as appropriate.

The VT has checked the fNRB calculation/8/ provided by the PD. The CDM Methodological Tool 30 "Calculation of the fraction of non-renewable biomass"/D-3/ has been applied.

All formulae described in the tool have been used. Each formula of the calculation was cross checked against the tool. No discrepancies were identified. All sources and parameters were clearly indicated by the PD in the calculation. The sources provided are:

1. Global Forest Resources Assessment 2000 by the FAO for "Distribution of total forest area by ecological zone" (Table 14) - Rwanda; https://www.fao.org/3/y1997e/y1997e21.htm
2. 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories - Table TABLE 4.9 (UPDATED) ABOVE-GROUND NET BIOMASS GROWTH IN NATURAL FORESTS; https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch04_Forest%20Land.pdf
3. FAO, FRA2020 Office study Rwanda. Basic data. Table. The above assumptions and estimates give the following estimated time series; https://www.fao.org/3/ca9878fr/ca9878fr.pdf
4. FAO, FRA2020 Office study Rwanda. 3b Forest area within legally constituted protected areas and forest area subject to long-term
5. AFRICAN ENERGY COMMISSION. Detailed Energy Balances for Rwanda 2021. https://au-afrec.org/data-statistics-energy-balances
6. IPCC (2006) "IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 1, Introduction, Table 1.2, p 1.19
7. FAO Forestry Production and Trade, Country: Rwanda, Elements: Production Quantity, Items: All but Woodfuel and Wood charcoal, Years: 2022 (Imputed values); https://www.fao.org/faostat/en/#data/FO
8. Wood Density Air-Dry WD ad https://www.fao.org/3/a1106e/a1106e00.htm

All sources were checked directly from the origin. No discrepancies were identified. No errors, miscalculations, omissions, misstatements, or incomplete information have been identified. Sources are provided as defined by the applied tool.

Values of fNRB from similar projects have been provided as cross check:

Project	Value	Reference
GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools (this project)	84.85%	**fNRB Calculation/8/**
GS10959 VPA06 Safe Water Project in Rwanda VI	96.82%	https://registry.goldstandard.org/projects/details/3092
GS7591 VPA 53 Improved Cookstove Distribution in	90%	https://registry.goldstandard.org/projects/details/4175

Kayonza, Bugesera and Nyamasheke Districts of Rwanda (GS12227)		
Water for Climate Rwanda (GS6598)	92.23%	https://registry.goldstandard.org/projects/details/1531

The difference between the higher compared value is 11.97% and with the lower value is 5.15%. The average of the compared values is 93%. The calculated value is considered reasonable as compared to other registered projects in the host country. Hence, the calculated fNRB is considered plausible and correct.

Furthermore, as stated in paragraph 6, (b) of the CDM Methodological Tool 30 Calculation of the fraction of non-renewable biomass[/D-3/]:

"The PP shall compare and analyze the calculated values against the values for fNRB reported in relevant scientific literature and justify any difference".

According to the VPA-DD, section B.6.2:

The fNRB methodology of calculation and data sources between the CDG TOOL30 and the relevant scientific literature from Bailis, R.; Drigo, R.; Ghilardi, A. & Masera, O. (2015). The carbon footprint of traditional woodfuels. Nature Climate Change, 5(3), pp. 266–272 are substantially different and the approaches followed make it difficult to compare both results, 84.85% and 63.4%-64.7% accordingly.

The study conducted by Bailis et al. is based on the WISDOM approach, a spatially explicit analytic method developed to identify priority areas of intervention and supporting biomass energy planning and policy formulation. The approach utilizes steps such as mapping of wood fuel supply, mapping of demand patterns, identification of "hotspots", and woodshed analysis. The WISDOM approach used by Bailis et al. relies on extensive data research, geospatial analysis, assumptions and hypotheses based on researchers' knowledge. Calculating fNRB using the WISDOM method requires extensive resources and high-level technical knowledge and it still has shortfalls that are being debated.

The approach applied as per the CDM Tool 30 is based on determining the share of renewable and non-renewable woody biomass, accounting for (among others) mean annual increment and consumption.

The two approaches follow materially different methodologies. Thus, like-for-like comparison between results is not appropriate.

As per the Methodology for Emission Reductions from Safe Drinking Water Supply v1.0, Data/parameter SDWS 21, the CDM TOOL30 is the only approved method for calculation of fNRB. Thus, the calculation presented using the of fNRB following CDM TOOL30 is deemed acceptable by the methodology.

The PD has provided the analysis of the calculated values against the values for fNRB reported in relevant scientific literature. The PD has justified the difference accordingly. Hence, the

requirement stated in paragraph 6, (b) of the CDM Methodological Tool 30 Calculation of the fraction of non-renewable biomass[D-3] has been fulfilled and it is considered acceptable by the VT. Furthermore, references of other registered projects have been given which provides more realistic and actual information of fNRB of projects already registered in Rwanda.

After review the quantification methods used for the determination of the baseline and project emissions, the VT confirms that:

a) All assumptions and data used by the PD are clearly referenced in the fNRB calculation, including any reference and source;

b) All documentation used by the PD as the basis for their assumptions and source of data is correctly quoted and interpreted in the fNRB calculation

c) The calculations of fNRB have been carried out in accordance with the formulae and methods described in the applied tool;

d) The most conservative values approach has been applied to the parameters in accordance with the provisions of the applied tool;

e) Any assumptions, GWPs, emission factors, default values and other reference used in the fNRB calculation are considered reasonable in the context of the PoA/VPA and have been correctly applied and properly justified;

All data included in the calculation spread sheet was complete and correctly applied;

IV. Emissions reduction:

The emission reductions are calculated as follows:

$$ERy = BEy - PEy - LEy$$

Where:

ERy	=	Emission reductions in year y (t CO_2e/yr)
BEy	=	Baseline emissions in year y (t CO_2e/yr)
PEy	=	Project emissions in year y (t CO_2e/yr)
LEy	=	Leakage emissions in year y (t CO_2e/yr)

After review the quantification methods used for the determination of the baseline and project emissions, the VT confirms that:

f) All assumptions and data used by the PD are listed in the VPA-DD, including any reference and source;

g) All documentation used by the PD as the basis for their assumptions and source of data is correctly quoted and interpreted in the VPA-DD

h) The calculations of baseline, project and leakage GHG emissions have been carried out in accordance with the formulae and methods described in the applied methodology;

i) The most conservative values approach has been applied to the parameters in accordance with the provisions of the applied methodology;

j) Any assumptions, GWPs, emission factors, default values and other reference used in baseline emission calculations are considered reasonable in the context of the VPA and have been correctly applied and properly justified;

k) The methodology and related documents have been applied correctly to calculate baseline, project and leakage emissions, as well as emission reductions;

l) All data included in the calculation spread sheet was complete and correctly applied;

m) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the VPa-DD

n) Appropriate methods and formulae for calculating baseline GHG emissions have been followed, and

o) Sampling efforts were undertaken as Standard: Sampling and surveys for CDM project activities and programmes of activities[/D-1/];

The calculation, applied formulae and the method for calculation of baseline, project and leakage emissions are in accordance with the applied methodology. The formulae and the methods referred in the VPA-DD and the baseline, project and leakage emission reduction calculation spread sheet for estimation of emission reduction, complies with the corresponding formulae and methods of the mandatory documents. No discrepancies were identified.

V. SDG contribution:

SDG	Baseline scenario	Project situation	Net Benefit
6	In the baseline scenario target, it is included a risk of waterborne disease, poor sanitation, and hygiene conditions due to consumption of unsafe water and limited treatment technology. Therefore, baseline outcome benefit is zero	In project situation, the number of students and schools' staff served with satisfactory level of safe water can be calculated as follows: SDG6 contribution = Np,y*(1-Cb)*Up,y*Mq,y	The contribution to the SDG6 is Proportion of population using safely managed drinking water services: Net benefit SD6 = Proportion of usage of technology provided
7	The use of water filtration technology in the baseline scenario is none or very limited.	In the project situation, the number of premised supplying satisfactory level of safe water makes	The contribution to the SDG7 is defined as the number of beneficiaries using the project technology, defined as follows

		a difference against the baseline scenario	Net benefit SDG7 = Number of beneficiaries at the project - Number of beneficiaries at the baseline.
8	In the absence of the project, no permanent jobs would be created for similar activities.	In the project situation, the project employs local staff for the implementation, operation, and maintenance.	The contribution of the VPA to SDG 8 will be confirmed by the number of jobs or new entrepreneurship activities created due to the project. The signed contracts of the project staff will be made available to the verifier

After reviewing the quantification methods used for the determination of SDG baseline scenario, project situation and net benefit, the VT confirms the determination of net benefit have been carried out in an appropriate way and it is considered plausible in the context of the VPA. No discrepancies were identified.

3.17 Data and parameters not monitored

The following data and parameters available at validation and remain fixed throughout the project crediting period:

Parameter	Value	Source	Assessment
Related to water quality			
Project technology description (SDWS 2)	LifeStraw	Manufacturer specifications	Information from parameter was correctly given. Source is manufacturer information/12/ which is aligned with the description of the applied methodology. No discrepancies were identified.
Regulatory Framework for safe water supply (SDWS 4)	Total Coliforms in 100 ml: 0 E. coli in 100 ml: 0	Rwanda Standard, East African Standard, Potable Water Specification, EAS 12: 2014	Information from parameter was correctly given. Source is Regulatory Framework for safe water supply/13/ which is aligned with the description of the applied methodology. No discrepancies were identified.
Water sources in the project boundary (SDWS 5)	Borehole or tubewell: 1%; rainwater collection: 90%; Eligible schools supplying water by utility: 1%; protected spring: 85%; unprotected spring: 2%	Baseline Survey	Information from parameter was correctly given. Source is the Baseline survey template questions/10/ and the Baseline survey results/11/ which is aligned with the description of the applied methodology. No discrepancies were identified. The baseline survey results correspond to the situation observed during on site assessment to the selected schools. Moreover, this observed situation was

			also cross checked against public information such as the Rural Drinking Water Quality Management Framework/13/ (See section 2, page 2, current status of rural drinking water quality management). No discrepancies were identified
Related to emission reductions			
Stove technologies used in the project boundary (SDWS 6)	3-stone: 27.1%; Imbabura: 5.1%; Muvero: 35.6%; Muvero (good conditions): 8.5%; Rondereza: 23.7%	Baseline Survey	Information from parameter was correctly given. Source is the Baseline survey template questions/10/ and the Baseline survey results/11/ which is aligned with the description of the applied methodology. No discrepancies were identified. The baseline survey results correspond to the situation observed during on site assessment to the selected schools. Moreover, this observed situation was also cross checked against public information such as the Rural Drinking Water Quality Management Framework/13/ (See section 2, page 2, current status of rural drinking water quality management). No discrepancies were identified
Expected technical life of project technology (SDWS 7)	6 years specified by the manufacturer, considering periodic replacement of membrane ultrafilter and cartridge filters	Manufacturer specifications	Information from parameter was correctly given. Source is manufacturer information/12/ which is aligned with the description of the applied methodology. No discrepancies were identified.
xf Percentage of fuel f use in target population (SDWS 8)	Biogas: 1% Charcoal: 1% Biomass 1% Wood 100%	Baseline Survey	Information from parameter was correctly given. Source is the Baseline survey template questions/10/ and the Baseline survey results/11/ which is aligned with the description of the applied methodology. No discrepancies were identified. The baseline survey results correspond to the situation observed during on site assessment to the selected schools. Moreover, this observed situation was also cross checked against public information such as the Rural Drinking Water Quality Management Framework/13/ (See section 2, page 2, current status of rural drinking water quality management). No discrepancies were identified
$EF_{b,f,CO2}$	Wood: 112 tCO_2/TJ	IPCC	Information from parameter was correctly given. Source is the IPCC /P/ but

CO_2 emission factor from use of fuels (SDWS 9)			value is given by the applied methodology. No discrepancies were identified.
$EF_{b,f,non\text{-}CO2}$ Non-CO_2 emission factor from use of fuels, in case the baseline fuel is biomass or charcoal (SDWS 10)	Wood: 9.46 tCO_2/TJ	IPCC	Information from parameter was correctly given. Source is the IPCC /P/ but value is given by the applied methodology. No discrepancies were identified.
ηwb Weighted average efficiency of the baseline water boiling devices. Calculate the weighted average of the water boiling efficiency in the project boundary using the proportion of different stove types used and the stove efficiencies. (SDWS 11)	3-stone: 10%; Imbabura: 10%; Muvero: 10%; Muvero (good conditions): 10%; Rondereza: 10%	Applied methodology	Information from parameter was correctly given. Source is the default values given by the applied methodology. No discrepancies were identified.
Cb Proportion of project end-users who in the baseline were already using safe water, either from an improved water source, or from a water treatment method other than boiling (SDWS 12)	0%	Baseline Survey	Information from parameter was correctly given. Source is the Baseline survey template questions/10/ and the Baseline survey results/11/ which is aligned with the description of the applied methodology. No discrepancies were identified. The baseline survey results correspond to the situation observed during on site assessment to the selected schools. Moreover, this observed situation was also cross checked against public information such as the Rural Drinking Water Quality Management Framework/13/ (See section 2, page 2, current status of rural drinking water quality management). No discrepancies were identified.
qi Capacity of the institutional water treatment technology	27.2 L/h	Manufacturer specifications	Information from parameter was correctly given. Source is manufacturer information/12/ which is aligned with the description of the applied methodology. No discrepancies were identified.

(SDWS 13)			
fNRB,f,y Fractional non-renewability status of woody biomass fuel during year y, in case the baseline fuel is biomass	84.85%	CDM Tool 30 Calculation of the fraction of Non-renewable Biomass/	Value calculated. The VT has checked the fNRB calculation/8/ provided by the PD. It can be concluded that the calculation of fNRB has been followed the CDM Methodological tool 30: Calculation of the fraction of non-renewable biomass/D-3/. No discrepancies were identified. Please detailed assessment in section 3.16 (III).

The VT confirms:

a) All data sources and assumptions are appropriate and calculations are correct as applicable to the proposed VPA and will result in an accurate and conservative estimate of emission reductions;

b) The Sampling efforts were undertaken as Standard: Sampling and surveys for CDM project activities and programmes of activities/D-1/;

c) All the values used against sources and the authenticity of sources has been validated and the VT confirms that all relevant parameters to calculate the GHG emissions reductions of the VPA have been sufficiently considered and the value of the ex-ante fixed parameter used for emission reduction calculation has been determined conservatively and are reasonable.

3.18 Calculation of emission reductions

An emission reduction calculation spread sheet/7/ has been provided by the PD. It is confirmed by the validation team by cross-checking the ER against all referenced data sources and the requirements of applied methodology that:

a) All data sources and assumptions used are listed and referenced in the VPA-DD are appropriate. Calculations are correct, applicable to the proposed VPA and will result in a conservative estimation of the emission reductions;

b) All documentation used by the PD as the basis for assumptions and source of data is correctly quoted and interpreted in the VPA-DD;

c) All values used in the VPA-DD are considered reasonable in the context of the proposed PoA;

d) The methodology has been applied correctly to calculate baseline emissions, project emission, leakage emission and emission reductions.

e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the VPA-DD.

The VT conclude that the applied methodology has been applied correctly to calculate baseline emissions, project emissions, leakage and the overall emission reductions.

3.19 Data and Parameters monitored

The parameters to be monitored are as follow:

Parameter	Value	Source	Assessment
Related to water quality			
$M_{q,y}$ Ongoing water quality indicated as the fraction of the samples that pass microbial quality standard requirements specified in relevant microbial quality standard for drinking water of the host country. (SDWS 18)	1	Testing of water at the exits the treatment technology	Determined as per the applied methodology. No discrepancies were identified. Ongoing water quality indicated as the fraction of the samples that pass microbial quality standard requirements specified in relevant microbial quality standard for drinking water of the host country. In case a national standard is not available, the water quality shall comply with WHO Guideline values for verification of microbial quality i.e., all water directly intended for drinking must not have detectable E.Coli in any 100 ml sample i.e., less than 1 Colony Forming Unit (CFU) of E.Coli /100 ml Annual sampling, and the first round of testing will be conducted at least after six months from the start date. PD may choose to undertake testing more frequently. For ex-ante calculation, a value of 100% has been taken as all samples shown negative presence of microbial.

SDG claims: SDG 13 Climate Action: Amount of GHGs emissions avoided or sequestered. SDG 6 Clean water and sanitation. SDG 7 Affordable and clean energy. SDG 8 Decent Work and Economic Growth. (SDWS 19)	SDG 13: 20,663 tCO_2e (annual average) SDG 6: 100% people SDG 7: 133,156 people SDG 8: 11 permanent jobs	SDG 13 Climate Action: Amount of GHGs emissions avoided or sequestered/7/. SDG 6: Project Survey/21/ of the premises using a project technology to determine the usage rate of the project technology during the year. SDG 7: Installation Records/31/. SDG 8: Human resources records/30/.	SDG 13 Climate Action: Amount of GHGs emissions avoided or sequestered: as per calculation in the ER spread sheet/7/. No discrepancies were identified SDG 6: The Monitoring survey template questions/20/ and the Monitoring survey results including SDGs monitoring results/21/ have been checked. No discrepancies were identified. SDG 7: The PD provided a filter installation database/31/ which can be obtained the Number of beneficiaries. No discrepancies were identified. SDG 8: The Staff contracts/30/ have been provided. No discrepancies were identified.
Water hygiene education campaigns (SDWS 20)	-	Report of annual hygiene campaigns results	Determined as per the applied methodology using a "Report of annual hygiene campaigns results". The report of annual hygiene campaigns/33/ have been provided. Detailed information on the hygiene campaigns is being reported. This has been cross checked during on site visit with visual inspection of the schools and interviews to teachers and staff members. No discrepancies were identified.
Related to emission reductions			

$Xcleanboil,y$ Proportion of project end-users that boil safe (treated, or from safe supply) water after installation of project technology in year y. (SDWS 22)	0	Project survey	Determined as per the applied methodology. No discrepancies were identified. A project survey shall be carried out to determine the value using sampling plan as detailed in section B.7.2 of the VPA-DD and assessment in section 3.20 of this report.
$QPWp$ Volume of drinking water per person per day for premises type p (SDWS 24)	Full-day premises: 4 L/person/day Boarding school: 4 L/person/day Half-time premises: 3 L/person/day	Default values as per methodology	Information from parameter was correctly given. The default values have been used as per options given by the applied methodology. This has been validated through review of the VPA-DD, the ER calculation spread sheet/7/ No discrepancies were identified. The default values were correctly selected.
HNp,y Number of individuals per premises type p in the project boundary in year y (SDWS 25)	Part time school: 609 Full-time school: 867 Boarding school 619	Baseline Survey	Information from parameter was correctly given. Source is the baseline survey template questions/10/ and the Baseline survey results/11/ which is aligned with the description of options to be used as described in the applied methodology. This has been validated through review of the baseline survey and cross check against the official data of the number if students/34/ as requested by the applied methodology. No discrepancies were identified. No discrepancies were identified.
$N_{p,y}$ Accumulated number of premises type p with at least one individual	154	Sales or distribution records	Determined as per the applied methodology based on the filter installation database/31/ which has information of the number of filters

project technology in year y (SDWS 28)			installed per type of school. No discrepancies were identified. Based on the distribution records of "Quantity of project technologies sold/installed". This has been cross checked during on site visit to confirm the average number of filters installed per school. No discrepancies were identified. The number given is accurate.
$U_{p,y}$ Usage rate of the project technology by premises type p during year y (SDWS 29)	Option 1: 100%	Project survey	Project Survey of the premises using a project technology to determine the usage rate of the project technology during the year. Determined as per the applied methodology. The selected usage rate is adequate as the filters are installed directly in the classrooms. Hence, the students have direct access to the filters all time during school times. This has been validated during on site assessment and cross checked against interviews with the principal, teachers and support employees of the schools. No discrepancies were identified.
$t_{p,y}$ Usage time of the project technology by premises type p in year y (SDWS 30)	Option 1: Part time: 6 hours Full time: 8 hours Boarding 10 hours	Based on official schools working hours defined by Ministry of Education Rwanda.	As per the VPA-DD, the usage time of the filters is based on official schools working hours defined by Ministry of Education Rwanda in the official school calendar/R/ which can be considered as per option 1 as this is the official time of working hours were the students are presented in the school and when the filters are used. This has been also observed during on-site visit. No

			discrepancies were identified.
$DP_{p,y}$ Average days the project technology is present for end-users in the premises p in year y (SDWS 31)	207	MINEDUC School Calendar/R/	For schools, it is limited by the number of schools days. Determined as per the applied methodology. The source is the official school calendar/R/ which is a public information issued by the MINEDUC. This was checked directly in its web site. Furthermore, during on site visits, it was also published in the schools. No discrepancies were identified.
$DN_{p,y}$ Average number of individual project technologies in each project premises type p in year y (SDWS 32)	Part time school: 6 Full-time school: 9 Boarding school 6	Sales or distribution records.	The PD provided a filter installation database/31/ which can be obtained the number of individual project technologies in each project premises and then calculate the average per school. This has been checked and found as correct.
Leakage emissions during year y (SDWS 35)	0	As per justification of leakage calculation	Please refer to section 3.16, III leakage emissions for the detailed assessment.

The VT confirms:

a) The estimates provided in the VPA-DD for all data and parameters are reasonable;

b) The Sampling efforts were undertaken as Standard: Sampling and surveys for CDM project activities and programmes of activities/D-1/;

c) All the values used against sources and the authenticity of sources has been validated and the VT confirms that all relevant parameters to calculate the GHG emissions reductions of the VPA have been sufficiently considered and the value of monitored parameters used for emission reduction calculation has been determined conservatively and are reasonable.

3.20 Sampling Plan

According to the VPA-DD, the samples are used to determine a statistically significant parameter value for the calculation of the emission reductions. The parameter sampled are classified in two: (i) non-monitored parameters, and (ii) monitored parameters, where the sampling is done ex-ante and annually, respectively. The table below summarizes both, non-monitored parameters and monitored parameters, and the survey type assigned:

Method	Parameter	Description	Survey type
Non-monitored	Water sources in the project boundary	The water sources identified at the project boundary are classified as improved and unimproved.	Baseline
	Stove technologies used in the project boundary	The proportion of different stove types used in premises in the geographical area of the project.	Baseline
	Percentage of fuel f used in the target population	Efficiency of the stoves for baseline water boiling (%). Weighted average of baseline stove types.	Baseline
	Cb	Proportion of project end-users who in the baseline were already using safe water, either from an improved water source, or from a water treatment method other than boiling.	Baseline
Monitored	$Xcleanboil,y$	Proportion of project end-users that boil safe (treated, or from safe supply) water after installation of project technology in year y.	Project
	Mq,y	Ongoing water quality indicated as the fraction of the samples that pass microbial quality standard requirements	Project
	Up,y	Usage rate of the project technology by premises type p during year y.	Project
	SDG 6	Results from Mq,y shall be used.	Project
	SDG7	Number of beneficiaries: Individuals	Project
	SDG8	Total number of jobs created (during Distribution and monitoring, and Evaluation)	Project

Regarding the sample design for the project survey, according to the VPA-DD, the project survey provides critical information on project performance including usage rates and sustainable development indicators. The sampling results shall satisfy at minimum the 90/10 rule, i.e., the endpoints of the 90% confidence interval lie within +/- 10% of the estimated proportion in relative units. The target population is educational institutions (schools) participating in the programme.

The simple random sampling approach has been selected given the homogeneity of the target population in terms of water consumption,. The simple random sampling is an appropriate method

to estimate the proportion of water purifiers still in operation. Furthermore, a minimum of 90% confidence interval and a 10% margin of error requirement shall be achieved for the sampled parameters. In any case, for proportion parameter values, a minimum sample size of 30, or the whole group size if this is lower than 30, must always be applied. Further, cross-VPA sampling is not accepted across groups larger than 10 VPAs.

When a project survey is used, the following sample size guidelines should be applied, unless otherwise stated for specific parameters:

Group size	Minimum sample size
<300	30 or population size, whichever is smaller
300 to 1000	10% of group size
> 1000	100

The project survey is also referred as monitoring survey, it does include the data collection for usage rates. Those results may be as well identified as Usage Survey, but all the monitoring exercise takes place together using the same sample.

The survey results are subject of at least two reviews from:

1. Internal carbon management department, and

2. External consultant.

Both review stages check data completeness and quality before reporting the data for the verification. This assure a robust quality check of the survey results.

The sampling plan described in the VPA-DD follows all criteria and description defined in the applied methodology/B/ and the Guidelines for Sampling and surveys for CDM project activities and programme of activities/D-2/ and the Standard Sampling and surveys for CDM project activities and programmes of activities/D-1/. No discrepancies were identified. It can be concluded that the proposed sampling plan

3.21 Monitoring Plan

According to the GS Programmes of Activities Requirements/A-2/, paragraph 5.11:

The CME shall develop and describe the monitoring plan for the proposed real case VPA in accordance with the applied methodology and other methodological regulatory documents, other applicable GS4GG rules and requirements, and the provisions in paragraphs below of the document/A-2/.

In the real case VPA, the CME shall also describe how to develop a monitoring plan for its regular VPAs in accordance with the applied methodology and other methodological regulatory

documents, other applicable GS4GG rules and requirements, and the provisions in paragraphs below of the document/A-2/.

The VT reviewed the monitoring plan presented in the VPA-DD versus the requirements of the applicable methodology related GS requirements and interviewed the employees and stakeholders to determine the relevance of the chosen parameters and measures.

The VT reviewed the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures (QA/QC) that will be applied in the monitoring plan versus the applied methodology and GS requirements. No discrepancies were identified. Furthermore, the VT reviewed elements of the monitoring plan, including operational and management structure, data archiving arrangements, among others element versus the applied methodology, GS related requirements and good practices as per the project context. No discrepancies were identified.

Regarding the project data base, this is managed electronically using specialized operating systems. The name of this ERP is mWater. This has been checked during on site assessment. This kind of ERP provides complete and specific information regarding the implementation of the VPA. Monitoring surveys are also designed and managed with mWater. The database, survey records, and all the data collected include redundancy and backups to avoid data losses.

Detailed roles and responsibilities for the management of the VPA have been included. Furthermore, records and documentation control processes and procedures to avoid double counting have been also considered. It is VT opinion those are well described and robust and able to be implemented by the PD.

Moreover, detailed information the process to carry out the Hygiene Campaigns have been also properly described. The project delivers instructions material and posters as part of the hygiene campaigns. Furthermore, during on site assessment it has been confirmed that information sessions for students and also parents are taking place on a regular frequency to disseminate the importance of drinking safe water and hygiene habits.

The procedures and methods have been reviewed by the VT through document review. This information, together with the on-site inspection, allows the VT to confirm that the proposed monitoring plan is feasible, and in accordance with the VPA design and the applied methodology.

After proper correction of CAR 02, the VT confirms that all necessary descriptions have been appropriately reflected in the VPA-DD. The monitoring plan in the VPA-DD is in compliance with the applied methodology and related GS requirements, and the monitoring arrangements described can be implemented and are feasible within the project design. Therefore, it is concluded that all monitoring arrangements included in the VPA-DD are sufficient and the PD will be able to implement the monitoring plan and the emission reductions achieved can be reported ex-post and verified. Assessment of the other elements of the monitoring plan like parameters fixed ex-ante, monitoring parameters and sampling plan are given in the respective section above.

3.22 Start Date and Crediting Period

The starting date of VPA-01 is 26/06/2023, which is the date of installation of the first water filter[/19/]. Hence, the 5 years length of the crediting period starts on 26/06/2023 and ends on 25/06/2028. The crediting period can be renewed twice. The expected operational lifetime of the VPA is 15 years, which is based on three times renewal of the crediting period as per GS rules.

The VPA level consultation meeting was held physically on 23/06/2023, which is before the date of first installation of a filter on 26/06/2023. Hence the project is considered as regular and not retroactive.

In accordance with the para 5.4.1 of GS Programmes of Activities Requirements[/A-2/] "For the VPA start date definition, refer to the Project Start Date as defined in the Principles & Requirements[/A-1/] or applicable activity requirements, if includes a definition of start date.

According to the principles & Requirements[/A-1/] the project start date is the earliest date on which the Project developer has committed to expenditures related to the implementation of the project.

The defined project start date and crediting period is aligned with the definition of the GS Principles & Requirements[/A-1/].

3.23 Safeguard Principles and gender sensitive assessment

Safeguard according to the applied methodology.

Criteria	Justification	Assessment
2.3.1 Project shall document the national, regional and local regulatory framework for provision of safe drinking water in the project boundary (parameter SDWS 4). The project shall not undermine or conflict with any national, sub-national and local regulations or guidance for safe drinking water supply, operation and maintenance, including any tariff requirements	Considered as SDWS 4 in section B.6.2 of the VPA-DD. Regulatory Framework for safe water supply. Rwanda Standard, East African Standard, Potable Water Specification, EAS 12: 2014	Information from parameter was correctly given. Source is Regulatory Framework for safe water supply/13/ which is aligned with the description of the applied methodology. No discrepancies were identified. Please see SDWS 4 in section 3.17 below.
2.3.2 If the expected technical life of project technology (parameter SDWS 7) is shorter than the crediting period, describe measures to ensure that end users are provided replacement systems of comparable quality at the end of the expected technical life (for example, replace with comparable or better technology, retrofit with performance guarantee, etc.). This applies both for new technology and rehabilitated	The expected technical life of an individual project technology is defined as 6 years.	Information from parameter was correctly given. Source is manufacturer information/12/ which is aligned with the description of the applied methodology. No discrepancies were identified. Please see SDWS 7 in section 3.17 below.

2.3.3 All CWT and CWS projects must include ongoing maintenance and repair of the project technology. The PDD must describe the maintenance and repair plan, including the system for logging/documenting of technology operation and maintenance events including periods of downtime13. The log of operation and maintenance shall be required during the monitoring period to demonstrate project technology operation	The technology is installed free of charge. In exchange for the installation and maintenance of the project technology, each school will sign a carbon waiver relinquishing full and uncontested legal ownership of the carbon credits produced by the project and transferring the rights to Virridy Carbon LLC. Local Management Staff is responsible for ensuring the database of the technologies installed is correct and complete, including schools' details, unique identification of each installation, training records, maintenance records, carbon waivers, and any other relevant	Evidence of the training activities/28/ to school staff on the use and maintenance of the water purification system has been provided. Regular maintenance such as cleaning is responsibility of the school. This has been checked during on site visit. No discrepancies were identified. Regarding mayor repairs, this is responsibility of Virridy. This is clearly described in the carbon waiver. No discrepancies were identified.

Safeguard Principles

According to the GS Principles & Requirements/A-1/, the CME shall conduct the Safeguarding Principles Assessment and corresponding monitoring and reporting plan as per the Safeguarding Principles & Requirements at the real case VPA level. Moreover, according to the VPA-DD, the PD has selected option b:

"Regular VPAs shall be exempted from safeguarding assessment, where monitoring and reporting of identified risk and mitigation plan shall be conducted following real case VPA level safeguarding assessment outcome, where applicable".

Regarding the justification for the option chosen regarding safeguarding assessment according to PoA Requirements and Procedures, paragraph 5.5.3:

Criteria	Justification	Assessment
a. The CME shall provide explanation and justifications with supporting evidence for selection of this option in real case VPA, including conditions or circumstances	As detailed in the Appendix 1, no risk was identified for any safeguarding principle, neither mitigation measures were required. The expected real cases VPAs to be included will use the same technology	As it is assessed below for the safeguarding principles assessment, no risk has been identified for any of the Safeguarding Principles. Hence, it is adequate to select option b. Furthermore, it has

under which option (b) shall not be applicable.	type and the target population is the same, the CME does not expect a different outcome from the Safeguarding Principles assessment for the regular case VPAs. Thus, the option b is justified. Option b will not be applicable in case a design change on the Real case VPA is introduced.	been also mentioned the cases where option b is not applicable. It is only in case a design change on the real case VPA is introduced. This is considered adequate by the VT. No discrepancies were identified.
b. The CME shall include inclusion criteria based on identified risks and mitigation plan in real case VPA DD with respect to the relevant safeguarding principles.	NA, no risk identified neither mitigation measure defined.	As it is assessed below for the safeguarding principles assessment, no risk has been identified for any of the Safeguarding Principles. Hence, this requirement is not applicable.
c. The VVB shall validate, and Gold Standard shall approve applicability of option (b),	To be validated and approved by the VVB and GS respectively.	The VVB is validating under this section the convenience of selecting option b. It is VT opinion that option b is justified and it can be applied for the VPA.
d. The CME shall demonstrate compliance with inclusion criteria for each of its regular VPAs.	The inclusion criteria for regular VPAs are clearly defined in section F below.	Inclusion criteria have been included and assessed by the VT in the respective section. The regular VPAs, as stated by the VPA-DD (real case), shall demonstrate fulfilment of all inclusion criteria.
e. The option (b) shall only be applied to regular VPAs submitted for inclusion within three years of crediting period start date of real case VPA.	Only regular VPAs submitted as latest 26/06/2026 can follow the option (b) chosen.	Option b is only applicable for regular VPAs submitted as latest 26/06/2026. Proper statement has been established. No further assessment is required at this point.
f. The CME may seek reapproval for option (b) after three years demonstrating compliance with the requirements outlined above in sub paragraph a to d above. Such re-approval may be validated and submitted for approval with the	In case regular VPAs submitted after 26/06/2026 want to follow the option (b), validation and approval by the VVB and GS respectively will be sought.	If the CME is willing to seek reapproval for option (b) after three years, it shall demonstrate compliance with the requirements outlined above in sub paragraph a to d. Proper statement has been established. No further

verification request. After re-approval the option (b) can be applied until crediting period end date of real case VPA.		assessment is required at this point.

The VT reviewed the provided of the safeguarding principles assessment and interviewed stakeholders to identify possible issues that could be mitigated by the PD. The Safeguarding principles assessed for this real case VPA are:

1. **Human Rights:** the project does not disrespect internationally proclaimed human rights or involved or complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights.

2. **Gender Equality and Women´s empowerment**: the project does not undermine the principles of non-discrimination, equal treatment, and equal pay for equal work, especially for women.

3. **Community health and safety**: the project does not involve potential risks to the health and safety of affected communities during its life cycle.

4. **Cultural heritage, indigenous people, displacement and resettlement**: the project is not involved in altering, damaging, or removing sites, objects, or structures of significant cultural heritage.

5. **Corruption**: the project is not involved, or is it complicit in, contributing to or reinforcing corruption or corrupt projects.

6. **Economic Impacts**: the project does not involve, facilitate, or condone forced labor, or pose a potential risk of forced labor. Furthermore, the project dos not violate the principles of equal opportunity and fair treatment in its employment decisions neither allow child labor.

7. **Climate and Energy**: the project does not have a risk of increasing greenhouse gas emissions over the Baseline Scenario and it does not pose a risk to the availability and reliability of energy supply to other users.

8. **Water**: the project does not result in the discharge of wastewater that does not meet the required standard for beneficial reuse and could therefore negatively impact the environmental flow. Furthermore, the project does not involve any processes or activities that could contaminate the groundwater and render it unsuitable for use.

9. **Environment, Ecology and Land use**: there is no risk of soil resource degradation or loss of ecosystem services provided by soils in the project. Moreover, the project does not

have a risk of releasing pollutants to air, water, and land in routine, non-routine, or accidental circumstances.

According to the VPA-DD, all the safeguarding principles were considered and assessed, none was identified as relevant, applicable or with a potential risk identified. Hence, no mitigation measures are added to the monitoring plan.

The PD has responded all questions of the nine safeguarding principles and provided enough evidence to confirm the response given in appendix 1. No discrepancies were found.

The documental analysis complemented with the interview of several stakeholders is an effective way to cross check information and identify possible discrepancies.

It can be concluded that no safeguarding principles are harmed or affected with the implementation of the project activity.

After proper correction and closure of CAR 03, the VT concludes that all applicability options selected for the real case VPA for safeguarding assessment for VPAs are in compliance with the GS Principles & Requirements/A-1/. Furthermore, the VPA-DD defines the inclusion criteria, applicability conditions and requirements including evidence and justifications provided for selected options, correctly for demonstration of compliance with the Safeguard principles & Requirements/A-8/ at regular VPa level.

Gender sensitive assessment

Regarding the gender sensitive assessment, according to the VPA-DD, the Local Stakeholder meeting that has been carried out for the project activity was done following a gender sensitive approach. Women were involved in the stakeholder consultation process, ensuring women could freely voice their opinion. The project includes measures to ensure no discrimination based on gender (neither other base) is taking place. The CME and Local Staff includes women, the CME makes attestation on Gender Sensitive as part of the VPA design and operation.

Furthermore, Rwanda has National Gender Policy 2010 with the goal to achieve gender equality and women's empowerment as an integral part of Rwanda's socio-economic development. The project will contribute towards the goal of policy by providing women opportunity access to safe drinking water. Therefore, the project very well aligns with the existing policies, strategies and best practices of host country Rwanda.

The VVB reviewed the relevant evidence/6, S/ where the gender sensitive aspects and interviewed stakeholders to identify possible issues that may not be addressed by the PD. The documental analysis complemented with the interview of several stakeholders is an effective way to cross check information and identify possible discrepancies. The VVB didn't identify issues regarding gender sensitive issues so the decision to not to get expert opinion is accepted.

It can be concluded that the proposed real case VPA has demonstrated compliance with the mandatory requirements as outlined in the Gender Equality Requirements & Guidelines/A-9/ and after proper correction and closure of CAR 03, it can be confirmed the proposed real case VPA describes the inclusion criteria for Gender Equality Requirements & Guidelines/A-9/ for its regular VPAs.

3.24 Local Stakeholder Consultation

According to paragraph 4.9 of the Programme of Activity Requirements and Procedures[/A-2/], the CME shall conduct the local Stakeholder Consultation at both the PoA level i.e., PoA Design Consultation and VPA equivalent level in accordance with Stakeholder Consultation and Engagement Requirements[/A-6/] which also states in paragraph 4.1, the CME shall conduct the stakeholder consultation at both, PoA and VPA level.

The PoA Design stakeholder consultation took place on 21/08/2023 and it has been evaluated directly in the PoA Validation Report. Please refer to it.

The VPA level consultation meeting was held physically on 23/06/2023. The stakeholder feedback round lasted two months, ending on 22/08/2023. No feedback was received during this period.

No GS document mentions that the PoA Design Consultation (stakeholder consultation at the PoA level) shall be conducted before the start date of the PoA to be a Regular PoA. Furthermore, the GS document Principles and Requirements does mention that the Stakeholder Consultation shall be conducted before the start date of the project (not programme) to be a considered regular otherwise, will be considered a retroactive project (not retroactive Programme).

According to the VPA-DD, the physical meeting was held in advance to the virtual meeting due to the nature of the project and the engagement of the project with the stakeholders. Stakeholders that were not able to attend the physical meeting had also the possibility to join in a later date the virtual meeting.

In the Stakeholder Consultation and Engagement Requirements[/A-6/], it is defined the requirements for VPAs level consultation at paragraph 4.9. Fulfilment of such requirements is presented in the table below:

Requirements	Assessment
For VPA level consultation, the CME shall conduct two rounds of consultation viz. a physical stakeholder consultation and a stakeholder feedback round. For VPA level consultation, the CME shall follow the requirements specified for project-level consultation under Section 3 requirements (para 4.9.0).	The VPA level consultation meeting was held physically on 23/06/2023. The stakeholder feedback round lasted two months, ending on 22/08/2023. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
A separate stakeholder consultation shall be organized for each real case VPA proposed to be included in the PoA (para 4.9.1).	This is the first real case VPA and its stakeholder consultation has been done on 23/06/2023. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
The CME shall submit the stakeholder consultation report for real case VPA at the time of first submission (i.e., Preliminary review of real case VPA) (para 4.9.2).	The Preliminary Review submission occurred 30/11/2023 which has included the stakeholder consultation report. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.

A single stakeholder consultation i.e., grouped stakeholder consultation may be organized for real case VPA and/or several regular VPA(s). The CME may conduct a grouped stakeholder consultation as long as the proposed VPAs: a) correspond to the same real case VPAs, and b) are to be implemented within the same host country, and c) are to be implemented within the geographical boundary, applicable to the group defined for a single consultation. The applicable geographical boundary is defined at the time of the first physical meeting of the specific grouped consultation, and d) are included in the PoA within two years of the first physical meeting conducted for grouped consultation (para 4.9.3).	This is the first real case VPA and its stakeholder consultation has been done on 23/06/2023 and no regular VPA has been requested to be included yet. Hence, grouped stakeholder consultation (for real case VPA and/or several regular VPA(s)) has not happened yet. Hence, this requirement is not applicable. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
When grouped stakeholder consultation is conducted, the CME shall: a) clearly describe the geographical boundary of grouped stakeholder consultation, and b) invite relevant stakeholders for a physical meeting(s) and stakeholder feedback round accordingly c) inform the stakeholders about the validity period of grouped stakeholder consultation (i.e., two years from the first physical meeting) and CME's implementation plan for the development of VPAs (para 4.9.4).	This is the first real case VPA and its stakeholder consultation has been done on 23/06/2023 and no regular VPA has been requested to be included yet. Hence, grouped stakeholder consultation (for real case VPA and/or several regular VPA(s)) has not happened yet. Hence, this requirement is not applicable. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
The CME shall submit the grouped Stakeholder Consultation Report with the inclusion request for the first regular VPA of the group (para 4.9.5).	This is the first real case VPA and its stakeholder consultation has been done on 23/06/2023 and no regular VPA has been requested to be included yet. Hence, grouped stakeholder consultation (for real case VPA and/or several regular VPA(s)) has not happened yet. Hence, this requirement is not applicable. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
For all corresponding VPAs that are included via grouped stakeholder consultation, the CME should during monitoring gather feedback from local stakeholders – primarily end-users and impacted stakeholder groups	This is the first real case VPA and its stakeholder consultation has been done on 23/06/2023 and no regular VPA has been requested to be included yet. Hence, grouped stakeholder consultation (for real case VPA and/or several

on the project implementation and its impacts, on a sample basis as part of the ongoing feedback mechanism (para 4.9.6).	regular VPA(s)) has not happened yet. Hence, this requirement is not applicable. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
The Gold Standard reserves the right to enforce new stakeholder consultation(s) for regular VPAs that are included via grouped stakeholder consultation, at the time of inclusion (para 4.9.7).	This is the first real case VPA and its stakeholder consultation has been done on 23/06/2023 and no regular VPA has been requested to be included yet. Hence, grouped stakeholder consultation (for real case VPA and/or several regular VPA(s)) has not happened yet. Hence, this requirement is not applicable. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
A grievance mechanism shall be established and made available for each VPA of a PoA (para 4.9.8).	A grievance mechanism has been included in section D of the stakeholder consultation report[6] and it has been made available during stakeholder consultation hold on 23/06/2023. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.

Information made available to stakeholders.

The preliminary agenda set by the CME has been provided to the attendees. Furthermore, a non-technical summary of the project, goals and objectives of the project, scale, duration, carbon credits ownership, implementation plan and SDGs contribution has been presented during the meeting. Furthermore, contacts details, summary of economic, social and environmental impacts of the project and other relevant information to help stakeholders to understand the project were also given.

Invitation made to stakeholders.

Acomplete database of people invited to the stakeholders meeting is provided here. This includes stakeholder type, name, gender, method of invitation, and date of invitation (always more than 30 days before the meeting). Furthermore, a clear justification of the appropriateness of invitation methods have been also described. Regarding gender sensitivity, 30% of the invitees and 40% of the attendees (excluding Virridy staff) for the local stakeholder consultation meeting were female. Moreover, samples of invitation were also included. The following stakeholders were invited:

a) School headmasters or headteachers;
b) Local government administration (District level);
c) Ministry of Education;
d) NGOs;
e) Universities;
f) Gold Standard, and
g) Several other organizations.

There is available an invitation tracking table in the Design Consultation Report/2/. It is stated in this table the stakeholder type, name of invitee, gender, method of invitation and date of invitation (which in all cases were 30 days before the meeting took place).

The signed attendance form was made available to the VT. Names, institution, position, gender, phone and signature were included from all participants who attended the meeting. A total number of 23 people attended the on-site meeting. Most of the participants were school head teachers, NGOs and district officials.

Report of the consultation process.

The stakeholder´s consultation report/5/ was provided which included specific data of the stakeholder's consultation process. The first submission date of the Stakeholder Consultation Report was 30/11/2023 when the Preliminary Review submission occurred.

All sections of the template have been fully addressed. Most important the list of participants has been included. This corresponds to the actual attendance records provided. Pictures of the meeting were also included. Furthermore, the minutes of the meetings were also considered here. All comments were considered and proper explanation and justification of each comment was included. Finally, a summary of all comments was provided.

Continuous input/grievance mechanism.

Information regarding the location of the grievance book, e-mail contact and telephone was provided to the stakeholders and this information is also included in the report. All data has been found as reliable and correct. Paragraph 3.8 of the Stakeholder Consultation and Engagement Requirements/A-6/ defines the requirements to be fulfilled regarding the continuously input and grievance mechanism, which is presented in the table below:

Requirements	Assessment
All projects shall set up a formal input & feedback, and grievance mechanism with the purpose of providing stakeholders with an opportunity to submit any feedback or record concerns/grievances during the entire project lifetime (para 4.8.1).	The formal input & feedback and grievance mechanism set by the CME is: - A grievance book which is located in the Virridy Office at KK 15 Road Silverback Mall, Third Floor, Unit Number SB1-313 - The GS Contact which is mandatory: help@goldstandard.org - Telephone number: +250 788 481 439 - E-mail: jean.ntazinda@virridy.com This has been informed during the stakeholder's consultation meeting and properly included in the Stakeholders Consultation Report/6/. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
The project developer shall discuss in the physical meeting potential options for ongoing feedback & input and grievance mechanism and agree on an appropriate	The formal input & feedback and grievance mechanism set by the CME has been provided and discussed in the physical meeting. This has been cross checked against the review of the Stakeholders Consultation Report/6/ and with

method (para 4.8.2).	interviews performed during on site visit. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
At a minimum, the Continuous Input and Grievance Expression Process book shall be made available at an agreed location. Refer to detailed guidelines available in the Stakeholder Consultation and Engagement Guidelines (para 4.8.3).	A grievance book has been made available and it is located in the Virridy Office at KK 15 Road Silverback Mall, Third Floor, Unit Number SB1-313. During on visit, the grievance book has been checked. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
The continuous input and grievance mechanism agreed with stakeholders shall be described in the Stakeholder Consultation Report (para 4.8.4).	The continuous input and grievance mechanism agreed with stakeholders has been included in the Stakeholders Consultation Report[/6/]. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
The project developer shall record all comments, inputs or concerns raised by the stakeholders using the agreed mode of continuous feedback or any other form (such as verbally, telephonically, via email and/or through representatives). The project developer shall send a written acknowledgement to the stakeholder, except if the comment is anonymous (para 4.8.5).	No comments, inputs or concerns raised by the stakeholders using the agreed mode of continuous feedback has been provided so far. The grievance book has been checked and interviews were done during on site visit. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
The project developer shall keep the stakeholder(s) informed of the measures taken in the context of the comment(s) raised (para 4.8.6).	No comments, inputs or concerns raised by the stakeholders using the agreed mode of continuous feedback has been provided so far. The grievance book has been checked and interviews were done during on site visit. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.

It can be concluded that the Continuous input/grievance mechanism fulfills the requirements set in paragraph 3.8 of the Stakeholder Consultation and Engagement Requirements[/A-6/].

Stakeholders feedback round.

The length of the feedback round started on 23/06/2023 and finished 22/08/2023. Virridy provided all stakeholders with the feedback form and grievance form that has the email of the person to be contacted following the local stakeholder consultation meeting. The feedback form was distributed by email to all invited stakeholders and in hard copy to all participants who attended the LSC meeting.

Evidence of invitations, PPT, agenda, attendance list and evaluation forms from the participants were checked. Furthermore, interviews were also done during on site assessment for cross check purposes. No discrepancies were provided with the information provided in the PoA-DD and the Stakeholders Consultation Report.

Paragraphs 3.6.9 to 3.6.13 of the Stakeholder Consultation and Engagement Requirements/A-6/ defines the requirements to be fulfilled regarding the continuously input and grievance mechanism, which is presented in the table below:

Requirements	Assessment
The project developer shall provide feedback to the stakeholders on how comments received in the physical meeting(s) have been considered and seek further comments from stakeholders (para 4.6.9).	No comments, inputs or concerns raised by the stakeholders were provided during the physical meeting. The Stakeholders Consultation Report/6/ was checked and interviews were done during on site visit by the VT for cross check purposes. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
All stakeholders invited to participate in the physical meeting(s) shall be invited to provide feedback during the stakeholder feedback round (para 4.6.10).	During physical meeting, all stakeholders were invited to provide feedback during the stakeholder feedback round. No comments, inputs or concerns raised by the stakeholders were provided during the feedback round. The Stakeholders Consultation Report/6/ was checked and interviews were done during on site visit by the VT for cross check purposes. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
The project developer shall share the updated project documentation with stakeholders for thirty days via publicly accessible means i.e., easily accessible online or other means for example publicly accessible website, online platform or others. It shall include details on procedure & contact details for submission of further comments (para 4.6.11).	As no comment were received during the physical meeting and the feedback round, there were no need to made available again the project documents. All project documents were shared to all invited stakeholders 30 days in advance to the meeting and again during the meeting. The Stakeholders Consultation Report/6/ was checked and interviews were done during on site visit by the VT for cross check purposes. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
At the end of the stakeholder feedback round, the project developer shall consolidate all the comments received	No comments were received during the feedback round. This has been mentioned in the Stakeholders Consultation Report/6/ and it has

during the feedback round (para 4.6.12).	been cross checked with interviews during on site visit. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.
The project developer may organise the Stakeholder Feedback Round in parallel to the validation process, however before concluding the validation opinion, the VVB shall take into account the feedback and how the comments were addressed and any potential revision in the project design and documentation (para 4.6.13).	The length of the feedback round started on 23/06/2023 and finished 22/08/2023 which was before the on-site visit for validation. No comments were received during the feedback round. The Stakeholders Consultation Report/6/ was checked and interviews were done during on site visit by the VT for cross check purposes. No errors, omissions, misstatements, or incomplete information have been identified. The requirement has been fulfilled.

It can be concluded that the Stakeholders feedback round fulfills the requirements set in paragraph 4.6.9 to 4.6.13 of the Stakeholder Consultation and Engagement Requirements/A-6/.

Conclusions.

It can be concluded:

a) The stakeholder consultation at the VPA level was carried out in accordance with the Stakeholder Consultation and Engagement Requirements/A-6/;

b) The real case VPA-DD correctly define the inclusion criteria, applicability conditions and requirements, among others, to demonstrate compliance with stakeholder consultation and engagement requirements at regular level of VPA;

c) There are not applicable rules in the host country in relation to conducting stakeholder consultation for relevant VPAs. This has been checked when review applicable laws and regulations/CC, DD, EE/. No discrepancies were identified.

d) The stakeholder consultation was conducted in accordance with the following requirements:

- Scope of Stakeholder Consultation.
- Timing of Stakeholder Consultation.
- Minimum group of stakeholders to be consulted.
- Means for inviting stakeholders (At least 30 days before the meeting).
- Information to be made available to stakeholders.
- Conduct of consultation.
- Continuous input and grievance mechanism.
- Consideration of comments received.
- Ongoing monitoring and reporting mechanism.
- Stakeholder Consultation documentation.

e) The stakeholder consultation comprised input from a minimum of two rounds of consultation, including a mandatory physical meeting and one round of stakeholder comments;

f) The stakeholder consultation has been conducted prior to the proposed VPA start date;

g) All the comments received during the stakeholder consultation and stakeholder feedback round were documented without tempering the spirit or intent of the comment;

h) All the concerns raised by stakeholders during the stakeholder consultation and stakeholder feedback round summarised together with the respective proposed mitigation measures and its monitoring when agreed;

i) It has been properly justified when stakeholder comments have not been incorporated or addressed;

j) No Safeguarding Principles and SDG Impacts Assessment required an opinion and recommendations of Expert Stakeholder(s);

k) The CME prepared the Stakeholder Consultation Report of the consultation process, including consultation feedback and how this was incorporated into the VPA design, and

l) The Stakeholder Consultation Report was submitted to Gold Standard as required.

3.25 Eligibility and inclusion criteria for VPAs inclusion

According to paragraph 5.12.1 of the Programme of Activity Requirements and Procedures[/A-2/], in the real case VPA DD, the CME shall define the eligibility criteria for inclusion of its regular VPAs in the PoA by setting out required conditions for a regular VPA to be included in the PoA.

The VPA-DD includes all minimum requirements as described in paragraph 5.12.2, 5.12.4, and after proper correction of CAR 03, paragraph 5.12.5 as well.

The selected eligibility criteria are as follow:

#	Eligibility criterion	Required condition	Description of the VPA in relation to the criteria, means of verification and supporting evidence for inclusion	VVB assessment
1	Location/ Geographic boundary of the VPA	All new project activities will install the project technology within the geographic boundary which is the Rwanda territory.	The schools included in this VPA are: School Name(s)/Separate list An Elementary/ Secondary school. The location of the schools included in this	The location and boundary in the specific VPA-DDs will be clearly specified and it will be confirmed that all parts of the VPA are within the geographical boundary of the host country included in the PoA.

			VPA are submitted separately. All the schools included are located within Rwanda territory. **Means of verification:** The date collected as means of verification includes: - School Name(s) - School type - GPS location coordinates - Location description (e.g. community, twon, district). - Satellite aerial image **Evidence for inclusion**: Installation record	The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[/A-2/]. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.
2	Project technology and target users	All new VPAs will install the project technology in educational institutions, mostly, primary and secondary schools. Other educational institutions such as high schools and Universities can also be included. All types of schools, including part-time, full-time, and boarding schools, as well as public, private and government-supported non-profit can be included.	The VPA includes the installation of 1,273 LifeStraw® Community. Date of installation from 26/06/2023 to 23/02/2024 The schools included in this VPA are: School Name(s)/Separate list **Means of verification**: There is a record for each school including the school name, location and unique ID, number of filters installed, a barcode for each filter, a picture of each filter and GPS location of each filter **Evidence for inclusion**: Schools installation database	The technology deployed includes one or more of the advanced water filtration technologies. The Project technology (IWT) will be determined by manufacturer specifications[/12/]. The target users are well defined. The project technology will be installed in educational institutions. The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[/A-2/]. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.

3	Methodology	All the new VPAs shall apply the Gold Standard methodology "Emission reductions from safe drinking water supply", version 1.0	The methodology applied is the "Emission reduction from safe drinking water supply", version 1.0. See details in section B.2 of this VPA-DD **Means of verification:** The CME supervise that procedure required by the applied methodology are followed. The VPA clear states the methodology and version applied. **Evidence for inclusion**: N/A	The applied methodology is applicable for the proposed PoA and VPAs. The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[/A-2/]. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.
4	Double counting	(i) All the project technologies installed in new VPAs will have a unique identification that ensures traceability that prevents any double counting. (ii) The VPA is exclusively included in this PoA. The VPA shall not be proposed as part of another programme or offset program i.e., as an individual Gold Standard or CDM project and/or as part of any other CDM PoA and/or any other mechanism that includes climate change mitigation impacts/benefits. The VPA-DDs will include a statement from the CME that the specific VPA will not be part of another Gold Standard or CDM project activity or VPA under another PoA.	(i) Unique ID numbers assigned to the water systems installed are submitted to the VVB on a separate basis. (ii) The CME confirms this specific VPA is not part of an ETS, has not participated in any other GHG program, and has not been rejected by other GHG program. VVB to cross-check and verify no offset mechanisms like UNFCCC-CDM, VERRA, Gold Standard includes these schools and locations. **Means of verification:** unique ID numbers of schools and barcode for each filter **Evidence for inclusion:** list of similar project implemented in the same geographic are including GS, VCS, CGG and CDM.	Proper measures are considered to avoid double counting such as unique identification of water filters and review of offsets program. The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[/A-2/]. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.
5	Legal ownership	Carbon rights waivers will be signed by schools	Carbon waivers signed by the schools to be	Proper means of documents will be signed to avoid problems with

		and other entities involved in the project to ensure there is no dispute over the certified emission reductions, and to demonstrate the legal ownership of the emission reductions lies with the CME.	submitted to the VVB on a separate basis. **Means of verification**: Carbon waivers signed by Schools and technology suppliers. **Evidence for inclusion:** MoU signed by the schools.	the legal ownership of the carbon credits. The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures/A-2/. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.
6	Project technology	All VPAs will include the installation of LifeStraw® Community (including a LifeStraw® Ultrafiltration Membrane) OR Amazi filters. These meet the drinking water standard required by the methodology and the host country.	This VPA installed 1,273 LifeStraw® Community Equipment specifications can be found in the following link: https://lifestraw.com/products/lifestraw-community. The LifeStraw® Community has an expected lifetime of 6 years considering periodic replacement of the Ultrafiltration Membrane, which has a lifetime filtration capacity of 70,000 – 100,000 liters, and can be replaced, **Means of verification**: Equipment specifications **Evidence for inclusion:** Equipment specifications can be found in the following link: https://lifestraw.com/products/lifestraw-community	The technology deployed includes one or more of the advanced water filtration technologies. The Project technology (IWT) will be determined by manufacturer specifications/12/. The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures/A-2/. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.
7	Additionality	All VPAs to be included under the PoA will be in compliance with item	The CME confirms that the VPA result in <=	The applied methodology is applied for the demonstration of additionality at the VPA level.

		1.1.3 of Annex B – positive list mentioned in the "Community Services Activity Requirements", version 1.2. All VPAs will be solely composed of isolated units where the users of the technology/ measure are households or communities or institutions and where each unit results in <= a. 600 MWh of thermal energy savings per year for ICS. b. 600 tCO2 per year for HWT and IWT technologies.	a. 600 MWh of thermal energy savings per year or b. 600 tCO_2e emission reductions per year See ERs spreadsheet. **Means of verification:** The VPA-DD shall confirm that the thermal energy savings per year at a unit level (i.e., per water purification system) are below 600 tCO_2 per year per unit. This is to be outlined in the ER calculation sheet. **Evidence for inclusion:** See ERs spreadsheet.	The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[A-2]. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.
8	Start date	All the project technologies are installed from June 26th, 2023, onwards.	The VPA includes the installation of 1,273 LifeStraw® Community Date of installation from 26/06/2023 to 23/02/2024 **Means of verification:** The date of installation will be recorded as part of the project database. **Evidence for inclusion:** The installation record of the first schools	The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[A-2]. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.
9	Eligibility criteria for schools to join a VPA	In order to make the project feasible, there are minimum elements to be confirmed at the schools to join the VPA. i. Primary or secondary school of at least 200 students in Rwanda. ii. Presently on a water supply (piped utility or	Each school's eligibility criteria to be submitted to the VVB on a separate basis. The following elements are confirmed for each school joining the VPA: - Number of students and staff - Result of the water test	The project is implementing institutional water treatment technologies (IWT) in public schools (half or full day/boarding). The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding

		self-supply) that tests positive for non-zero e-coli CFUs / 100 ml using the compartment bag test. iii. Has at least one location, but no more than ten, where students and staff collect water for drinking. iv. School will manage site-preparation and incur associated costs. This includes identifying a protected location to install the water purification system. v. The common practice of water treatment is or would have been using firewood or fossil fuels to boil at least some drinking water in the baseline. vi. Have school staff that commit to work with Virridy for the water systems installation, operation, and maintenance. vii. Agree to be bound to the terms of Virridy/ District Government MOU that stipulate that Virridy will provide the water treatment technology, replacement supplies, water quality testing, and training, in exchange for assignment of all carbon credit rights. viii. The school expects to be in operation indefinitely notwithstanding unforeseen	– Locations where students and staff collect water for drinking. – Location(s) to install the water filter(s) – Use firewood or fossil fuels to boil at least some drinking water in the baseline – School committed (Yes/No) – MoU signed – No presence of water filters **Means of verification**: School eligibility checklist along with respective supporting documents. **Evidence for inclusion**: N/A	regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures[A-2]. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.

		circumstances. The school has not received LifeStraw® filters or other water quality interventions in the last 3 years.		
10	Meet the small-scale and remain within those thresholds throughout the crediting period	The CME will ensure that the emission reductions of each VPA are within <60k tCO2e/year limit. In case the threshold is breached the CME will not claim the ERs above the threshold limit.	The VPA is below the small-scale threshold. The annual average ERs are: 20,663 tCO_2e. See ERs spreadsheet/7/ **Means of verification**: The CME confirms the scale of the VPA, that it will remain within the threshold limits, and forego the ERs if it surpasses the threshold. **Evidence for inclusion**: Evidence for inclusion: See ERs spreadsheet/7/.	The criterion is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding VPAs in the PoA. The eligibility criterion for inclusion of corresponding regular VPAs in the proposed GS PoA are defined in accordance with paragraph 5.12 of the Activity Requirements and Procedures/A-2/. Furthermore, the means of verification are considered plausible in the context of implementation of the regular VPA. No discrepancies were identified.
11	On site visit	the CME shall provide details of the approach chosen for site-visits in view of the inclusion of future regular VPAs in the real case VPA DD	The approach proposed by the CME for site visit in the light of inclusion of further regular VPAs consist in having a site visit every 5 VPAs. This approach is deemed reasonable considering it represent a site visit of 20% of the VPAs to be included. **Means of verification**: Review of VPA inclusions to be sure when the 5th will be included. **Evidence for inclusion**: N/A	The selected approach for site visits in view of the inclusion of future regular VPAs is considered appropriate by the VT as if we consider the site visit and remote audit requirements and procedures, section 3.2, a physical site visit by VVB is not mandatory at the validation (Design Certification or Design Certification Renewal) of a project. This applies for PoA and VPA as well as per paragraph 3.2.3. Hence, it is considered indeed adequate to perform on site visits in every 5 VPAs.

The VT concludes that the real case VPA-DD has defined the eligibility criteria and required conditions for inclusion of its regular VPAs in the PoA in accordance to the requirements of Programme of Activity Requirements and Procedures/A-2/. The VT has assessed how each eligibility criterion, including the conditions that corresponding regular VPAs meet the requirement in accordance with the applicable requirements in the Programme of Activity Requirements and Procedures/A-2/ and it is verifiable as well as sufficiently objective and comprehensive to permit the assessment of the inclusion of corresponding regular VPAs in the PoA. Furthermore, the VT has also assess and found plausible the approach chosen for site-visits in view of the inclusion of

future regular VPAs in the real case VPA-DD.

4. REFERENCE

4.1 List of evidence provided by the CME during validation:

No	Author	Title	References to the document	Provider
1	CME	Key Project Information & Program Design Document (PoA-DD)	V1.6, 14/11/2024	CME
4	CME	Key Project Information & VPA Design Document (VPA-DD)	v1.1, 28/03/2024	CME
			v1.3, 26/04/2024	
			v1.3, 11/06/2024	
			V1.4, 08/07/2024	
			V1.5, 20/11/2024	
5	CME	(VPA) Stakeholders Consultation Report	V1, 30/11/2023	CME
6	CME	**Stakeholder Consultation Report evidence and annexes:** • "6.1_GS12240_Annex 1_Scanned_LSC Attendance Form.pdf" • "6.2_GS12240_Annex 2_Scanned_LSC Evaluation Forms.pdf" • "6.3_GS12240_Annex 3_Transcribed_Evaluation Forms.pdf"		CME
7	CME	**Ex-ante ER sheet:** "7_Virridy Forecast Ex-Ante ERs v3.3 07 Jun 24 VPA1"	V3.3, 07/06/2024	CME
8	CME	**fNRB Calculation:** "8_fNRB Calculation v1.1"	-	CME
9	CME	SDG Impact Methodological Tool	29/03/2024	CME
10	CME	**Baseline survey template questions:** "10_Baseline Survey Questions.pdf"	-	CME
11	CME	**Baseline survey results:** "11_Baseline Survey Results.xls"	-	CME

12	LifeStraw	**Filter(s) technical specifications:** • "12.1_LifeStraw_Community_-_Filtration_Performance_Sheet.pdf" • "12.2_LifeStraw_Community_User_manual.pdf" • "12.3_LifestrawCommunity-EvidenceDossier-1544004763279.pdf"	-	CME
13	Republic of Rwanda	**Rural Drinking Water Quality Management Framework:** "13_Rwanda Standard, East African Standard, Potable Water Specification, EAS 12- 2014.pdf" And its Appendix 1: Rwanda Standard (RS EAS 12:2014), Potable water – Specification (RSB 2014)	Edition 1.0, May 2019 https://www.mininfra.gov.rw/fileadmin/user_upload/Mininfra/Documents/Water_and_Sanitation_docs/2_Rural_Drinking_Water_Quality_Framework.pdf	CME
14	CME	**Official Development Assistance (ODA) declaration form:** "14_GS12240_ODA-Declaration-Form.pdf"	30/11/2023	CME
15	CME	**Preliminary Review Form:** "15_GS12239_GS12240_T-PreReview_V2.0-Preliminary-review-request-form.doc"	-	CME
16	CME	**Samples of Carbon Waivers:** "16_Samples of Carbon Waivers.pdf"	-	CME
17	CME	MoUs signed with (legal ownership): • Districts • Schools • Technology supplier "17_District MOUs.pdf"	-	CME
20	CME	**Monitoring survey template questions**: "20_Monitoring Survey Questions.pdf"	-	CME

21	CME	**Monitoring survey results including SDGs monitoring results:** "21_Monitoring Survey Results.xls"	-	CME
22	WHO	**Water quality tests technical specifications:** "22_Water Quality Test Technical Specifications.pdf"	-	CME
23	CME	**Sample selection of the schools selected to perform the water quality tests:** "23_Amazi Meza Rwanda_Installs_23 Feb 2024 Stratified Random Selection.xls"	23/02/2024	CME
24	CME	**Water quality test results:** "24_Water Quality Test Results.pdf"	-	CME
25	Aquagenx	**Water quality test interpretation guidance:** "25_Water Quality Test Interpretation Guidance.pdf"	-	CME
26	CME	**Evidence of the "Number of permanent jobs" created by the project:** "26_Evidence of Permanent Jobs.pdf"	-	CME
27	CME	**Evidence of the "Hygiene campaigns":** "27_Evidence of Hygiene Campaigns.pdf"	-	CME
28	CME	**Evidence of the training activities to school staff on the use and maintenance of the water purification system:** "28_Evidence of Training Activities.pdf"	-	CME

29	CME	**Record of grievances/comments received:** "29_Record of Grievances and Comments Received.pdf"	-	CME
30	CME	**Samples of Staff contracts:** "30_Samples of Staff Contracts.pdf"	-	CME
31	CME	**Filter installation database:** "31_Filter Installation Database.xls"	-	CME
32	Aquagenx	Product documents and resources	https://www.aquagenx.com/product-documentation/	CME
33	CME	Report of annual hygiene campaigns results, v1.0	-	CME
34	Ministry of Education, Republic of Rwanda	Head-master data on actual student population, teachers and supporting staff which is communicated to the Government as official source of number of students.	-	CME
35	RSB	Test Report by RSB "RSB_Filtered_water_LSC"	08/03/2023	CME

4.2 List of references

No	Author	Title	References to the document	Provider
A	GS	GS4GG document requirements: 1. Principles and Requirements v1.2 2. Programme of Activity Requirements and Procedures, v2.1 3. Community Services Activity requirements, v1.2 4. GHG Emissions Reduction & Sequestration Product Requirements, v2.3 5. Validation and Verification Standard, v1.0 6. Stakeholder Consultation and Engagement Requirements, v2.1	https://globalgoals.goldstandard.org/all-documents/	Publicly available

		7. Rule update: Application of suppressed demand, project type and applicable scale threshold (RU 2020 PR-GHG V1.2), 13/08/2020 8. Safeguard principles & Requirements, V2.1, 29/06/2023. 9. Gender Equality Requirements & Guidelines, v2.0, 16/05/2023. 10. Site visit and remote audit requirements and procedures, v2.0, 30/05/2023.		
B	GS	Methodology for emission reductions from safe drinking water supply, v1.0	https://globalgoals.goldstandard.org/400-sdg-impact-quantification/	Publicly available
C	GS	Templates: 1. Key Project Infrmation & Programme Design Documenty (PoA-DD), v2.2 2. Stakeholder Consultation Report, v2.0 3. PoA – Design Consultation Report, v2.0 4. SDG Impact Methodological Tool, v1.3 5. Official Development Assistance Declaration Form, v2.0 6. Key Project Information & VPA Design Document (VPA DD), v2.3		
D	UNFCCC	CDM documents used: 1. Standard: Sampling and surveys for CDM project activities and programmes of activities, v9.0 2. Guidance: Sampling and surveys for CDM project activities and programmes of activities, v4.0 3. CDM Methodological Tool 30 "Calculation of the fraction of non-renewable biomass" version 4.0	https://cdm.unfccc.int/Reference/index.html	Publicly available
E	The Global Goals	The Global Goals	https://www.globalgoals.org/	Publicly available

F	UNICEF	Safely managed drinking water, thematic report on drinking water 2017	https://washdata.org/sites/default/files/documents/reports/2017-07/JMP-2017-tr-smdw.pdf	Publicly available
G	UN	Universal declaration of Human Rights	https://www.un.org/en/about-us/universal-declaration-of-human-rights	Publicly available
H	WHO	Guidelines for drinking-water quality, 4th edition, incorporating the 1st addendum	https://www.who.int/publications/i/item/9789241549950	Publicly available
I	LifeStraw	LifeStraw web site	https://eu.lifestraw.com/?regionChanged	Publicly available
J	MECS	Policy and market review for modern energy cooking in Rwanda, 07/10/2021.	https://mecs.org.uk/publications/policy-and-market-review-for-modern-energy-cooking-in-rwanda/	Publicly available
K	WHO	Progress on household drinking water, sanitation and hygiene, 2000-2020: Five years into the SDGs, 01/07/2021.	https://data.unicef.org/resources/progress-on-household-drinking-water-sanitation-and-hygiene-2000-2020/	Publicly available
L	GS	Impact Registry web site - AMAZI MEZA RWANDA WATER SUPPLY PROJECT FOR SCHOOLS - POA	https://registry.goldstandard.org/projects/details/4382	Publicly available
M	GS	Impact Registry web site - GS 12239 VPA-1 AMAZI MEZA RWANDA WATER SUPPLY PROJECT FOR SCHOOLS	https://registry.goldstandard.org/projects/details/4383	Publicly available
N	WHO	Boil water	https://iris.who.int/handle/10665/155821	Publicly available
O	UNFCCC	Fraction of Non-Renewable Biomass	https://cdm.unfccc.int/DNA/fNRB/index.html	Publicly available

P	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories. Chapter 1: Introduction.	https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf	Publicly available
Q	WHO	Core Questions for monitoring water, sanitation and hygiene at home, schools and health centres	https://washdata.org/monitoring/methods/core-questions	Publicly available
R	MINEDUC, Republic of Rwanda	MINEDUC School Calendar	https://www.mineduc.gov.rw/index.php?eID=dumpFile&t=f&f=26973&token=25e04b17718bfdf251599175b5922b44e68478a6	Publicly available
S	Ministry of Gender and Family Promotion, Republic of Rwanda	Revised National Gender Policy, February 2021.	https://www.migeprof.gov.rw/fileadmin/user_upload/Migeprof/Publications/Guidelines/Revised_National_Gender_Policy-2021.pdf	
Z	Several	Evidence of calculation of the fNRB: a) Global Forest Resources Assessment 2000 by the FAO for "Distribution of total forest area by ecological zone" (Table 14) - Rwanda; https://www.fao.org/3/y1997e/y1997e21.htm b) 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories - Table TABLE 4.9 (UPDATED) ABOVE-GROUND NET BIOMASS GROWTH IN NATURAL FORESTS; https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch04_Forest%20Land.pdf c) FAO, FRA2020 Office study Rwanda. Basic data. Table. The above assumptions and estimates gives the following estimated time series;	-	Publicly available

		https://www.fao.org/3/ca9878fr/ca9878fr.pdf d) FAO, FRA2020 Office study Rwanda. 3b Forest area within legally constituted protected areas and forest area subject to long-term e) AFRICAN ENERGY COMMISSION. Detailed Energy Balances for Rwanda 2021. https://au-afrec.org/data-statistics-energy-balances f) IPCC (2006) "IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 1, Introduction, Table 1.2, p 1.19 g) FAO Forestry Production and Trade, Country: Rwanda, Elements: Production Quantity, Items: All but Woodfuel and Wood charcoal, Years: 2022 (Imputed values); https://www.fao.org/faostat/en/#data/FO h) Wood Density Air-Dry WD ad https://www.fao.org/3/a1106e/a1106e00.htm		
AA		GHG Program project search:		Publicly available
	UNFCCC	UNFCCC	https://cdm.unfccc.int/Projects/projsearch.html	
	VERRA	VERRA	https://registry.verra.org/app/search/VCS/All%20Projects	
	GS4GG	GS4GG	https://registry.goldstandard.org/projects?q=&page=1	
	CAR	CAR	https://thereserve2.apx.com/mymodule/mypage.asp?logoff=yes	
	GCC	GCC	https://projects.globalcarboncouncil.com/	

BB	Ministry of Infrastructure of Rwanda	National Water and Sanitation Policy, October 2023.	https://www.mininfra.gov.rw/index.php?eID=dumpFile&t=f&f=93300&token=b5e6a9432df6bd9c46f607218d70699909842d20	Publicly available
CC	Rwanda Water Resources Board	Water Law No. 62/2008	https://www.rwb.rw/fileadmin/user_upload/RWRB/Documents/Water_law_gazetted.pdf	Publicly available
DD	Ministry of Infrastructure of Rwanda	National Guidelines for Sustainable Rural Water Supply Services (2019)	https://www.mininfra.gov.rw/fileadmin/user_upload/Mininfra/Documents/Water_and_Sanitation_docs/1_National_Guidelines_for_Sustainable_RWSS.pdf	Publicly available

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

5. FINAL PROJECT DESIGN CERTIFICATION STATEMENT

LGAI Technological Center, S.A. (hereafter referred to as Applus+ Certification) has been contracted by Virridy Carbon LLC to perform the GS VER validation of the VPA GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools which is part of the PoA titled "Amazi Meza Rwanda Water Supply Project for Schools - PoA" (GS ID-12239) applying the methodology for emission reductions from safe drinking water supply (v1.0).

The purpose of the VPA is to distribute, install, and service low greenhouse gases (GHG) emitting water purification systems at point-of-collection (POC) to provide safe drinking water (SDW) for institutional application at schools. The goal of the PoA is to addresses the lack of safe drinking water in certain schools in Rwanda and the resulting negative impacts on students' health and learning.

The CME of the VPA is Virridy Carbon LLC, which is the sole entity having rights to claim carbon credits from this VPA.

The scope of the validation is defined as an independent and objective review of the project design document, the VPA baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against the GS4GG Principle & Requirements, version 1.2.

Applus applied the following validation process and methodology using a competent validation team.

- The desk review of documents and evidence submitted by the CME in context of the reference GS rules and guidelines issued by the GS secretariat,
- Undertaking/conducting on-site visit, interview, or interactions with the representative of the project CME,
- Reporting audit findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate and
- Preparing a draft validation opinion based on the auditing findings and conclusions.

The review of the VPA-DD, supporting documentation and subsequent follow-up actions have provided sufficient evidence to determine the fulfilment of stated criteria. The proposed VPA is meeting all the requirements of the GS4GG standards.

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

Date: 15/12/2024

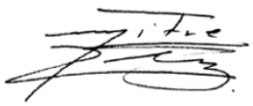
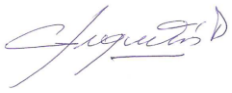
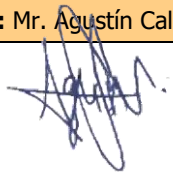
Lead Auditor & Technical Expert: Mr. Raul Gonzalez Mitre, PhD

Local Support: Mr. Munguakonkwa Taka Hubert

Tech. Reviewer: Miguel A. Cortés Díaz

Approver *(Applus+ Certification VVB Technical Manager)*

Mr. Agustín Calle de Miguel

ASSESSMENT TEAM	
Lead Auditor: Mr. Raul Gonzalez Mitre, PhD	**Technical Reviewer:** Mr. Miguel A. Cortés Díaz
Signature: 	Signature: 
Approver: Mr. Agustín Calle de Miguel	
Signature: 	

Appendix 1: Corrective Action Request/Clarification Request/Forward Action Request resolution table

Table 1. Remaining FAR from Preliminary Review or PoA validation

FARs raised during preliminary review has been address at the PoA Level as well. For transparency and practical purposes, those FARs are included here as well.

FAR ID	01	**Section no.**		**Date :** 18/12/2023
Description of FAR				
VVB shall check and assess the legal ownership of the PoA and the implemented VPAs				
Project developer response				**Date :**
Not applicable				
Documentation provided by project developer				
Districts, schools and technology supplier MoU				
DOE assessment				**Date :** 15/04/2024
Proof of ownership has been provided by the PP. It is: MoUs signed with a) All Districts[17]: Kamonyi, Gakenke, Musanze and Muhanga b) Schools[16] c) MoU Technology supplier[17] All documents were checked. It is clearly described that the ownership of carbon credits will be Virridy. No discrepancies were identified. **FAR is closed.**				

FAR ID	02	**Section no.**		**Date :** 18/12/2023
Description of FAR				
VVB shall assess whether any suppressed demand scenario and also the confirmation of baseline scenario.				
Project developer response				**Date :**
Not applicable				
Documentation provided by project developer				
• Key Project Information & Program Design Document (PoA-DD) • Key Project Information & VPA Design Document (VPA-DD) • Monitoring Report				
DOE assessment				**Date :** 15/04/2024

For users that boil unsafe water for drinking in the pre-project scenario, the general baseline scenario is that users would have boiled water for drinking in the absence of the project activity.

According to the VPA-DD the target population is schools that use either three stone fired wood stove, traditional biomass cookstove, or other kind of stoves. Hence, the baseline scenario has been correctly described as per the applied methodology.

Furthermore, as per paragraph 3.4.2 of the applied methodology:

For household end-users currently drinking unsafe water, the principles of suppressed demand are applied, such that the general baseline scenario is assumed to be that users would have boiled water for drinking in the absence of the project activity. The suppressed demand baseline does not apply to a large-scale project. A large-scale project can only account the users that boil water in the pre-project scenario. The suppressed demand baseline may be applied for institutional end-users, except where the institution is connected to a public distribution network (PDN) that supplies safe drinking water - unless justified that supplied water quality doesn't meet safe water definition (parameter SDWS 12).

According to the VPA-DD, for the cases of end-users currently drinking unsafe water (because e.g., energy poverty barriers) result in less than the minimum required amount of safe drinking water, the principles of suppressed demand are applied and the baseline is set as a proxy technology (water boiling of an adequate quantity of drinking water) based on the standard of living achieved by peers (adequate supply of safe drinking water).

Scenarios of suppressed demand has been considered. There are two suppressed scenarios considered by the PD:

- Less consumption that recommended due to availability;
- No boiling water due to constrains on fuel availability or costs.

For this purpose, default values have been considered following the methodology. No discrepancies were identified. This is also aligned with the rule update from GS regarding Application of suppressed demand, project type and applicable scale threshold (RU 2020 PR-GHG V1.2). No discrepancies were identified.

FAR is closed.

FAR ID	03	**Section no.**		**Date :** 18/12/2023
Description of FAR				
VVB shall check the user agreements with all partner organizations and implementers.				
Project developer response				**Date :**
Not applicable				
Documentation provided by project developer				
MoUs with Districts, schools and technology supplier.				
DOE assessment				**Date :** 15/04/2024

There is no partner organizations nor implementers.

There is only two organization involved in the implementation of the PoA:

- Virridy Carbon LLC
- Virridy Rwanda LTD

The other organizations involved in the PoA are:

- All Districts where the schools are located;
- Schools where the water filters will be installed;
- Supplier of the technology.

For these three last organizations, MoU were provided and checked. No discrepancies were identified.

FAR is closed.

FAR ID	04	**Section no.**		**Date :** 18/12/2023
Description of FAR				
VVB shall assess the assumptions and the calculations for fNRB value				
Project developer response				**Date :**
Not applicable				
Documentation provided by project developer				
fNRB Calculation: "8_fNRB Calculation.xls"				
DOE assessment				**Date :** 15/04/2024

The fNRB Calculation[8] has been checked. The CDM Methodological Tool 30 "Calculation of the fraction of non-renewable biomass" version 3.0 has been applied. All formulae described in the tool have been used. Each formula of the calculation was cross checked against the tool. No discrepancies were identified. All sources and parameters were clearly indicated by the PD in the calculation. The sources provided are:

2. Global Forest Resources Assessment 2000 by the FAO for "Distribution of total forest area by ecological zone" (Table 14) - Rwanda; https://www.fao.org/3/y1997e/y1997e21.htm
3. 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories - Table TABLE 4.9 (UPDATED) ABOVE-GROUND NET BIOMASS GROWTH IN NATURAL FORESTS; https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch04_Forest%20Land.pdf
4. FAO, FRA2020 Office study Rwanda. Basic data. Table. The above assumptions and estimates gives the following estimated time series; https://www.fao.org/3/ca9878fr/ca9878fr.pdf
5. FAO, FRA2020 Office study Rwanda. 3b Forest area within legally constituted protected areas and forest area subject to long-term
6. AFRICAN ENERGY COMMISSION. Detailed Energy Balances for Rwanda 2021. https://au-afrec.org/data-statistics-energy-balances
7. IPCC (2006) "IPCC Guidelines for National Greenhouse Gas Inventories", Volume 2, Energy, Chapter 1, Introduction, Table 1.2, p 1.19
8. FAO Forestry Production and Trade, Country: Rwanda, Elements: Production Quantity, Items: All but Woodfuel and Wood charcoal, Years: 2022 (Imputed values); https://www.fao.org/faostat/en/#data/FO
9. Wood Density Air-Dry WD ad https://www.fao.org/3/a1106e/a1106e00.htm

All sources were checked directly from the origin. No discrepancies were identified. No errors, miscalculations, omissions, misstatements, or incomplete information have been identified.

After review the quantification methods used for the determination of the baseline and project emissions, the VT confirms that:

p) All assumptions and data used by the PD are clearly referenced in the fNRB calculation, including any reference and source;

q) All documentation used by the PD as the basis for their assumptions and source of data is correctly quoted and interpreted in the fNRB calculation

r) The calculations of fNRB have been carried out in accordance with the formulae and methods described in the applied tool;

s) The most conservative values approach has been applied to the parameters in accordance with the provisions of the applied tool;

t) Any assumptions, GWPs, emission factors, default values and other reference used in the fNRB calculation are considered reasonable in the context of the PoA/VPA and have been correctly applied and properly justified;

u) All data included in the calculation spread sheet was complete and correctly applied;

FAR is closed.

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

FAR ID	05	**Section no.**		**Date :** 18/12/2023
Description of FAR				
VVB shall assess the additionality threshold demonstration of the water filter units installed across the VPA				
Project developer response				**Date :**
Not applicable				
Documentation provided by project developer				
• PoA-DD • VPA-DD				
DOE assessment				**Date :** 15/04/2024

According to the paragraph 4.5 of the Programme of Activity Requirements and Procedures[/A-2/], the CME shall demonstrate additionality at PoA level by establishing that in the absence of Gold Standard Certification related finance:

a) the proposed VPAs would not be implemented, or

b) the mandatory policy/regulation would systematically not be enforced and that noncompliance with those requirements is widespread in the country/region, or

c) the PoA will lead to a greater level of enforcement of the existing mandatory policy/regulation or to a greater level of adoption of an existing voluntary scheme.

Furthermore, according to paragraph 3.3.1 of the applied methodology[/B/], the project developer shall demonstrate that the project could not or would not take place without carbon finance. Possible reasons for the need for carbon finance may be that the initial investment or the on-going marketing, distribution, quality control, manufacturing and maintenance costs are unaffordable for the target population.

According to the PoA-DD, the proposed project activity is a voluntary action coordinated by Virridy. There are no mandatory laws or specific requirements[/13/] in Rwanda to foster the installation of water filtration technologies. In the absence of the project, the common practice treatment method (e.g. boiling) or consumption of untreated water would be taken as the business-as-usual scenario in the selected schools. This has been confirmed through on-site visit and interviews performed. No discrepancies were identified.

The provision of water treatment is not financially viable in the context of implementation of the proposed PoA, which makes it not financially attractive and makes the carbon revenues crucial for the implementation and operation of the VPAs.

Furthermore, according to requirement 4.1.9 of the Community Services Activity requirements[/A-3/], projects that meet any of the following criteria are considered as deemed additional and therefore are not required to prove Financial Additionality at the time of Design Certification:

d) Positive list (Annex B);
e) Projects located in LDC, SIDS, LLDC
f) Microscale projects.

According to Annex B (Positive List) of the Community Services Activity requirements[/A-3/], the positive list for community services projects consists of the following types:

1.1.3 Project activities solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year or <= 600 tonnes of emission reductions per year.

The project is implementing institutional water treatment technologies in public schools (IWT). The technology deployed includes one or more of the advanced water filtration technologies as described in section 3.3. Moreover, the PoA-DD has calculated the ER per filter installed showing 131 tCO_2e in part-time schools and 249 tCO_2e in full time schools. Hence, the PoA fulfils requirement 1.1.3 of the positive list of the Community Services Activity requirements[/A-

[3/] as it is an isolated unit where the users of the technology is institutions (e.g. Schools in Rwanda) and where each unit results in <= 600 tonnes of emission reductions per year.

Additionality for VPAs is established following what is stated in paragraph 1.1.3 of Annex B (Positive List) of "Community Services Activity Requirements" version 1.2. All VPAs will be solely composed of isolated units (Water Purification System) where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 tCO_2 per year. Hence, the proposed PoA is indeed additional and therefore it is not required to prove additionality at the time of Design Certification.

FAR is closed.

FAR ID	06	**Section no.**		**Date :** 18/12/2023
Description of FAR				
VVB shall assess the correctness of the default values, assumptions used in the calculations in the VPA				
Project developer response				**Date :**
Not applicable				
Documentation provided by project developer				
• VPA-DD • MR				
DOE assessment				**Date :** 15/04/2024
The PD has followed all equations and options given by the applied methodology. Any assumptions, GWPs, emission factors, default values and other reference used in baseline, project and leakage emission calculations are considered reasonable in the context of the VPA and have been correctly applied and properly justified. All default values have been correctly applied in the ex-ante calculation stated in the VPA-DD and the ex-post calculation in the MR. Assessment has been done directly in the Validation Report of the real case VPA and the Verification Report of the real case VPA. No errors, miscalculations, omissions, misstatements, or incomplete information have been identified. It can be concluded that all default values and any assumption have been correctly justified. **FAR is closed.**				

FAR ID	07	**Section no.**		**Date :** 18/12/2023
Description of FAR				

List the FARs raised for Project Developer/CME: FAR 1.CME shall provide the details of water purification systems with technical specifications to be used in the PoA. FAR 2. The project area boundary and scale shall be clearly defined by CME. FAR 3. CME shall explain the criteria for identifying schools in the VPA. FAR 4. CME shall explain and provide the details of baseline surveys, water quality tests and hygiene camps conducted to the validating VVB.	
Project developer response	**Date :**
FAR 1.CME shall provide the details of water purification systems with technical specifications to be used in the PoA. These are available in the PoA-DD Sections: • "A.3. Technologies/measures". *FAR 2. The project area boundary and scale shall be clearly defined by CME.* The area boundary is available in the PoA-DD Sections: • "A.2. Physical/ Geographical boundary of the PoA"; and, • "B.3. Eligibility criteria for inclusion of a VPA in the PoA", row "Location/Geographic boundary of the VPA". Scale is available in the PoA-DD Sections: • "Key Project Information"; and, • "B.3. Eligibility criteria for inclusion of a VPA in the PoA", row "Meet the small-scale and remain within those thresholds throughout the crediting period". *FAR 3. CME shall explain the criteria for identifying schools in the VPA.* These are available in the PoA-DD Section "B.3. Eligibility criteria for inclusion of a VPA in the PoA", row "Eligibility criteria for schools to join a VPA". *FAR 4. CME shall explain and provide the details of baseline surveys, water quality tests and hygiene camps conducted to the validating VVB.* Details are described and available throughout the VPA-DD Real Case "GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools". The PD provided supporting evidence to the VVB (also shared with SustainCERT), i.e. 10_Baseline Survey Questions, 11_Baseline Survey Results, 22_Water Quality Test Technical Specifications, 27_Evidence of Hygiene Campaigns.	
Documentation provided by project developer	
PoA-DD, VPA-DD	
DOE assessment	**Date :** 15/12/2024

List the FARs raised for Project Developer/CME:

1. **FAR 1.CME shall provide the details of water purification systems with technical specifications to be used in the PoA**: details of water purification systems with technical specifications were provided to the VVB by the PD (Project Developer) and those are included in section "*A.3. Technologies/measures"* of the PoA-DD. Technologies/measures are evaluated by the VVB in section 3.3 of the PoA-FValR (Final Validation Report of the PoA). No errors, omissions, misstatements, or incomplete information have been identified.

2. **FAR 2. The project area boundary and scale shall be clearly defined by CME:** the project area boundary and scale were correctly included by the PD (Project Developer) in section "*A.2. Physical/ Geographical boundary of the PoA*", "*B.3. Eligibility criteria for inclusion of a VPA in the PoA*", item "*Location/Geographic boundary of the VPA*" and the scale included in sections "*Key Project Information*" (first page); and section "*B.3. Eligibility criteria for inclusion of a VPA in the PoA*", item "*Meet the small-scale and remain within those thresholds throughout the crediting period*" of the PoA-DD.

   PoA boundary were assessed by the VVB in section 3.2 of the PoA-FValR and scale was assessed by the VVB in section 3.9 of the PoA-FValR (eligibility criteria #10). No errors, omissions, misstatements, or incomplete information have been identified.

3. **FAR 3. CME shall explain the criteria for identifying schools in the VPA**: Criteria for identifying schools in the VPA were clearly included in section B.3. Eligibility criteria for inclusion of a VPA in the PoA", row "Eligibility criteria for schools to join a VPA" of the PoA-DD. This is part of an eligibility criteria. Hence, it has been assessed by the VVB in section 3.9 of the PoA-FValR, eligibility criteria #9 "Eligibility criteria for schools to join a VPA". No errors, omissions, misstatements, or incomplete information have been identified.

4. **FAR 4. CME shall explain and provide the details of baseline surveys, water quality tests and hygiene camps conducted to the validating VVB**: These topics are specific of the real case VPA1. Hence, those are considered by the PD in the VPA-DD and VPA-MR and evaluated by the VVB in the VPA-FValR (Final Validation Report of the VPA) and the VPA-FVerR (Final Verification Report of the VPA). Please refer to the specific section of documents for detailed description the requested items:

	PD		**VVB**	
	VPA-DD	**VPA-MR**	**VPA-FValR**	**VPA-FVerR**
Baseline survey	Section B.4	Section D.1, parameters	Section 3.11	Section 3.4
Water quality tests	Section B.7.1, parameter SDWS 18.	Section D.2, parameter SDWS 18.	Section 3.19, parameter SDWS 18.	Section 3.5, parameter SDWS 18.
Hygiene campaigns	Section B.7.1, parameter SDWS 20.	Section D.2, parameter SDWS 20.	Section 3.9, applicability criteria "i" and section 3.19 parameter SDWS 20.	Section 3.5, parameter SDWS 20.

No errors, omissions, misstatements, or incomplete information have been identified.

FAR is closed.

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

Table 2. CL from this verification

CL ID	01	**Section no.**	3.16 of the FValR	**Date:** 03/06/2024
Description of CL				
During Technical Review performed on the VPA level (31/05/2024), the following has been raised: **Section B.6.1** of the VPA-DD: Regarding calculation of leakage, how has been made the relation/calculation of the 5% leakage amount to demonstrate it is depreciable. How a quality measure can convert on quantity measure. Please clarify and improve.				
Project participant response				**Date:** 11/06/2024
The PD has included a quantitative estimate for the potential source of leakage. The single relevant source of leakage is the potential reduction in the NRB. For this source the estimated amount of firewood saved per year is of 218[2] tonnes. The Commercial woody biomass consumption for energy applications (including institutional uses of woody biomass)[3] is 907,14 tonnes per year. The project savings represent only the 24% of the total consumption. Therefore, the impact of the project on the availability of biomass is negligible, as well the potential source of leakage.				
Documentation provided by project participant				
4_GS VPA-Design-Document Amazi Meza Rwanda VPA1 v1.2 11Jun 2024 Responses TR comments.docx 7_Virridy Forecast Ex-Ante ERs v3.3 07 Jun 24 VPA1.xlsx				
DOE assessment				**Date:** 13/06/2024

[2] This is estimated baed on the Specific energy required to boil 1 L of water, the firewood NCV, and the Amount of water supplied by the project per year. For more details, see ERs calculation spreadsheet, tab 'Parameters', cells B94:D97.
[3] This is the Average consumption of wood fuel per household, including fuelwood and charcoal, in the applicable area in the relevant period (tonnes/household) as applied in the calculation of the fNRB.

Quantification has been given to demonstrate that leakage emissions are less than 5% of total emission reductions. For this purpose, it has been established:

1. The estimated amount of firewood saved per year by the VPA is of 218 tonnes, considering on the specific energy required to boil 1 liter of water, the amount of fuel wood to boil 1 liter of water based on the NCV of the firewood and the amount of water supplied by the project per year. The input values have been checked in the ex-ante ER calculation spread sheet[/7/]. No discrepancies were identified.

2. On the other side, the (commercial) yearly woody biomass consumption for energy applications is 907,14 tonnes (from the average consumption of wood fuel per household, as applied in the calculation of the fNRB). The input values have been checked in the fNRB calculation[/8/]. No discrepancies were identified

As a result, the VPA savings represent 0.024% of the total consumption considered. Hence, it has been concluded by the PD the impact of the project on the availability of biomass is negligible, as well the potential source of leakage. The estimation was correctly calculated based on traceable sources included in the respective spread sheets. No errors, miscalculations, omissions, misstatements, or incomplete information have been identified.

CL is closed.

CL ID	02	**Section no.**	3.16 of the FValR	**Date:** 03/06/2024
Description of CL				
During Technical Review performed on the VPA level (31/05/2024), the following has been raised: **Section B.7.1** of the VPA-DD: a) Considering the sensitive that this calculation has imply. Please include a detailed calculation description for the parameters with the assumption and sources. b) To demonstrate 84.85% is conservative, please do a cross-check with other projects. c) It has been included as parameter to be monitored. Please correct.				
Project participant response				**Date:** 11/06/2024

a) The Assumption, sources, values and other references can be found in the fNRB calculation spreadsheet, which has been made available to the validator. It is not practical to include all the values and assumption the table.
The image below shows how other project summarize the sources and information regarding the fNRB e.g. no detailed calculation description as requested by the reviewer. All the referred project al already design certified projects.

GS11098 GS10959 VPA01 Safe Water Project in Rwanda I

Data/parameter	$f_{NRB,b,y}$
Unit	Percentage
Description	Fraction of biomass used that can be established as non – renewable biomass in the baseline scenario b during year y
Source of data	C30 of Document "3-Rwanda fNRB_20210705" The value was calculated as per CDM Tool 30 "Calculation of The fraction of Non-renewable Biomass" (Version 03.0). Other reference documents: 2019 Refinement to IPCC 2006 Global Forest Resources Assessment 2020 Rwanda Global Forest Resources Assessment 2015 Forest Product Conversion Factors 2020 FAOSTAT on Forest Production and Trade (http://www.fao.org/faostat/en/#data/FO)
Value(s) applied	0.9682
Choice of data or Measurement methods and procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	-

GS11639
SPOUTS Water Purifier Programme in Africa- WPS in Rwanda-VPA 1

Data/parameter	$f_{NRB,f,y}$
Unit	Percentage
Description	Fractional non-renewability status of woody biomass fuel during year y, in case the baseline fuel is biomass
Source of data	Assessment based on CDM Methodological tool 30: Calculation of the fraction of non-renewable biomass, Version 03.0
Value(s) applied	0.9682[16]
Choice of data or Measurement methods and procedures	The value was calculated as per CDM Tool 30 "Calculation of The fraction of Non-renewable Biomass" (Version 03.0). Other reference documents: 2019 Refinement to IPCC 2006 Global Forest Resources Assessment 2020 Rwanda Global Forest Resources Assessment 2015 Forest Product Conversion Factors 2020 FAOSTAT on Forest Production and Trade (http://www.fao.org/faostat/en/#data/FO)
Purpose of data	Calculation of baseline scenario
Additional comment	The f_{NRB} value will remain fixed during the crediting period.

GS12227 GS12228 GS7591 VPA 53 Improved Cookstove Distribution in Kayonza, Bugesera and Nyamasheke Districts of Rwanda

Data / Parameter	$fNRB_y$
Unit	Fraction
Description	Fraction of non-renewable biomass used in year y
Source of data	fNRB Assessment. The fNRB value for this project has been calculated by using the CDM Tool30 with FAO data (using 2015 and 2020 sources). See "Rwanda fNRB Calculations" spreadsheet for calculations.
Value(s) applied	0.9
Measurement methods and procedures	Deemed valid by Methodology
Monitoring frequency	Annually
QA/QC procedures	
Purpose of data	Calculation of emission reductions.
Additional comment	-

Data / Parameter	$f_{nrb,f,x}$
Unit	Percentage
Description	Fractional non-renewability status of woody biomass fuel during year *y*, asthe baseline fuel is biomass or charcoal
Source of data	Determined by: - CDM TOOL30[20], Calculation of the fraction of non-renewable biomass
Value(s) applied	92.23%
Measurement methods and procedures	CDM TOOL30[20], Calculation of the fraction of non-renewable biomass
Monitoring frequency	Determined ex-ante and fixed for a given crediting period (if it is fixed ex-ante, then include $f_{NRB,f,y}$ in the "data and parameters fixed ex ante" section of the PDD), -
QA/QC procedures	Requirements of the CDM TOOL30
Purpose of data	Estimation of emissions reductions
Additional comment	Results of the fnrb calculation can be found in the report "*Calculation of the fraction of non-renewable biomass (fnrb), CDM Tool 30 EB 115 Annex 22 v4.0 2022*", 2024, Seed Ecology and Cape Climate Collective

b) The list below shows the fnrb values of similar projects in Rwanda

Project	fNRB Value
GS11137 GS10959 VPA06 Safe Water Project in Rwanda VI GS11136 GS10959 VPA05 Safe Water Project in Rwanda V GS11135 GS10959 VPA04 Safe Water Project in Rwanda IV	96.82%

GS11134 GS10959 VPA03 Safe Water Project in Rwanda III GS11133 GS10959 VPA02 Safe Water Project in Rwanda II GS11098 GS 10959 VPA01 Safe Water Project in Rwanda I	
GS12310 GS11638 GS11639 RVPA-3 SPOUTS Water Purifier Programme in Africa- WPS in Rwanda- VPA 8 GS12309 GS11638 GS11639 RVPA-2 SPOUTS Water Purifier Programme in Africa- WPS in Rwanda- VPA 7 GS12308 GS11638 GS11639 RVPA-1 SPOUTS Water Purifier Programme in Africa- WPS in Rwanda-VPA 6 GS11639 GS11638 VPA-1 SPOUTS Water Purifier Programme in Africa- WPS in Rwanda- VPA 1	96.82%
GS12227 GS12228 GS7591 VPA 53 Improved Cookstove Distribution in Kayonza, Bugesera and Nyamasheke Districts of Rwanda The other 52 VPAs have the same value	90%
GS6598Water for Climate Rwanda	92.23%

All the referred project al already design certified projects.

c) The parameter has been moved to the section 'data and parameters fixed ex-ante" s included in the monitoring section because the methodology applied include it in

Documentation provided by project participant	
4_GS VPA-Design-Document Amazi Meza Rwanda VPA1 v1.2 11Jun 2024 Responses TR comments.docx	
DOE assessment	**Date:** 13/06/2024

a) The fNRB calculation spreadsheet has been referenced and it has been evaluated by the VT in section 3.16 of this report (see page 48). No errors, miscalculations, omissions, misstatements, or incomplete information have been identified.

b) Values of fNRB from similar projects have been provided as cross check:

Project	Value	Reference
GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools (this project)	84.85%	**fNRB Calculation**[8]
GS10959 VPA06 Safe Water Project in Rwanda VI	96.82%	https://registry.goldstandard.org/projects/details/3092
GS7591 VPA 53 Improved Cookstove Distribution in Kayonza, Bugesera and Nyamasheke Districts of Rwanda (GS12227)	90%	https://registry.goldstandard.org/projects/details/4175
Water for Climate Rwanda (GS6598)	92.23%	https://registry.goldstandard.org/projects/details/1531

The difference between the higher compared value is 11.97% and with the lower value is 5.15%. The average of the compared values is 93%. The calculated value is considered reasonable as compared to other registered projects in the host country. Hence, the calculated fNRB is considered plausible and correct.

c) The parameter has been corrected to fixed ex-ante. No further discrepancies identified.

CL is closed.

Table 3. CAR from this verification

CAR ID	01	**Section no.**	3 of the FVR	**Date:** 19/04/2024
Description of CAR				
Front page (Key Project information): 1. GS ID of VPA: please check as it is written GS12239 but the ID of the VPA is GS12240. 2. Other requirements applied: There is now available version 2.1 of the Programme of Activities Requirements and Procedures. Version 2.0 has been referenced				
Project participant response				**Date:** 01/05/2024
The correct GS ID of the VPA and the correct version of the GS PoA Requirments has been updated in the Front page of the VPA-DD.				

Documentation provided by project participant	
4_GS VPA-Design-Document Amazi Meza Rwanda VPA1 v1.3 26 Apr 2024	
DOE assessment	**Date:** 03/05/2024

3. Correct number of the VPA has been included. No further discrepancies were identified.

4. Version 2.1 of the Programme of Activities Requirements and Procedures have been now referenced. No further discrepancies were identified.

CAR is closed.

CAR ID	02	**Section no.**	3 of the FVR	**Date:** 19/04/2024

Description of CAR

Section B of the PoA-DD:

1. **Section B.1:** Rule update: Application of suppressed demand, project type and applicable scale threshold (RU 2020 PR-GHG V1.2) has not been mentioned here nor section B.4

2. **Section B.6.2:** Please include parameter number as per methodology to facilitate identification (e.g. SDWS 1)

3. **Section B.7.1:**

   a) Please follow order of the applied methodology.
   b) Please include parameter number as per methodology to facilitate identification (e.g. SDWS 1).
   c) $Xcleanboil,y$ (SDWS 22) is a parameter related to emission reduction and not related to water quality. Correction is necessary.
   d) Why no SDG parameters have been included in this section.

4. **Section B.7.3:** According to the GS Programmes of Activities Requirements: the monitoring plan shall also include the following other elements:

   a) The operational and management structure to be put in place to implement the monitoring plan

   b) Provisions to ensure that data monitored and required for verification and issuance are kept and archived for at least two years after the end of the final crediting period or the last issuance of VERs, whichever occurs later

   c) Definition of responsibilities and institutional arrangements for data collection and archiving

   This information has not been included in the monitoring plan arrangements. Corrections is necessary.

Project participant response	**Date:** 01/05/2024

1. The section B.1 and B4 has been updated to mention the GS Rule update about thresholds for project applying the suppressed demand approach. 2. The parameter ID number in section B.6.2 has been included for all the parameters. The parameters are listed in ascending order to ease the identification. 3. a. The parameter ID number in section B.7.1 has been included for all the parameters. The parameters are listed in ascending order to ease the identification. b. The parameter ID number in section B.7.1 has been included for all the parameters. The parameters are listed in ascending order to ease the identification. c. The parameter $X_{cleanboil,y}$ (SDWS 22) has been included in the section of emission reductions. d. The SDWS 19 relating SDG claim has been added in section B.7.1. 4. a. Operational and management structure has been added in section B.7.3 as part of the monitoring plan. b. The records, data and project supporting evidence will be kept4 by the CME for at least two (2) year after the end of the crediting period. The VPA-DD, section B.7.3 has been updated accordingly. c. Definitions of responsibilities structure has been added in section B.7.3 as part of the monitoring plan.
Documentation provided by project participant
4_GS VPA-Design-Document Amazi Meza Rwanda VPA1 v1.3 26 Apr 2024
DOE assessment | **Date:** 03/05/2024

[4] Project records and data can be stored either in physical or electronic format.

10. The Rule update "application of suppressed demand, project type and applicable scale threshold (RU 2020 PR-GHG V1.2)" has been now included as requested.

11. **Section B.6.2:** Parameter numbering as per methodology has been now included. No further discrepancies were identified.

12. **Section B.7.1**:
    a) Parameter order has been now followed. No further discrepancies were identified.
    b) Numbering as per methodology has been now included. No further discrepancies were identified.
    c) Parameter $X_{cleanboil,y}$ (SDWS 22) is now correctly classified. No further discrepancies were identified.
    d) SDG parameter (SDWS 19) has been now included in this section as requested. No further discrepancies were identified.

13. **Section B.7.3:**
    a) The operational and management structure has been now included in this section as requested. It is as per real situation observed during on-site visit. No errors, omissions, misstatements, or incomplete information have been identified.
    b) Provisions to ensure that data monitored and required for verification and issuance are kept and archived for at least two years after the end of the final crediting period are now considered in this section as requested. No further discrepancies were identified.
    c) Definition of responsibilities and institutional arrangements for data collection and archiving are now considered in this section as requested. No further discrepancies were identified.

CAR is closed.

CAR ID	03	**Section no.**	3 of the FVR	**Date:** 19/04/2024
Description of CAR				
Section C of the VPA-DD: please check as the start date of the VPA 26/06/2023 but calculations start on 01/07/2023.				
Project participant response				**Date:** 01/05/2024
Corrected as requested				
Documentation provided by project participant				
7_Virridy Forecast Ex-Ante ERs v3.2 26 Apr 24 VPA1				
DOE assessment				**Date:** 03/05/2024
The starting date of the PoA corresponds to the first filter installed which occurred in 26/06/2023. The Filter installation database has been checked to confirm the date. Furthermore, this has been also confirmed in the company system. No errors, omissions, misstatements, or incomplete information have been identified. This has been aligned with the ex-ante calculation of ER. **CAR is closed.**				

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

CAR ID	04	**Section no.**	3 of the FVR	**Date:** 19/04/2024

Description of CAR

Section F of the VPA-DD:

1. Means of verification and supporting evidence of several has not been provided as required by the template: "*Description of the VPA in relation to the criteria, means of verification and supporting evidence for inclusion*". Please check.

2. According to paragraph 5.5.2 of the GS Programme of Activities Requirements and Procedures:

   "In real case VPA, the CME shall select one of the following or both options for safeguarding assessment as inclusion criteria for its regular VPAs;

   a) Safeguarding assessment and monitoring and reporting shall be conducted at the each regular VPA level,

   b) Regular VPAs shall be exempted from Safeguarding assessment, where monitoring and reporting of identified risk and mitigation plan shall be conducted following real case VPA level safeguarding assessment outcome, where applicable".

   If CME opts for option (b), in such cases, conditions of section 5.5.3 shall be applied.

   No option has been declared. Correction is necessary.

   Please also take into consideration that as per the Validation and Verification Standard:

   "The VVB shall assess whether the real case VPA-DD defines the inclusion criteria, applicability conditions and requirements including evidence and justifications provided for selected options, correctly for demonstration of compliance with Safeguarding Principles and Requirements at regular VPA level".

   Please consider all these elements as those will be also assessed.

3. According to the Validation and Verification Standard: "The VVB shall determine whether the proposed real case VPA(s) has described the inclusion criteria for Gender Equality Requirements & Guidelines for its regular VPA(s)". This has not been included in section F nor clarified. Please check.

4. According to paragraph 5.12.5 of the GS Programme of Activities Requirements and Procedures "the CME shall provide details of the approach chosen for site-visits in view of the inclusion of future regular VPAs in the real case VPA DD". This information has not been included. Correction is necessary.

Project participant response	**Date:** 01/05/2024

1. Means of verification and supporting evidence for the eligibility criteria of the VPA have been included. 2. The CME choses the option (b). The same conformation along with the justification of the specific criteria described in the paragraph 5.5.3 have been added in the section D.1 of the VPA-DD. 3. The project didn't identify a risk or a mitigation measure regarding gender sensitive requirements, therefore, not specific inclusions criteria are added in that sense. Further information has been added in the section D.2 explaining the same. 4. The approach for the site-visit in the light of inclusion of future VPAs has been included in the section F of the VPA-DD. The approach proposed by the CME for site visit in the light of inclusion of further regular VPAs consist in having a site visit every 5 VPAs. This approach is deemed reasonable considering it represent a site visit of 20% of the VPAs to be included.
Documentation provided by project participant
4_GS VPA-Design-Document Amazi Meza Rwanda VPA1 v1.3 26 Apr 2024
DOE assessment | **Date:** 03/05/2024

1. Means of verification and supporting evidence of each eligibility criteria has been now provided as required by the template. The VT considers the selected means of verification and supporting evidence as plausible and aligned with the project context situation. No errors, omissions, misstatements, or incomplete information have been further identified. The section complies with the requirements of the applied template.

2. Selected option has been now made clear in section D.2 of the VPA-DD. The criteria established in section 5.5.3 of the GS Programme of Activities Requirements and Procedures have been also followed. As stated in paragraph c of the same requirement, the VVB shall validate, and Gold Standard shall approve applicability of option (b). Evaluation is as follow:

Criteria as per 5.5.3	Justification	Assessment
a. the CME shall provide explanation and justifications with supporting evidence for selection of this option in real case VPA, including conditions or circumstances under which option (b) shall not be applicable.	Detailed in the Appendix 1, no risk was identified for any safeguarding principle, neither mitigation measures were required. The expected real cases VPAs to be included will use the same technology type and the target population is the same, the CME does not expect a different outcome from the Safeguarding principle assessment for the regular case VPAs. Thus, the option b is justified. Option b will not be applicable in case a design change on the Real case VPA is introduced.	This criteria has been included in the VPA-DD as per requirements of the rogramme of Activities Requirements and Procedures. No discrepancies were identified. The CME has provided explanation and justification of the selection of this option. As no risks have been identified for any of all safeguarding principles, mitigation measures were also not necessary to be applied. The VT reviewed all justifications provided by the CME as found them plausible and acceptable. It can be concluded that with the implementation of the VPA, no risks are neither identified for the real case as the same technology will be implemented in the same type of schools. No errors, omissions, misstatements, or incomplete information have been identified.
b. the CME shall include inclusion criteria based on identified risks and mitigation plan in real case VPA DD with respect to the relevant safeguarding principles.	NA, no risk identified neither mitigation measure defined.	As mentioned above, no risks were identified nor mitigation actions applied. Hence, no inclusion criteria on this matter are necessary to be considered.

c. the VVB shall validate, and Gold Standard shall approve applicability of option (b),	To be validated and approved by the VVB and GS respectively.	See this assessment.
d. the CME shall demonstrate compliance with inclusion criteria for each of its regular VPAs	The inclusion criteria for regular VPAs are clearly defined in section F below.	All inclusions criteria defined in section F of the VPA-DD has been properly assessed in section 3.25 of this report. Please refer to it.
e. the option (b) shall only be applied to regular VPAs submitted for inclusion within three years of crediting period start date of real case VPA	Only regular VPAs submitted as latest 26/06/2026 can follow the option (b) chosen.	Rule has been included as per requirement. No errors, omissions, misstatements, or incomplete information have been identified.
f. The CME may seek reapproval for option (b) after three years demonstrating compliance with the requirements outlined above in sub paragraph a to d above. Such re-approval may be validated and submitted for approval with the verification request. After re-approval the option (b) can be applied until crediting period end date of real case VPA	In case regular VPAs submitted after 60/06/2026 want to follow the option (b), validation and approval by the VVB and GS respectively will be sought.	Rule has been included as per requirement. No errors, omissions, misstatements, or incomplete information have been identified.

3. Clarification has been provided. As included in section D.2 of the VPA-DD, the project didn't identify a risk or a mitigation measure regarding gender sensitive requirements, therefore, not specific inclusion criteria are added in that sense. The risks identification has been checked again to confirm that no risks regarding Gender Equality. Hence, it is justified that no inclusion criteria for VPA inclusion has been defined. No errors, omissions, misstatements, or incomplete information have been identified.

4. Details of the approach chosen for site-visits in view of the inclusion of future regular VPAs in the real case VPA DD has been now considered in section F of the VPA. According the document:

   "The approach proposed by the CME for site visit in the light of inclusion of further regular VPAs consist in having a site visit every 5 VPAs. This approach is deemed reasonable considering it represent a site visit of 20% of the VPAs to be included".

   The selected approach for site visits in view of the inclusion of future regular VPAs is considered appropriate by the VT as if we consider the site visit and remote audit

requirements and procedures, section 3.2, a physical site visit by VVB is not mandatory at the validation (Design Certification or Design Certification Renewal) of a project. This applies for PoA and VPA as well as per paragraph 3.2.3. Hence, it is considered indeed adequate to perform on site visits in every 5 VPAs.

CAR is closed.

CAR ID	05	**Section no.**	3 of the FVR	**Date:** 19/04/2024

Description of CAR

ER calculation spread sheet:

1. **Tab "Parameters"**:

   a) Please check cookstove efficiency in line 73 as it differs from line 72 and it is the same type of device (0.1 Vs 0.2).
   b) Cell C27 for usage time (SDWS 30) has been assigned the default value (5 hrs) but during on site assessment it was discussed/observed that school time is 8 hours. Please check.

2. **Tab "Assumptions"**: Information from preliminary expectation of filters to be installed from June to December (e.g. 100 schools) shall be eliminated as it causes confusions;

3. **Tab "Total ERs"**: The whole calculation spread sheet shall be updated considering the issues raised above.

Project participant response	**Date:** 01/05/2024

Corrected as requested

Documentation provided by project participant

7_Virridy Forecast Ex-Ante ERs v3.2 26 Apr 24 VPA1

DOE assessment	**Date:** 03/05/2024

1. Tab "Parameters":

   a) Cookstove efficiency has been now corrected and now it is consistent between all efficiencies. This was also confirmed during on site assessment. No further discrepancies were identified.
   b) Correction has been done for usage time (SDWS 30) as per actual situation observed. No further discrepancies were identified.

2. Information from preliminary expectation of filters to be installed from June to December has been eliminated to avoid confusions. No further discrepancies were identified.

3. Calculation spread sheet has been correctly updated. No errors, miscalculations, omissions, misstatements, or incomplete information have been identified.

CAR is closed.

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

CAR ID	06	**Section no.**	3 of the FVR	**Date:** 03/06/2024
Description of CAR				

During Technical Review performed on the VPA level (31/05/2024), the following has been raised:

Section B.5 of the VPA-DD:

a) According, to the applied methodology, paragraph 3.3.1 the project developer shall demonstrate that the project could not or would not take place without carbon finance. Possible reasons for the need for carbon finance may be that the initial investment or the on-going marketing, distribution, quality control, manufacturing and maintenance costs are unaffordable for the target population.

   Please provide more information in the VPA-DD to demonstrate fulfilment of this requirement.

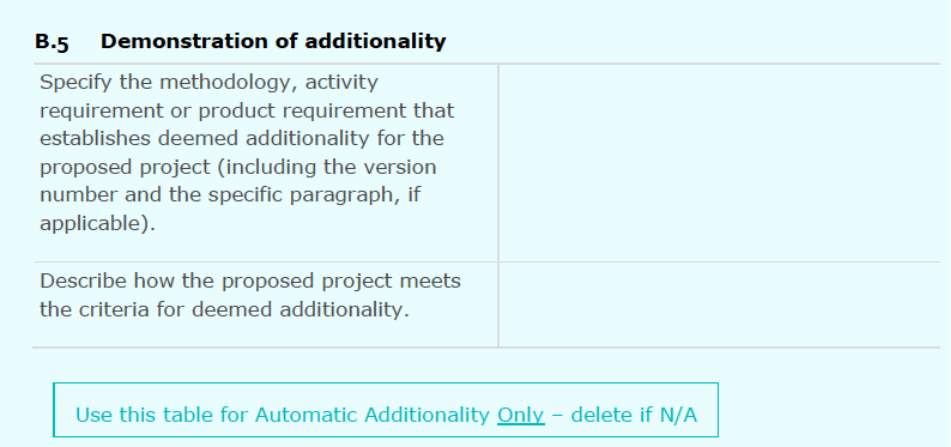
b) Furthermore, according to paragraph 1.1.3 of the Community Services Activity requirements:

   Project activities solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year **or** <= 600 tonnes of emission reductions per year.

   This has been demonstrated through the emission reductions threshold per year but need also to be demonstrated through energy savings per year.

Project participant response	**Date: 11**/06/2024

a) The above-mentioned requirement applies when the project demonstrate additionality through the conventional procedure e.g. applying financial additionality, UNFCCC approved additionality tool, etc. Since the project is deem as additional, the specific information in this regard is explained instead. The image below shows how the GS GUIDE TO COMPLETING THE VPA-DD (page 12) indicates this section need to be fulfilled.



B.5 Demonstration of additionality

Specify the methodology, activity requirement or product requirement that establishes deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).	
Describe how the proposed project meets the criteria for deemed additionality.	

Use this table for Automatic Additionality Only – delete if N/A

b) The referred paragraph clearly states that capacity threshold can be <= 600 tonnes of emission reductions per year OR <= 600 MWh of energy savings per year. The conjunction OR is always interpreted as selection of one alternative among different option. When the conjunction "And" is used, both conditions should be meth. Clearly, this is not the case. Regardless the wrong interpretation from the reviewer, the PD has calculated the capacity of the units in MWh/y. The value calculated is 45.146 MWh th/y[5]. The project meets the threshold.

Documentation provided by project participant	
4_GS VPA-Design-Document Amazi Meza Rwanda VPA1 v1.2 11Jun 2024 Responses TR comments.docx	
DOE assessment	**Date:** 13/06/2024

[5] This is based on the Specific energy required to boil water, the maximum capacity of the filter (27.2 l/h, and a continuous operation during 8 hours during 207 days per year as per the school calendar.

a) Section B.5 of the VPA-DD: According to the PoA-DD, the proposed project activity is a voluntary action coordinated by Virridy. There is no mandatory laws or specific requirements/13/ in Rwanda to foster the installation of water filtration technologies. In the absence of the project, the common practice treatment method (e.g. boiling) or consumption of untreated water would be taken as the business-as-usual scenario in the selected schools. This has been confirmed through on-site visit and interviews performed. No discrepancies were identified.

The provision of water treatment is not financially viable in the context of implementation of the proposed VPA, which makes it not financially attractive and makes the carbon revenues crucial for the implementation and operation of the VPAs.

Furthermore, this kind of justification is applicable when additionality is demonstrated through financial analysis which this is not the case.

b) Clarification has been provided. It is also VT understanding that it is either one option or the other one. Nevertheless, the PD calculated also the energy savings per year which results in 45.146 MWh. This is below the threshold of 600 MWh. Both conditions are fulfilled even it is not necessary and the PD has selected the one related with tCO2e per year. The ER calculation/7/ has been checked. No errors, miscalculations, omissions, misstatements, or incomplete information have been identified.

CAR is closed.

CAR ID	07	**Section no.**	3.24 of the FVR	**Date:** 22/06/2024
Description of CAR				
This has been raised during 2nd round of Technical Review performed (21/06/2024): **Section E of the VPA-DD:** The LSC feedback is not consistent with the GS feedback requirements Para 3.6.9 to 3.6.13. There is not relevant description of feedback round description on VPA-DD. Please include additional description				
Project participant response				**Date:** 09/07/2024

The project does comply with the Stakeholder Consultation and Engagement Requirements v2.1, paragraphs 3.6.9 to 3.6.13. Please refer to the justification below on each paragraph.

- 3.6.9: Comments and questions received during the physical stakeholder consultation were addressed during the meeting. For details please refer to 5_GS12240_VPA Stakeholder-Consultation-Report_v1.0 30Nov2023, section C.3.
- 3.6.10: All stakeholders were invited to provide feedback during the stakeholder feedback round. For details please refer to 5_GS12240_VPA Stakeholder-Consultation-Report_v1.0 30Nov2023, section E.2.
- 3.6.11: No project changes were made as a result of the comment received during the stakeholder consultation, meaning that the documentation did not need any updates. The documentation was shared 30 days before the meeting, again twice before the meeting in reminder emails, and also during the meeting. The information shared included contact details for submission of further comments and questions. For details please refer to 5_GS12240_VPA Stakeholder-Consultation-Report_v1.0 30Nov2023, sections B.1.3; C.2; C.4; E.2.
- 3.6.12: Virridy provided all stakeholders with the feedback form and grievance form. No comments were received from stakeholders after the meeting. For details please refer to 5_GS12240_VPA Stakeholder-Consultation-Report_v1.0 30Nov2023, section E.2.
- 3.6.13: The Stakeholder Feedback Round lasted for two months from 23/06/2023 to 22/08/2023, which is above GS Stakeholder Consultation and Engagement Requirements v2.1, paragraph 3.1.3 which requires the stakeholder feedback round to last for at least one month.

The project developer has included additional details about the stakeholder consultation in the VPA-DD Section E, while also keeping it as a summary. All information on the stakeholder consultation is available in the previously shared VPA Stakeholder Consultation Report (5_GS12240_VPA Stakeholder-Consultation-Report_v1.0 30Nov2023).

Documentation provided by project participant

4_GS VPA-Design-Document Amazi Meza Rwanda VPA1 v1.3

DOE assessment	**Date:** 11/07/2024

A complete clarification has been given regarding fulfilment of Stakeholder Consultation and Engagement Requirements v2.1, paragraphs 3.6.9 to 3.6.13. In Proper sections of the Validation Report, an assessment of the requirements have been given.

CAR is closed.

CAR ID	08	**Section no.**	3.11 of the FVR	**Date:** 22/06/2024

Description of CAR

This has been raised during 2nd round of Technical Review performed (21/06/2024):

Section B.4: Please check the Programme of Activity requirements and procedures v.2.0 Para 5.9.4, where the CME shall explain how to establish the baseline Scenario considering relevant national and/or sectoral policies, regulations and circumstances. This has not been done in the VPA-DD.

Project participant response	**Date:** 09/07/2024

Additional information on national sectoral policies and their relation with the establishment of the baseline scenario has been included in the VPA-DD, Section B.4.

Documentation provided by project participant	
4_GS VPA-Design-Document Amazi Meza Rwanda VPA1 v1.3	
DOE assessment	**Date:** 11/07/2024

According to the VPA-DD:

a) The proposed project activity does not overlap, displace or is considered redundant to the main national sectoral policies for mitigation of GHG;
b) There are no mandatory laws or specific requirements in Rwanda to foster the installation of water filtration technologies;
c) The common practice treatment method (e.g. boiling) or consumption of untreated water would be taken as the business-as-usual scenario (i.e. baseline scenario) in the selected schools,
d) Water treatment implies costs that schools cannot afford, and Rwanda's frameworks and regulations, while related to water resources, water supply, and sanitation, still fails to provide adequate protection and effective treatment of water, exposing communities, including the schools, to health risks.

To confirm the above information, the following evidence have been checked:

- Rural Drinking Water Quality Management Framework/13/
- Rwanda Standard (RS EAS 12:2014), Potable water – Specification (RSB 2014) /13/
- National Water and Sanitation Policy (2023)/CC/
- Water Law No. 62/2008/DD/
- National Guidelines for Sustainable Rural Water Supply Services (2019)/EE/

It can be confirmed that there is no publicly available evidence to demonstrate installing water filter technologies in schools is mandatory. Furthermore, during on site visit, it has been demonstrated through interviews with head master, teachers and employees of the sampled schools that the common practice for drinking water purposes is to boil the water or drinking directly from its source. Furthermore, without water filters, students drink less water than expected (supresed demand). Hence, it can be concluded that relevant national and/or sectoral policies, regulations and circumstances have been taken into account in the establishment of the baseline scenario.

CAR is closed.

Table 4. FAR from this validation

No FAR has been raised during the validation

~~**FAR ID**~~		~~**Section no.**~~		~~**Date:**~~
~~**Description of FAR**~~				
~~**Project participant response**~~				~~**Date:**~~
~~**Documentation provided by project participant**~~				
~~**DOE assessment**~~				~~**Date:**~~

LGAI Technological Center, S.A.
Campus UAB – Ronda de la Font del Carme, s/n
08193 Bellaterra – Barcelona
(Spain)
Tel.:+34 93 567 20 08
Fax.:+34 93 567 20 01
www.appluscertification.com

Appendix 2: Audit Team CVs

Name	SHORT CV. BACKGROUND INFORMATION
Mr. Raul G. Mitre, PhD	Mr. Raul G. Mitre is a professional with more than 17 years of experience in climate change and sustainability, specialized in Monitoring, Reporting and Verification (MRV) evaluating more than 300 projects in more than 20 countries all over the globe. Raul has a degree in Industrial Administration, specializing in productivity and quality from the National Polytechnic Institute of Mexico. He holds a Master's degree in Quality Management from the University La Salle of México City, a Master's degree in Project Management from the University Ramon Llull of Barcelona, a postgraduate degree in Integrated Management Systems from the University of Wismar in Germany, an MBA from the University La Salle of Andorra and a PhD in Sustainability - Climate Change with the Pan American Center for Higher Education in Mexico. He is also an international auditor of ISO 9001 (quality), ISO 14001 (environment), ISO 45001 (occupational safety), ISO 37001 (anti-bribery), ISO 50001 (energy efficiency), ISO 14064-1 (GHG quantification & reporting for organizations) ISCC (International Sustainability Carbon Standard and RSB (Roundtable of Sustainable Biomaterials). Currently he is associated with NOVA CERT, LLC (Applus+ Certification's Outsourced Entity). Mr. Raul G. Mitre is based in Germany.
Mr. Munguakonkwa Taka Hubert	Mr Taka is a professional with more than 7 years of experience in East Africa, his work as a project manager and site engineer has increased his experience working in collaboration with the local communities. He has been in Rwanda for the past 4 years and obtained there a master's in Renewable energy at the University of Rwanda in 2021 after getting a bachelor's in Electrical power systems in DR Congo. He is currently finishing a master's in Business and Administration at Mount Kigali University with specialisation in strategic management. In 2022 he joined one of the biggest design studios in the world named MASS Design where he worked on-site in Musanze District, Kinigi sector at The Ellen DeGeneres Campus of the Dian Fossey fund for a year before being deployed in Bugesera, District Gashora sector at The Rwanda Institute for Conservation Agriculture: RICA. Mr. TAKA is fluent in Kinyarwanda, Swahili, English, and French giving him the possibility to work in most countries in Africa and beyond. He is currently an energy consultant with a focus on access to finance, clean cooking, and credit carbon. He is also a researcher and an advocate for SDG7.
Mr. Miguel A. Cortés Díaz	Mr. Miguel Cortés holds a Bachelor's Science Degree on Civil and Environmental Engineering, being specialized on Hydric Resources. He has worked as CDM/VCS/GS and environmental consultant for different industries of multidisciplinary sectors world widely.

	Mr. Miguel Cortés counts with several years of GHG assessment experience, working and being qualified as Lead Auditor and Technical Reviewer for different DOEs world widely, as well as has been part of Gold Standard expert's committees. Furthermore, he has performed his professional GHG assessment portfolio career worldwide and focusing in Latin America, developing assessments for projects in Argentina, Mexico, Panama, Colombia and Chile, among others.